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Early Intervention for Positive Communication in the Medical School Environment: From the Perspective of Students at Cyprus International University

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Abstract

Medical training imposes substantial academic and emotional demands on students, frequently resulting in adverse mental health outcomes. Despite this, support in many medical schools is typically provided only after students encounter significant difficulties, rather than as a preventive measure. Previous research indicates that a considerable proportion of medical students experience depression, suicidal ideation, and burnout during their training, yet only a minority seek psychiatric or psychological care. Barriers to seeking help are often linked to stigma, worries about confidentiality, and fear that using support services could affect students' academic progress or future careers. This study aims to develop and test a multicomponent early-intervention framework to support medical students' well-being and encourage them to seek help earlier when needed. This paper reports the first phase of a planned longitudinal project. At this stage, a cross-sectional baseline design was used with students from the Faculty of Medicine at Cyprus International University. Students' psychological and educational experiences were assessed using validated tools, including the WHO-5 Well-Being Index, GAD-7, and selected constructs from SEEQ, DREEM, and WLEIS. The findings from 96 participants showed that students reported a moderate learning experience (M = 3.36), alongside elevated academic stress (M = 3.43), high burnout (M = 3.43), and low overall well-being (M = 2.84). Students with higher academic stress tended to report lower well-being (r = -0.52). In contrast, emotional intelligence was positively related to well-being (r = 0.30), suggesting that students with stronger emotional awareness and coping skills may manage the demands of medical training more effectively. Students' written responses added further meaning to these results, highlighting the need for lighter workloads, more interactive teaching, and anonymous peer-support options. Overall, these baseline findings underscore the need for a more proactive, central approach to mental health support in medical education. Support should be available before students reach a crisis point, so that barriers to care can be reduced and students can access help earlier. The proposed model may offer a practical starting point for developing future support systems in medical schools.

1. Background

Medical education is often described as demanding, but for students, this demand is not only academic. It also involves long hours of study, repeated examinations, clinical expectations, and the pressure to perform well over several years. These pressures can gradually affect students' mental health and may contribute to psychological difficulties during training [1, 2]. Although medical schools give necessary attention to academic achievement and clinical competence, the emotional strain that students carry is sometimes less visible. In this context, stress, exhaustion, and emotional distress may be treated as ordinary parts of medical school, even when they may indicate that earlier support is needed [3]. Previous research has shown that many medical students experience depressive symptoms during their education, and some also report suicidal thoughts. Burnout adds to this concern, particularly when students feel emotionally exhausted, detached from their studies, or unable to remain fully engaged in their academic work [4].

Even when students experience these difficulties, many do not seek formal psychological or psychiatric support. The reasons are often practical and personal, including stigma, concerns about confidentiality, lack of time, and fear that asking for help could affect academic progress or future career opportunities [5, 6, 7]. Some students may also worry about whether their information will remain private or be recorded in academic files. These concerns can delay help-seeking until the problem becomes more serious. As a result, support systems in medical schools may become involved only when students are already experiencing major academic or psychological difficulty (Givens et al., 2002; Schwenk et al., 2010)[5, 6].

Although awareness of these challenges is increasing, institutional responses in medical education remain predominantly reactive. Most current support models intervene only after students experience significant distress, typically through referrals to counseling services or psychiatric care following academic failure or observable psychological breakdown [8, 9]. While such services are valuable, they are inadequate as a primary strategy. Students who avoid seeking help due to stigma are less likely to utilize crisis-level services than early-stage interventions. Consequently, reactive systems tend to reach only those students whose distress has already become severe and apparent [10,7].In addition, the evidence base for proactive and preventive frameworks in medical education is limited. Most research on student well-being and mental health has been conducted in high-income, Western, or large public university contexts, with a primary focus on measuring the prevalence of distress rather than evaluating structured institutional responses [1, 11]. Private international medical schools, characterized by diverse student populations across cultural backgrounds, languages, and prior educational experiences, remain underexplored. In these settings, the relationships among pedagogical quality, emotional intelligence, and psychological strain may differ from those observed in existing models. Therefore, institution-based research is needed to move beyond prevalence reporting and to examine the design, testing, and refinement of early, structured, and tiered support frameworks within specific medical school environments. This study addresses a critical gap by developing and evaluating a multicomponent early intervention framework to support medical students with varying levels of need before their distress worsens. It is situated within the Faculty of Medicine at Cyprus International University and uses validated psychological and educational measures to generate context-specific baseline evidence. This evidence will inform institutional policy and contribute to international literature on proactive student support in medical education. The first phase of this longitudinal project has three specific objectives: (1) establishing a cross-sectional baseline of medical students' well-being, stress, burnout, anxiety, learning experiences, and emotional intelligence; (2) examining the relationships among these constructs to identify students at early risk; and (3) utilizing these baseline findings to develop a tiered early intervention framework for evaluation in future phases. The project's ultimate goal is to create a proactive, accessible, and tiered support system for medical students, addressing their specific pressures and needs.

