

Counselling as a Support System for Engineering Students: Addressing Academic, Personal, and Career Challenges

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Abstract

Engineering education is often associated with demanding academic schedules, performance pressure, career uncertainty, interpersonal concerns, and challenges related to personal and emotional well-being. These factors can significantly influence students' academic performance, motivation, confidence, and overall development. In this context, counselling can serve as an important support system by providing students with appropriate guidance, emotional support, and strategies for managing academic, personal, and career-related challenges. The present study explores the role and importance of counselling among engineering students and examines students' awareness, utilization, and perceptions of counselling services available in their institution. The study focuses on major concerns such as academic stress, examination pressure, time management, career planning, interpersonal relationships, and adjustment to the engineering education environment. A structured questionnaire may be used to collect responses from engineering students, and the data can be analysed to identify common challenges and assess the perceived effectiveness of counselling services. The study is expected to highlight the contribution of counselling in improving students' coping abilities, academic engagement, decision-making skills, confidence, and overall well-being. The findings may also provide useful insights for educational institutions to strengthen counselling mechanisms and develop a more supportive and student-centred learning environment. Thus, counselling can play a significant role not only in addressing students' immediate concerns but also in promoting their holistic development and successful transition towards professional careers.

Keywords: Counselling, Engineering Students, Academic Challenges, Personal Well-Being, Career Development, Student Support, Academic Stress

1. Introduction

Engineering education is widely recognized as a demanding academic environment in which students are required to cope with intensive coursework, continuous assessments, laboratory work, projects, examinations, and expectations regarding future employment. Along with academic demands, students may experience personal, social, emotional, and career-related concerns during their transition to higher education. University life is also an important developmental period during which students are expected to become more independent, establish interpersonal relationships, make academic decisions, and plan their future careers. These multiple demands may increase students' vulnerability to stress, anxiety, emotional difficulties, and other mental health concerns (Huang et al., 2018; Dessauvage et al., 2022).

The mental health and well-being of university students have become important concerns across different countries. A systematic review of university students in Southeast Asia reported considerable mental health challenges among students and highlighted the limited availability of mental health resources and counselling services in several settings (Dessauvage et al., 2022). Such concerns can adversely influence students' academic engagement, motivation, concentration, interpersonal relationships, and overall educational experience. Therefore, higher education institutions need to recognize students' psychological and personal needs alongside their academic requirements.

Engineering students may face additional challenges because of the nature of their academic programmes. Heavy academic workloads, difficult technical subjects, laboratory and project requirements, examination pressure, time-management difficulties, competition for placements, and uncertainty regarding future career opportunities may contribute to students' academic and emotional stress. University and college students are exposed to several stressors and transitional events, making this period particularly important for interventions aimed at preventing and managing common mental health problems (Huang et al., 2018). In this context, counselling can provide students with an appropriate platform to discuss their concerns and seek professional guidance.

Counselling services can play an important role in helping students understand and manage academic, personal, emotional, and career-related difficulties. University counselling services are involved not only in the assessment and management of psychological problems but also in preventive and supportive interventions designed to help students cope with challenges and improve their well-being (Cerolini et al., 2023). A systematic review of psychological counselling services among university students worldwide emphasized the role of university counselling in addressing students' psychological needs and supporting their overall adjustment to university life (Cerolini et al., 2023).

The effectiveness of counselling and related psychological interventions has also been supported by research evidence. Huang et al. (2018), through a systematic review and meta-analysis of randomized controlled trials, reported beneficial effects of interventions targeting common mental health problems among university and college students. Similarly, Worsley et al. (2022) reviewed evidence on interventions for improving the mental health and well-being of university and college students and reported evidence supporting approaches such as cognitive-behavioural and mindfulness-based interventions. These findings indicate that structured psychological and counselling interventions can contribute to the management of common mental health difficulties among students.

Counselling should not be considered only as a remedial service for students experiencing severe problems. It can also function as a preventive and developmental support mechanism. Through counselling, students can develop self-awareness, emotional regulation, problem-solving skills, coping strategies, communication skills, and decision-making abilities. Such support can help students respond more effectively to academic pressures and personal difficulties while developing the confidence required for their future professional lives. Worsley et al. (2022) emphasized the potential value of interventions aimed at improving mental health and well-being within higher education settings, while Cerolini et al. (2023) highlighted the broader role of university counselling services in preventing and addressing psychological problems.

Career-related counselling represents another important dimension of student support, particularly in professional programmes such as engineering. Engineering students may face uncertainty regarding specialization, higher education, internships, placements, competitive examinations, and career pathways. Appropriate career guidance can help students identify their interests, strengths, abilities, and professional aspirations and make informed career decisions. Thus, counselling can support not only students' immediate academic and personal concerns but also their long-term educational and professional development (Cerolini et al., 2023).

