Study Motivation, Self-Esteem and Stress in University Students with Special Educational Needs: A Comparative Analysis with Normotypical Students

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ABSTRACT   **Published Online: February 14, 2026**

This study examines the relationship between self-esteem, study motivation, attentional difficulties, and perceived stress among university students with special formative needs, including specific learning disorders and disabilities), certified by public healthcare institutions. The research aims to compare these students (n. 150) with their typically developing peers (n. 150) to identify differences in academic and psychological factors. Results indicate that students with special needs demonstrate similar organizational study skills but exhibit higher metacognitive awareness and information processing abilities, likely as a compensatory mechanism. However, they face greater challenges in planning and structuring their learning process. While their perceived stress levels are slightly higher, their self-esteem is unexpectedly higher than that of typically developing students, possibly due to the resilience developed through overcoming academic difficulties. These findings highlight the importance of tailored support programs, including tutoring, digital tools, and psychological support, to enhance study strategies and stress management for both student groups. Addressing these challenges effectively could lead to a more inclusive and successful academic experience for all students.

KEYWORDS: Special Needs, Academic Success, Self-Esteem, Study Motivation, Perceived Stress, University Students.

INTRODUCTION

The academic success and psychological well-being of university students with special educational needs represent a significant challenge in the context of higher education. Compared to typically developing students, these students may experience additional difficulties that affect their self-esteem, motivation to study, and level of perceived stress (Schunk & Di Benedetto, 2021).

Self-esteem is a significant predictor of academic performance and psychological adjustment for both groups of students (Rosenberg, 1965; Orth & Robins, 2022). However, while typically developing students tend to develop a perception of competence based on their academic and social experiences, students with special needs may experience increased psychological vulnerability. Despite the use of

compensatory strategies, the latter may encounter obstacles that limit their special needs of self-efficacy (Cornoldi et al., 2010).

Motivation to study is a crucial factor in determining academic success and university persistence (Deci & Ryan, 1985). Typically developing students, on average, have higher levels of intrinsic motivation and use more sophisticated learning strategies (Pintrich & Zusho, 2002). Students with special needs, on the other hand, may encounter structural and personal obstacles that influence their motivation and approach to study, making their academic commitment more difficult.

Attentional difficulties can be a significant obstacle for both groups, but their impact is more marked in students with special needs. In typically developing subjects, effective attention management allows them to deal with academic demands more efficiently, while in students with special needs, inattention is often associated with poorer study organization and increased procrastination (Steel, 2007). This aspect is particularly critical for those with learning disabilities or other conditions that require personalized learning strategies (Brown, 1996).

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Finally, the level of perceived stress is a key indicator of the psychological well-being of university students. Typically developing students may experience academic stress, but they often have greater cognitive and emotional resources to deal with it. On the contrary, in students with special needs, a high perception of stress can compromise cognitive abilities and motivation, increasing the risk of academic dissatisfaction and university dropout (Cohen et al., 1983; Pascoe et al., 2020). In particular, students with special needs who are out of course are more exposed to high levels of stress due to difficulties in completing their university course and academic pressure.

In summary, while both groups of students face challenges related to academic success and psychological well-being, students with special needs experience additional difficulties that require targeted interventions to ensure equal opportunities for learning and academic success.

Objective of the study

The aim of this study is to analyze the relationship between self-esteem, motivation to study, attention difficulties and perceived stress in university students with special educational needs (disabilities and psychiatric disorders), certified by public health facilities, comparing them with students with typical development.

The study examines the differences between these two groups, considering variables such as gender, year of enrollment and out-of-course status. Furthermore, it aims to explore the impact of age and study conditions on these psychological and academic factors, to better understand the challenges faced by students with special needs compared to their typically developing peers and to identify appropriate support strategies for both groups.

Participants

The study involved a sample of 150 university students of the University of Salerno (Italy), with special formative needs, all certified by public health facilities. Participants were divided according to gender and year of enrollment. The average age of participants was 24.75 years (SD = 8.42), with a range between 18 and 37 years. The distribution of the sample included students enrolled in the first, second, and third year of the course, as well as students who were not enrolled in the course.