2. Methodology

2.1. Study Design and Participant Stratification

This study presents the first completed phase of a planned longitudinal project. At this stage, a cross-sectional design was used to create a baseline picture of students' well-being and to understand the immediate support needs within the institution. The study included 96 undergraduate medical students from the Faculty of Medicine at Cyprus International University.This baseline assessment collected both quantitative data from psychological and educational measures and qualitative feedback from students at different stages of training, including both preclinical and clinical years. Although the wider project is planned to follow students over time in future phases, the findings presented here offer an initial snapshot of the current psychological and educational situation within the faculty [6].

2.2. Foundational Framework of the Tiered Support Model

The early-intervention support framework is being developed based on a three-level care model. The main idea is that students should receive the right level of support based on their needs, rather than offering the same response to everyone [8].

Tier 1

Universal prevention. This level applies to all medical students at Cyprus International University. It would include digital screening, activities to reduce stigma, and basic sessions on topics such as sleep, stress awareness, and mental health literacy.

Tier 2: Selective support: This level is for students who are beginning to show signs of stress or difficulty coping. Support at this stage may include small-group sessions on resilience and time management, as well as peer-led discussions where students can reflect on their experiences. These sessions would use practical strategies from cognitive-behavioral and mindfulness-based approaches to help students manage pressure more effectively.

Tier 3: Indicated support: This level is for students who appear to be at higher risk during screening. In these cases, students would be connected quickly and confidentially with independent counseling or psychiatric professionals outside the faculty's academic evaluation system.

2.3. Measurement Instruments and Statistical Analysis:

For this cross-sectional phase, the study used validated psychological and educational measures. Student well-being, anxiety, and burnout were assessed using the WHO-5 Well-Being Index [17], the Generalized Anxiety Disorder-7 scale (GAD-7) [18], and the Maslach Burnout Inventory–Student Survey (MBI-SS) [19]. Educational experience, perceptions of the learning environment, and emotional intelligence were measured using items from the Students' Evaluation of Educational Quality (SEEQ) [20], the Dundee Ready Educational Environment Measure (DREEM) [21], and the Wong and Law Emotional Intelligence Scale (WLEIS) [22], together with additional context-specific questions.

The quantitative data from the 96 valid responses were analyzed using descriptive statistics and inferential tests, including t-tests, Mann–Whitney U tests, Chi-square tests, multivariable regression, and Pearson correlation analysis. Responses to the open-ended questions were analyzed thematically to identify key issues raised by students and to guide the development of future intervention components in the longitudinal phase of the project.

3. Results

3.1. Demographic and Descriptive Analysis:

The baseline sample included 96 valid responses from medical students at Cyprus International University. Most participants were female, with 60 female students and 35 male students. Students from different years of study were represented, including Year 3 (n = 29), Year 4 (n = 28), Year 1 (n = 21), and Year 2 (n = 18).

The descriptive results showed that students rated their learning experience at a moderate level (M = 3.36, SD = 0.81). However, the psychological results suggest that many students were experiencing strain. Academic Stress (M = 3.43, SD = 0.84) and Burnout (M = 3.43, SD = 0.61) were both high, while student Well-Being had the lowest mean score among all measured areas (M = 2.84, SD = 1.00). This pattern indicated that, despite a moderately acceptable perception of the learning experience, a substantial proportion of students reported elevated psychological strain alongside reduced well-being.

3.2. Gender differences

Independent-samples t-tests indicated that female students reported significantly higher academic stress than male students ($p < .05$). Female students also reported significantly lower perceptions of the learning environment than male students ($p < .05$). No statistically significant gender differences were observed for emotional intelligence, anxiety, burnout, well-being, or teaching effectiveness ($p > .05$).

3.3. Differences across years of study

One-way ANOVA showed no statistically significant differences between students from different years of study for well-being, emotional intelligence, burnout, anxiety, or academic stress (all $p > .05$), suggesting that psychological well-being was relatively consistent across academic years.