Despite the availability of counselling services in many educational institutions, students may not always seek professional support when they experience difficulties. Lack of awareness, concerns regarding confidentiality, stigma associated with seeking psychological help, reluctance to disclose personal problems, and the perception that counselling is meant only for students with serious psychological problems may influence help-seeking behaviour. Dessauvagie et al. (2022) also highlighted limitations in the availability and establishment of counselling and mental health services in several university settings in Southeast Asia. These factors indicate the need for institutions to promote awareness and accessibility of counselling services and to create an environment in which seeking guidance is considered a normal part of student development.

In engineering education, therefore, counselling can be viewed as a comprehensive support system that addresses multiple dimensions of student development. Academic counselling can assist students in managing study-related difficulties and academic pressure; personal counselling can help them deal with emotional, interpersonal, and

adjustment-related concerns; and career counselling can facilitate informed decisions regarding higher education and professional opportunities. A coordinated counselling system may consequently contribute to students' academic engagement, personal well-being, confidence, and career readiness (Huang et al., 2018; Worsley et al., 2022; Cerolini et al., 2023).

In this context, the present study entitled "Counselling as a Support System for Engineering Students: Addressing Academic, Personal, and Career Challenges" aims to examine the role and importance of counselling among engineering students. The study focuses on students' awareness and perceptions of counselling services and the major academic, personal, and career-related challenges for which counselling support may be required. The findings are expected to provide useful insights for educational institutions in strengthening counselling mechanisms and developing a supportive, inclusive, and student-centred learning environment.

2. Review of Literature

Engineering students experience a range of academic and personal pressures that may influence their mental health and educational experience. Asghar et al. (2024), in a systematic literature review of undergraduate engineering students, reported that stress was the most commonly identified mental-health concern, followed by anxiety, depression, and other psychological difficulties. The review also identified heavy academic workloads, sleep-related difficulties, and aspects of engineering education culture as factors that can negatively affect students' mental health and well-being. These findings indicate the importance of providing structured support systems within engineering institutions.

University students may also experience common mental health problems that affect their academic and social functioning. Huang et al. (2018), through a systematic review and meta-analysis of randomized controlled trials, reported that interventions targeting common mental health problems among university and college students can produce beneficial outcomes. Their findings support the need for institutions to provide accessible interventions and support mechanisms to help students manage psychological difficulties during higher education.

Counselling represents one such institutional support mechanism. Cerolini et al. (2023), in a systematic review of psychological counselling among university students worldwide, highlighted the role of counselling services in addressing students' psychological needs and supporting their adjustment to university life. Counselling may provide students with opportunities to discuss academic difficulties, emotional concerns, interpersonal problems, and other challenges in a confidential and supportive environment.

The effectiveness of student-support interventions has also been examined across different approaches. Worsley et al. (2022) reviewed evidence from systematic reviews concerning interventions designed to support the mental health and well-being of university and college students. Their findings indicated potential benefits from psychological, mindfulness-based, psychoeducational, and stress-management interventions. Such approaches may be incorporated into broader institutional counselling and student-support programmes.

An important issue is that the availability of counselling services does not necessarily ensure that students will use them. Zhao et al. (2025), in a systematic review and meta-analysis involving 62 studies, found a substantial gap between students experiencing mental-health difficulties and those who actively seek professional help. Common barriers included preference for dealing with problems independently, lack of time, inadequate knowledge of available services, perceived lack of need, privacy concerns, cost, and stigma. These findings emphasize that institutions should not only provide counselling services but also increase students' awareness and confidence in accessing them.

The literature therefore indicates that counselling can be viewed as more than a crisis-response service. It can function as a preventive, developmental, and supportive mechanism addressing students' academic, personal, emotional, and career-related needs. However, the specific perceptions and counselling requirements of engineering students require further investigation, particularly within individual institutional contexts. The present study therefore focuses on counselling as a comprehensive support system for engineering students and examines its perceived importance in addressing academic, personal, and career challenges.

3. Objectives of the Study

Based on the identified need for comprehensive student support, the present study aims to:

1. To assess the awareness of counselling services among engineering students.
2. To identify the major academic challenges experienced by engineering students for which counselling support may be required.
3. To identify personal and emotional challenges perceived by engineering students.
4. To examine students' career-related concerns and their need for career counselling.
5. To assess students' perceptions regarding the usefulness and effectiveness of counselling services.
6. To identify factors that may encourage or discourage students from seeking counselling support.
7. To suggest measures for strengthening counselling services as a comprehensive support system in engineering education.

4. Research Methodology

4.1 Research Design

A **descriptive cross-sectional survey design** can be adopted for the present study. This design is appropriate for assessing engineering students' perceptions, awareness, experiences, and attitudes regarding counselling services at a particular point in time.