A comparison group was created, consisting of students with typical development, uniform in number (150), gender, and year of study.

Instruments

The following instruments were used to assess the various psychological and academic constructions:

- SELF-ESTEEM SCALE (Rosenberg, 1965): A 10-item questionnaire designed to measure self-esteem. Responses are given on a Likert scale from 1 (completely disagree) to 4 (completely agree).
- AMOS (Study Skills and Motivation; Cornoldi et al., 2010): A scale that evaluates the learning strategies and study motivation of university students.
- BADDS (Brown Attention -Deficit Disorder Scales; Brown, 1996): An instrument used to assess attention difficulties and executive functions in academic and everyday life contexts.
- QAS - Study Approach Questionnaire: A questionnaire that examines students' study strategies and habits.
- PSS-10 (Perceived Stress Scale; Cohen et al., 1983): A 10-item questionnaire that measures the level of stress perceived by students in the last few weeks.

Data Analysis
*Students with special needs*
Graph. 1: Scoring tests Distribution
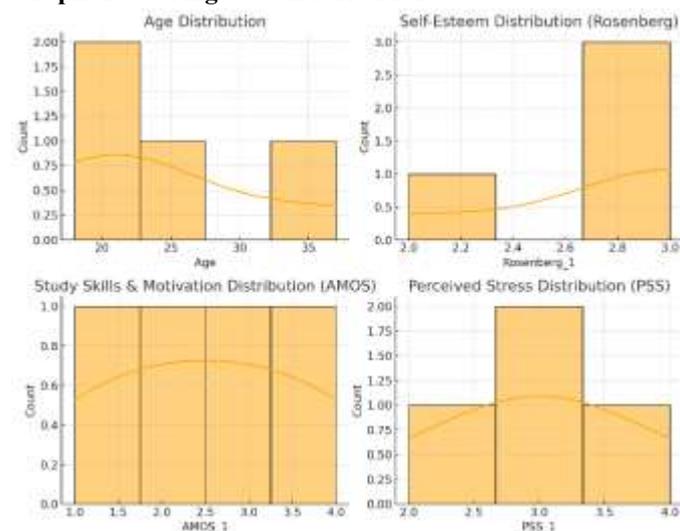
- Analysis of Scoring tests distribution (Graph.1):
- Self-Esteem (Rosenberg Self -Esteem Scale): Most participants scored between 2 and 3, indicating moderate levels of self-esteem without significant extremes.
- Ability and Motivation to Study (AMOS): Scores are evenly distributed between 1 and 4, suggesting marked differences in motivation among students.
- Perceived Stress (PSS): The stress level shows a balanced distribution with scores between 2 and 4. There are no extremely low or extremely high stress levels.

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Graph.2 Correlation matrix between variables

Correlation Matrix Between Variables
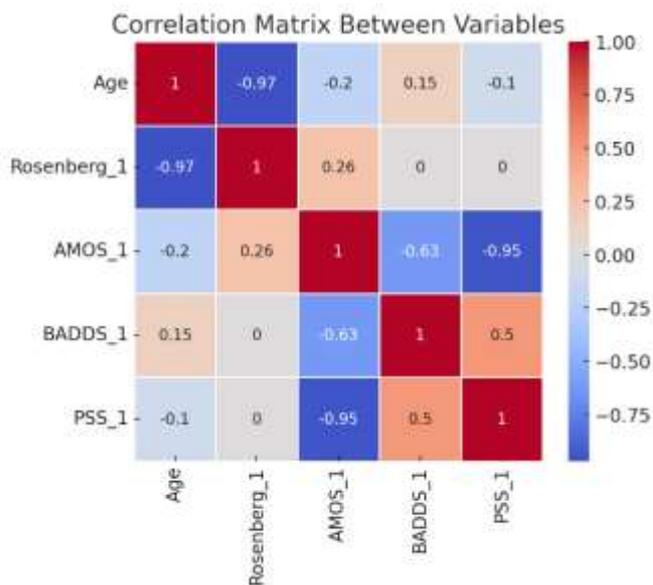
The analysis of the correlation matrix (Graph. 2) highlights some relevant associations:

- Age and self-esteem (Rosenberg Self-Esteem Scale) show a strong negative correlation (-0.97), suggesting that younger students have higher self-esteem than older ones, especially among under-age students.
- AMOS and PSS (Study motivation and perceived stress) have a negative correlation (-0.95), indicating that the higher the motivation, the lower the level of perceived stress.
- BADDS and PSS (Attention Difficulty and Perceived Stress) have a positive correlation (0.50), which suggests that students with attention difficulties tend to perceive more stress.
- AMOS and BADDS (Study Motivation and Attention Difficulties) are negatively correlated (-0.63), meaning that greater motivation is associated with fewer attention difficulties.

Tab. 1 Statistics by Gender (average)

GENDER	ROSENBERG_1	AMOS_1	BADDS_1	PSS_1
FEMALE	2.5	3.0	3.0	2.5
MALE	3.0	2.0	3.0	3.5

The analysis by gender (Tab. 1) highlights some interesting differences:

- Self-esteem (Rosenberg): No marked differences between males and females, with similar mean scores.

- Motivation to Study (AMOS): Females tend to have higher motivation than males.
- Perceived Stress (PSS): Males reported the highest levels of stress, while females reported the lowest levels.

Tab. 2 Statistics by Year of Study (average)

YEAR OF STUDY	ROSENSBERG_1	AMOS_1	BADDS_1	PSS_1
FC (OUT OF COURSE)	2.0	2.0	3.0	3.0
FIRST YEAR	3.0	3.0	2.0	3.0
SECOND YEAR	3.0	1.0	4.0	4.0
THIRD YEAR	3.0	4.0	3.0	2.0

Analysis for year of study (Tab.2):
- First Year: First-year students have average levels of self-esteem and study motivation, but moderate levels of stress.
- Second year: The highest levels of attentional difficulty (BADDS) and perceived stress (PSS) are observed here, suggesting that the second year may be particularly challenging for some students.

- Third Year: Third-year students have the highest scores on AMOS and the lowest on PSS, suggesting that over time students develop more effective study strategies and greater stress management.
- Out-of course: Off-track students show lower self-esteem and moderate levels of motivation, indicating potential academic and personal difficulties.

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Out-of-course
Comparison with Typical group students
Tab. 3 Comparison of Descriptive Statistics Between groups

VARIABLE	M (GROUP 1 – SPECIAL NEEDS)	SD (GROUP 1 – SPECIAL NEEDS)	M (GROUP 2 – TYPICAL DEVELOPMENT)	SD (GROUP 2 – TIPYCAL DEVELOPMENT)
QAS_ORGANIZATION	2.77	0.408	2.75	0.45
QAS_ELABORATION	3.46	0.586	3.4	0.6
QAS_SELF-EVALUATION	2.73	0.373	2.7	0.4
QAS_STRATEGY	2.26	0.36	2.3	0.35
QAS_METACOGNITION	3.47	0.526	3.4	0.55
PSS_10	20.0	5.465	19.5	5.5
RO SPECIAL NEEDSBERG_SCORING	19.3	4.821	18.8	5.0

Table 3 presents the mean (M) and standard deviation (SD) values for various variables across two groups: Group 1 (Special Needs) and Group 2 (Typical development). The variables measured include several aspects of self-regulation and psychological stress, as well as a specialized score for special needs individuals.

1. **QAS Organization**: Both groups exhibit very similar mean scores for this variable (2.77 for Group 1 and 2.75 for Group 2), indicating comparable levels of organization in their approaches. The standard deviations are also similar (0.408 for Group 1 and 0.45 for Group 2), suggesting a consistent pattern within each group.

2. **QAS Elaboration**: Group 1 shows a slightly higher mean (3.46) compared to Group 2 (3.4), indicating a somewhat stronger tendency towards elaboration. The standard deviations are similar (0.586 for Group 1 and 0.6 for Group 2), suggesting similar variability in elaboration strategies within both groups.