3.4. Correlation analysis

Pearson correlation analysis was used to examine the associations among students' learning experience, emotional skills, stress, anxiety, burnout, and well-being. Learning experience was positively associated with well-being ($r = .47$, $p < .001$) and emotional intelligence ($r = .40$, $p < .001$), and negatively associated with academic stress ($r = -.30$, $p < .05$) and anxiety ($r = -.21$, $p < .05$). This means that students who reported a more positive learning experience also tended to report better well-being and lower psychological strain.

Academic stress was strongly positively correlated with anxiety ($r = .77$, $p < .001$). Higher academic stress was also associated with greater burnout ($r = .30$, $p < .05$), whereas well-being was negatively associated with academic stress ($r = -.52$, $p < .001$) and anxiety ($r = -.47$, $p < .001$). Emotional intelligence showed a positive association with well-being ($r = .30$, $p < .05$) and a negative association with anxiety ($r = -.19$, $p < .05$), suggesting a modest protective relationship between students' emotional regulation capacity and their experience of psychological distress.

3.5. Qualitative themes

Analysis of open-ended responses identified four recurring themes that helped to explain and contextualise the quantitative findings:

- Workload reduction: Students frequently asked for a more manageable academic workload and a more carefully distributed examination schedule, with many pointing to ongoing exhaustion as a key concern.
- More active teaching methods: Many students expressed a preference for interactive and clinically relevant teaching over predominantly lecture-based delivery.
- Need for stronger institutional support: Students identified a shortage of accessible psychological and emotional support within the faculty and called for clearer and more visible support pathways.
- Peer support and supportive spaces: Students recommended the development of formal peer-support groups, designated relaxation spaces within the faculty, and regular mental health awareness activities.

4. Discussion

This study set out to examine the psychological and educational experiences of undergraduate medical students at Cyprus International University and to use those findings as a foundation for developing an early-intervention support framework. The aim was not only to describe the levels of stress, burnout, anxiety, well-being, and emotional intelligence observed in this group, but also to understand how these experiences relate to each other and to the quality of the learning environment. The following discussion considers what the findings suggest in each area and what they mean for how the faculty might better support its students.

4.1 Burnout and its context at Cyprus International University

Burnout was one of the most prominent findings in this study. It recorded one of the highest mean scores across all measured constructs ($M = 3.66$, $SD = 1.16$), and it was closely linked to lower well-being, higher stress, and higher anxiety. This finding is consistent with international research showing that burnout is a widespread concern among medical students[1, 7, 11]. However, it is worth considering what may make burnout particularly common in this specific setting.

Cyprus International University (CIU) is a private international institution where many students study in a second or third language and live away from their families and home countries. These conditions, language demands, cultural adjustment, and reduced social support can add to the pressures that medical training already places on students. When these factors come together over time, they may contribute to the kind of emotional exhaustion that defines burnout. The qualitative responses in this study reflect this. Students did not only ask for lighter workloads; they also called for peer-support networks, anonymous help-seeking options, and spaces where they could connect with others. This suggests that for many students, the social and personal dimensions of their situation were just as difficult to manage as the academic ones. Female students in this study reported higher burnout scores (M = 3.83) compared to male students (M = 3.43), a difference that has also been observed in similar studies [1]. This gender difference may reflect different coping strategies, different levels of social support, or differences in how students internalise academic expectations, and it deserves further attention in the next phases of this project.

4.2 Learning environment, teaching quality, and well-being

Students in this study rated teaching effectiveness at a moderate to positive level (M = 3.46, SD = 0.89), which is an encouraging finding. It suggests that students generally felt that the quality of instruction they received was acceptable. Students also gave the larger learning environment a slightly lower rating (M = 3.23, SD = 0.83), which points to areas of the educational experience that go beyond classroom teaching, such as available resources, the general atmosphere of the faculty, and how safe and supported students feel in their academic setting.

The positive relationship between learning experience and well-being ($r = .47$, $p < .001$) and the negative relationship between learning experience and academic stress ($r = -.30$, $p < .05$) suggest that how students experience their educational environment is closely connected to their mental health. In other words, students who reported a better learning experience also tended to report better well-being and lower stress. This finding is consistent with [14], who showed that improvements to the learning environment can have a meaningful positive effect on medical students' well-being. It also suggests that even practical changes to the educational setting, such as improving access to study spaces or making the faculty environment feel more supportive, could benefit students' psychological health.