4.2 Study Population

The study population may consist of undergraduate engineering students from different years of study. Students from different engineering disciplines can be included to obtain a broader understanding of academic, personal, and career-related counselling needs.

4.3 Sampling Method

A convenience sampling method or stratified sampling method may be used depending on the accessibility of students. If students from all four years and multiple engineering branches are available, stratified sampling would provide better representation.

4.4 Data Collection Tool

A structured questionnaire can be developed based on the objectives of the study and findings reported in previous literature. The questionnaire may contain four major sections:

- **Section A:** Demographic information
- **Section B:** Academic challenges
- **Section C:** Personal and emotional challenges
- **Section D:** Career-related concerns and counselling
- **Section E:** Awareness, utilization, and perception of counselling services

A 5-point Likert scale can be used for perception-based questions:

1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree

The inclusion of questions concerning awareness, barriers, and help-seeking is particularly relevant because recent evidence indicates that students may not seek professional help even when counselling services are available (Zhao et al., 2025).

4.5 Data Analysis

The collected data can be analysed using descriptive statistical techniques such as:

- Frequency
- Percentage
- Mean
- Standard deviation

Where appropriate, inferential tests such as the Chi-square test, t-test, or ANOVA may be used to determine whether counselling perceptions differ according to year of study, gender, engineering discipline, or previous exposure to counselling.

5. Research Questions

Based on the objectives and the reviewed literature, the following research questions may be considered:

1. What are the major academic challenges experienced by engineering students?
2. What personal and emotional concerns are commonly experienced by engineering students?
3. What career-related concerns do engineering students face during their undergraduate education?
4. Are engineering students adequately aware of the counselling services available in their institution?
5. To what extent do students perceive counselling as useful in managing academic, personal, and career-related challenges?
6. What factors encourage or discourage engineering students from seeking counselling support?

6. Hypotheses of the Study

If you are planning to conduct a quantitative survey, including hypotheses will make the paper more research-oriented.

Null Hypotheses

H₀₁: There is no significant association between students' year of study and their awareness of counselling services.

H₀₂: There is no significant association between students' academic challenges and their perceived need for counselling.

H₀₃: There is no significant association between students' personal/emotional challenges and their perceived need for counselling.

H₀₄: There is no significant association between students' career-related concerns and their perceived need for career counselling.

H₀₅: There is no significant difference in the perception of counselling services among students from different years of study. (Asghar et al., 2024; Barnett et al., 2024; Lui et al., 2024).

7. Research Methodology

7.1 Research Design

The present study may adopt a descriptive cross-sectional survey design to examine engineering students' academic, personal, and career-related challenges and their perceptions regarding counselling services. A cross-sectional survey is appropriate for obtaining information about students' experiences and perceptions at a particular point in time.

The use of survey-based approaches is well established in research examining student mental health, well-being, counselling needs, and help-seeking behaviour (Asghar et al., 2024; Lui et al., 2024).

7.2 Study Population

The study may include undergraduate engineering students enrolled in different years and branches of engineering. Including students from different academic years would enable comparison of counselling needs across different stages of engineering education.

Engineering students may experience specific pressures associated with academic workload, engineering culture, and professional expectations. Asghar et al. (2024) identified heavy academic workloads, sleep difficulties, stress, anxiety, and other mental-health concerns among undergraduate engineering students.

7.3 Sample Size and Sampling Technique

A suitable sample of undergraduate engineering students may be selected using convenience sampling. However, if students from different branches and years are available in adequate numbers, stratified sampling may be preferred to obtain better representation.

For a college-level study, a sample of approximately 150–300 students would provide a reasonable dataset for descriptive and comparative analysis. The final sample size should preferably be determined using an appropriate sample-size calculation based on the total student population.

8. Questionnaire Development

A structured questionnaire can be developed based on the objectives of the study and the themes identified in previous literature. The questionnaire should preferably contain 25–30 questions divided into the following sections:

Section A – Demographic Information

- Age
- Gender
- Year of study
- Engineering branch
- Previous exposure to counselling

Section B – Academic Challenges

Questions may assess:

1. Difficulty in managing academic workload.
2. Examination-related stress.
3. Difficulty in managing time.
4. Difficulty in understanding certain subjects.
5. Pressure related to academic performance.
6. Difficulty in balancing academics and extracurricular activities.

Academic workload and the nature of engineering education have been identified as important factors associated with stress and reduced well-being among engineering students (Asghar et al., 2024).

Section C – Personal and Emotional Challenges

Questions may assess:

1. Difficulty coping with stress.
2. Anxiety regarding academic or personal issues.
3. Lack of confidence.
4. Difficulty maintaining interpersonal relationships.
5. Feelings of loneliness or isolation.
6. Difficulty adjusting to college life.
7. Problems related to maintaining work–life balance.