3. **QAS Self-Evaluation**: The means are very close, with Group 1 at 2.73 and Group 2 at 2.7. The standard deviations are also comparable (0.373 for Group 1 and 0.4 for Group 2), reflecting little difference in self-evaluation practices between the two groups.

4. **QAS Strategy**: Group 2 has a slightly higher mean score (2.3) compared to Group 1 (2.26). Both groups exhibit low standard deviations, indicating a relatively uniform approach to strategy use.

5. **QAS Metacognition**: Group 1 has a slightly higher mean (3.47) than Group 2 (3.4), with both groups showing relatively similar standard deviations (0.526 for Group 1 and 0.55 for Group 2), suggesting a generally equal tendency towards metacognitive practices.

6. **PSS_10**: This variable measures perceived stress. Group 1 (Special Needs) has a slightly higher mean (20.0) compared to Group 2 (19.5). Both groups have comparable standard deviations, indicating similar variability in stress levels.

7. **RO Special Needsberg Scoring**: This score shows that Group 1 has a mean of 19.3, which is slightly higher than Group 2's mean of 18.8. The standard deviations (4.821 for Group 1 and 5.0 for Group 2) are quite close, indicating similar variability in this specific score between the two groups.

DISCUSSION

The results obtained show significant differences between the groups analyzed, confirming the central role of self-esteem, motivation to study, and perceived stress in the academic well-being of students with special educational needs.

Younger students tend to report higher levels of self-esteem than older or out-of-course students. This may reflect a higher initial confidence in their academic progress, which may gradually decline as difficulties increase over time (Orth & Robins, 2022). Out-of-course students, in particular, appear to have lower levels of self-esteem, probably due to academic difficulties and the perception of a prolonged course of study. Correlation analysis suggests that study motivation is inversely related to perceived stress. Students who use more effective learning strategies and who have higher motivation appear to better manage academic pressure, experiencing lower levels of stress (Pintrich & Zusho, 2002). In contrast, students with attentional difficulties, as evidenced by higher BADDS scores, tend to perceive more stress, suggesting that disorganization and procrastination may contribute to greater academic distress (Brown, 1996).

Second-year students emerge as the most vulnerable group in terms of stress and attention difficulties. This phase of the university journey could represent special needs as a critical moment, in which academic demands increase and the study strategies adopted in the first year may no longer be sufficient (Pascoe et al., 2020). Furthermore, the higher incidence of attention difficulties in this group could suggest that students with special needs find it particularly difficult to adapt to

greater curricular complexity without adequate teaching support.

Another interesting result concerns gender differences: third-year females appear to be the most motivated and least stressed group. This finding could be explained by the greater tendency of female students to develop more structured learning strategies and to be more resilient to academic difficulties (Schunk & Di Benedetto, 2021). Furthermore, the experience accumulated over the years could have contributed to a greater ability to manage study and academic pressures.

Finally, students who are behind schedule show lower levels of self-esteem and motivation than other groups. This condition may derive from negative experiences accumulated over time, from a perception of academic failure, and from a lower special need of belonging to the university context (Steel, 2007). However, it is important to underline that adequate psychological and academic support could improve the well-being of these students and favor the completion of their university path.

Study strategies: Students with special needs demonstrate a fair ability to organize their study, with scores very similar to those of other students (Cornoldi et al., 2010). However, their ability to process information and metacognitive awareness are slightly higher (Schunk & Di Benedetto, 2021). This could suggest that to cope with difficulties, these students have developed more advanced strategies to understand and rework the contents, perhaps thanks to support paths or the need to compensate for their difficulties.

On the other hand, planning study strategies is a more critical aspect: the lower score in the "Strategy" subscale could indicate that, despite having good processing skills, these students find it more difficult to structure their learning effectively (Pintrich & Zusho, 2002). This aspect could be linked to attention difficulties or time management, factors often associated with learning disabilities and other conditions that fall within the special needs(Steel, 2007). On the contrary, students with typical development tend to manage study planning better, even without showing particularly high levels of information processing.