4.3 Emotional intelligence as a resource, but not a complete solution

Emotional intelligence was the highest-scoring construct in this study (M = 3.80, SD = 0.68), with a relatively small spread of scores across the group. This suggests that most students reported similar and reasonably strong levels of emotional awareness, self-regulation, and empathy. Students who choose to study medicine may already tend to have stronger interpersonal skills, but medical training itself also places students in situations that require emotional sensitivity and self-control, which may reinforce these abilities over time.

The relationship between emotional intelligence and well-being was positive ($r = .30$, $p < .05$), and its relationship with anxiety was slightly negative ($r = -.19$, $p < .05$). This suggests that emotional intelligence may offer some protection against distress. However, the moderate size of these associations means that emotional intelligence alone is not enough to protect students from the pressures of medical training. Even students with stronger emotional regulation skills reported elevated stress and burnout in this sample. This supports the view that individual psychological resources need to be accompanied by structural support at the institutional level. Embedding emotional intelligence development, resilience training, and stress management activities into the curriculum may help, as Bin-Abdulrahman et al. (2025) found that structured stress management programs produced measurable improvements in students' well-being [15].

4.4 The combined burden of stress and anxiety

Academic stress and anxiety were both above the midpoint of the scale in this study, with stress scoring $M = 3.39$ ($SD = 0.87$) and anxiety scoring $M = 3.28$ ($SD = 0.91$). The strongest association found across all constructs was between academic stress and anxiety ($r = .77$, $p < .001$), meaning that students who reported higher stress were also very likely to report higher anxiety. At the same time, well-being recorded the lowest mean score in this study ($M = 2.84$), and it was negatively associated with both stress ($r = -.52$, $p < .001$) and anxiety ($r = -.47$, $p < .001$). Together, these findings suggest that many students were carrying a compounded psychological burden where stress and anxiety reinforced each other and both contributed to lower overall well-being.

This pattern is consistent with what Dyrbye and Shanafelt (2016) described as the multi-domain nature of medical student distress, where difficulties tend not to arise from a single cause but from the interaction of academic pressure, emotional strain, and the conditions of the learning environment [13]. From a practical standpoint, this means that screening tools and support systems need to look across multiple areas at the same time, rather than focusing on any single symptom. A student experiencing moderate academic stress who does not yet meet the threshold for clinical anxiety may still be at real risk of further deterioration if early support is not made available [9, 16] .

4.5 Barriers to help-seeking and the need for proactive support

One of the clearest messages that emerged from students' qualitative responses was the importance of accessible, anonymous, and confidential support. Students asked for peer mentoring, non-judgmental spaces, and referral pathways that are clearly separated from academic assessment. This reflects a well-documented pattern in the literature: many medical students avoid seeking help not because they do not need it, but because they worry about the consequences of doing so, including stigma, loss of confidentiality, and potential effects on their academic or professional standing [7,10,6] .

Taken together, the quantitative findings and the qualitative themes in this study point clearly toward the need for a proactive and tiered model of support. Waiting until students reach a crisis point before

offering help means that many students who could benefit from earlier intervention are never reached. The three-tier framework proposed in this study was designed specifically to address this gap by offering universal support to all students, targeted support for those showing early signs of difficulty, and prompt, confidential referral for students identified as higher risk. The baseline findings reported here provide a clear empirical foundation for the development and evaluation of that framework in future phases of this project.

5. Limitations

Although this study provides useful baseline evidence, several limitations should be kept in mind when reading the findings. The first is the cross-sectional design. Because data were collected at a single point in time, the study cannot confirm that educational stressors directly caused the psychological outcomes that were observed. The direction of these relationships, and whether they change over time, remains a question for future phases of the project. As this was also an initial baseline study, the findings offer a snapshot of students' experiences at one moment in time, rather than a complete picture of how those experiences develop across the medical programme. This is a recognised limitation of baseline cross-sectional research and should be kept in mind when considering how far the findings can be generalised.A second limitation is that the study was carried out within a single faculty at Cyprus International University, with a sample of 96 students. While this sample was appropriate for the baseline objectives of this phase, the findings may not represent medical students in other institutions, countries, or educational systems with different curricula, cultural settings, or levels of institutional support. Third, all data were collected through self-report instruments, which are subject to response bias, social desirability effects, and individual differences in how questions are interpreted. In medical education settings, where psychological difficulties may still be viewed as a personal weakness, some students may have underreported the severity of what they were experiencing. Finally, the sample included more female than male participants (60 vs. 35), which may have introduced a degree of gender-related bias into the results, particularly for constructs such as burnout and anxiety where gender differences were observed.