University students can experience multiple psychological and social challenges during higher education, making accessible support and intervention mechanisms important (Auerbach et al., 2016; Pedrelli et al., 2015).

Section D – Career-Related Challenges

Questions may assess:

1. Uncertainty regarding career choice.
2. Lack of information about career opportunities.
3. Difficulty selecting a specialization.
4. Uncertainty regarding higher education.
5. Placement and employment concerns.
6. Difficulty identifying personal strengths and interests.
7. Need for guidance regarding competitive examinations and postgraduate education.

Career decision-making can remain uncertain even among senior engineering students. Lichtenstein et al. (2009) reported that some undergraduate engineering students remained undecided about their career plans and that career decisions were sometimes made without adequate guidance from engineering faculty.

Section E – Awareness and Utilization of Counselling

Questions may include:

1. Are you aware of counselling services available in your institution?
2. Do you know how to access the counselling service?
3. Have you ever approached a counsellor?
4. Would you approach a counsellor if you faced an academic problem?
5. Would you approach a counsellor for a personal problem?
6. Would you seek career counselling when uncertain about your career?
7. Do you believe counselling services are confidential?

Awareness and accessibility are particularly important because lack of knowledge about available services and concerns about confidentiality can influence students' help-seeking behaviour (Lui et al., 2024).

Section F – Perceived Effectiveness of Counselling

Students may be asked to rate statements such as:

- Counselling can help students manage academic stress.
- Counselling can improve students' confidence.

- Counselling can help students manage personal problems.
- Counselling can improve decision-making skills.
- Career counselling can help students make informed career choices.
- Counselling can improve overall student well-being.
- Every engineering institution should provide easily accessible counselling services.

A recent systematic review found evidence that psychological counselling can improve psychological functioning among higher-education students and that improvements in psychological functioning may be associated with improvements in academic performance (2025 systematic review).

10. Ethical Considerations

Since the study involves students and may include questions concerning personal and emotional difficulties, appropriate ethical safeguards should be followed. Participation should be voluntary, and students should have the option to withdraw from the study. No personally identifiable information should be unnecessarily collected. Responses should be kept confidential and used exclusively for research purposes.

Particular care should be taken when questions address sensitive psychological or personal experiences. The questionnaire should avoid unnecessarily intrusive questions and should provide appropriate information about available institutional support where necessary. Ethical and confidential approaches are particularly important because privacy concerns and stigma can influence students' willingness to seek mental-health support (Lui et al., 2024).

11. Results and Discussion Framework

The results can be presented under four major themes:

11.1 Academic Challenges

The analysis is expected to identify the most frequently experienced academic challenges among engineering students. Particular attention may be given to examination pressure, workload, time management, difficulty in technical subjects, and performance expectations. Previous research indicates that academic workload is an important contributor to stress among engineering students (Asghar et al., 2024).

11.2 Personal and Emotional Challenges

The findings may reveal the extent to which students experience stress, anxiety, lack of confidence, interpersonal difficulties, adjustment problems, or other personal concerns. Such findings can be discussed in relation to the broader literature on university student mental health.

11.3 Career Challenges

Career uncertainty, placement pressure, uncertainty regarding higher studies, and lack of information about career opportunities can be examined. This dimension is particularly important for engineering students because career decisions may involve choices concerning specialization, industry, higher education, entrepreneurship, or careers outside engineering. Earlier research found that some engineering students remained uncertain about their career plans even during later stages of their undergraduate education (Lichtenstein et al., 2009).

11.4 Awareness and Perception of Counselling

The study can finally examine whether students are aware of counselling services, whether they have used them, what prevents them from using them, and whether they perceive counselling as useful. This section can be compared with research showing that barriers to professional help-seeking remain common among university students (Lui et al., 2024).

12. Conclusion

Counselling can serve as an important component of student support in engineering education by addressing the interconnected academic, personal, emotional, and career-related challenges experienced by students. The literature indicates that engineering students are exposed to considerable academic and psychological pressures, while help-seeking may be influenced by awareness, accessibility, stigma, confidentiality concerns, and other barriers (Asghar et al., 2024; Lui et al., 2024). Evidence regarding psychological counselling in higher education further suggests potential benefits for students' psychological functioning and academic outcomes.

Therefore, counselling services should be developed as an integrated and accessible student-support mechanism rather than merely a remedial service. Engineering institutions should promote awareness of counselling facilities, ensure confidentiality, provide academic and career guidance, and encourage students to seek support at an early stage. A comprehensive counselling system can contribute to students' well-being, academic engagement, decision-making abilities, career preparedness, and overall holistic development.

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