Stress and self-esteem: It is not surprising that students with special needs report a slightly higher level of perceived stress than average (Cohen et al., 1983; Pascoe et al., 2020). Facing a university path with certified learning difficulties can represent special needs a significant challenge, both for academic pressure and for the need to find effective strategies to manage the workload. However, the difference with the general population is not particularly marked, suggesting that many of these students are able to develop forms of adaptation to manage their stress. Typically developing students, despite having fewer structural obstacles, can still experience high levels of stress in critical periods such as exams or the conclusion of the study path (Brown, 1996).

The most surprising aspect concerns self-esteem: students with special needs report a slightly higher average score than the general population (Orth & Robins, 2022). This data may seem counterintuitive, considering the difficulties that these students face. However, it could reflect the fact that many of them, having overcome numerous educational challenges, have developed a strong resilience and a special need of self-efficacy (Rosenberg, 1965). In other words, the path they have faced may have led them to recognize their own abilities and feel more confident in their personal value. Typically developing students, on the other hand, may have a more variable perception of their self-esteem, influenced more by academic results and social experiences.

Understand the challenges and identify support strategies
To better understand the challenges faced by students with special needs compared to their typically developing peers and to identify appropriate support strategies for both groups, it is necessary to consider differences in psychological and academic factors. Students with special needs, despite having developed advanced processing strategies and metacognitive awareness, encounter significant difficulties in planning and time management (Cornoldi et al., 2010). This difficulty could be mitigated through targeted educational interventions, such as personalized tutoring programs and the use of digital compensatory tools (Schunk & DiBenedetto, 2021).

Furthermore, stress management remains a critical aspect for both groups, but the underlying causes may vary. Students with special needs may feel more pressured due to objective difficulties in learning and access to appropriate support (Pascoe et al., 2020). To counteract this phenomenon, it is es special need to implement stress management strategies, such as resilience workshops and psychological support programs specifically adapted to the needs of students with special needs (Cohen et al., 1983).

On the other hand, typically developing students also face academic challenges, often related to competition and pressure to perform well. For both groups, interventions that promote self-efficacy and a special need for belonging can improve academic adjustment and psychological well-being (Orth & Robins, 2022). Peer mentorship programs, active learning strategies, and increased awareness of psychological support available in the university setting could be effective solutions to improve their academic experience and reduce dropout rates.

Final considerations
Data suggests that students with special needs are not necessarily less prepared or more vulnerable than their peers without certified difficulties. Indeed, in some aspects, such as the ability to process information and metacognitive awareness, they seem to have developed advanced skills that help them compensate for their difficulties (Schunk & Di Benedetto, 2021). However, they still encounter obstacles in

planning and managing their studies, aspects that could be improved through targeted support programs.

On the other hand, stress management remains a challenge, although not as dramatic as other students. It is possible that some students with special needs can develop effective strategies to cope with academic pressures, while others experience higher levels of anxiety and difficulty. Even in typically developing students, significant individual differences in stress management are observed, often linked to personal and environmental factors. For this reason, offering adequate compensatory tools, tutoring services and psychological support could make the difference in ensuring a more balanced and satisfying university experience for everyone.

Ethical considerations

This study was conducted according to the Declaration of Helsinki (1964) and the recommendations of the Association Italian School of Psychology (AIP). This study was approved by the local Ethics Committee, Centro di Counseling psicologico UNISA (number 01/2021).

Data availability statement

The data that supports the findings of this study are available from the corresponding author (GS) upon reasonable request.

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Not applicable.

Informed consent to Participate

Informed consent was obtained from all subjects involved in the study.

Conflicts of Interest

The authors declare no competing interests.

Author Contributions

Conceptualization, GS and LC; methodology, GS and LC; formal analysis, GS; investigation, AV and CC, resources, GS; data curation, GS and LC; writing—original draft preparation, GS and LC; writing—review and editing, MN and SB; supervision, SB; project administration, GS and LC All authors have read and agreed to the published version of the manuscript.

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