6. Recommendations Based on the findings of this study, the following practical recommendations are offered for the Faculty of Medicine at Cyprus International University and for similar institutions working to develop more proactive student support. First, the curriculum structure and examination schedule should be reviewed with student well-being in mind. The strong negative association between academic stress and well-being ($r = -.52$, $p < .001$), combined with students' qualitative reports of exhaustion, suggests that how the curriculum is organised across the academic year has direct psychological consequences. Distributing assessments more evenly and reducing unnecessary content overlap may help to reduce the intensity of stress that students experience at peak periods.Second, emotional intelligence and self-regulatory skills should be formally embedded in the curriculum rather than left to develop on their own. The positive association between emotional intelligence and well-being ($r = .30$, $p < .05$), together with evidence from Bin-Abdulrahman et al. (2025) that structured stress management

programmes improve medical students' psychological outcomes, supports the inclusion of reflective practice sessions, emotion regulation workshops, and mindfulness-based activities within existing teaching structures [15].Third, the faculty should establish formal, anonymous peer-support mechanisms. Students' qualitative responses consistently pointed to a preference for support that is accessible and non-judgmental. Trained peer mentors and near-peer support groups could provide a more comfortable first point of contact for students who are not yet ready to approach formal counselling services[10]. Fourth, psychological and psychiatric referral pathways must be clearly separated from academic assessment processes. As long as students believe that seeking help could affect their academic record, clinical placements, or professional future, many will continue to avoid doing so regardless of what services are available. Establishing independent, confidential referral routes and communicating them clearly to all students is a necessary condition for any early-intervention model to reach the students who most need it [7, 6].

5. Conclusion

This study examined the psychological well-being, stress, burnout, anxiety, emotional intelligence, and educational experiences of undergraduate medical students at the Faculty of Medicine, Cyprus International University. Its main aim was to establish a cross-sectional baseline that could inform the development of a multicomponent early-intervention support framework. The findings showed that academic stress and burnout were both elevated above the midpoint of the scale, well-being recorded the lowest mean score across all constructs, and stress and anxiety were strongly and consistently linked ($r = .77$, $p < .001$). At the same time, students reported comparatively high emotional intelligence and a moderately positive view of teaching effectiveness, suggesting that there are existing strengths in this group that a well-designed institutional framework could build on. The correlation analyses confirmed that the quality of the learning environment, teaching effectiveness, and students' emotional regulation capacity were all meaningfully connected to their psychological outcomes. This reinforces the view that student distress in medical education is not simply a matter of individual vulnerability it is also shaped by the conditions in which training takes place. These findings add institution-specific evidence from a private international medical school context that remains underrepresented in the existing literature.Together, the quantitative patterns and the qualitative themes from students' responses provide a clear empirical basis for the three-tier early-intervention framework proposed in this study. The framework's core logic to engage students before distress escalates, to offer selective support when early signs appear, and to provide prompt and confidential referral when higher-level support is needed is directly supported by the baseline data reported here. Future phases of this longitudinal project will evaluate how well this framework works in practice to produce transferable evidence on what proactive, institution-embedded support for medical students can look like and achieve.

Abbreviations

ANOVA
Analysis of Variance

CIU
Cyprus International University
DREEM
Dundee Ready Educational Environment Measure
GAD-7
Generalized Anxiety Disorder-7 scale
MBI-SS
Maslach Burnout Inventory–Student Survey
SD
Standard Deviation
SEEQ
Students' Evaluation of Educational Quality
SPSS
Statistical Package for the Social Sciences
WHO-5
World Health Organization-5 Well-Being Index
WLEIS
Wong and Law Emotional Intelligence Scale

Declarations

Ethics approval and consent to participate

This study was approved by the Ethics Committee of Cyprus International University. All participants provided written informed consent before participation. All methods were carried out in accordance with the Declaration of Helsinki.

Consent for publication

Not applicable.**Availability of data and materials**

Competing interests

The authors declare that they have no competing interests.

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Author Contribution

All authors contributed to the study concept and design. Mona Zainelabidin and Aysegul Taylan-Ozkan conceived and designed the study, collected data, and drafted the manuscript. Zehra Edebal contributed to the study design, data analysis, and critical revision of the manuscript. Aysegul Taylan-Ozkan supervised the project and contributed to the interpretation of findings. All authors read and approved the final manuscript.

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Data Availability

The datasets used and analysed during the current study are available from the corresponding author upon reasonable request.

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