



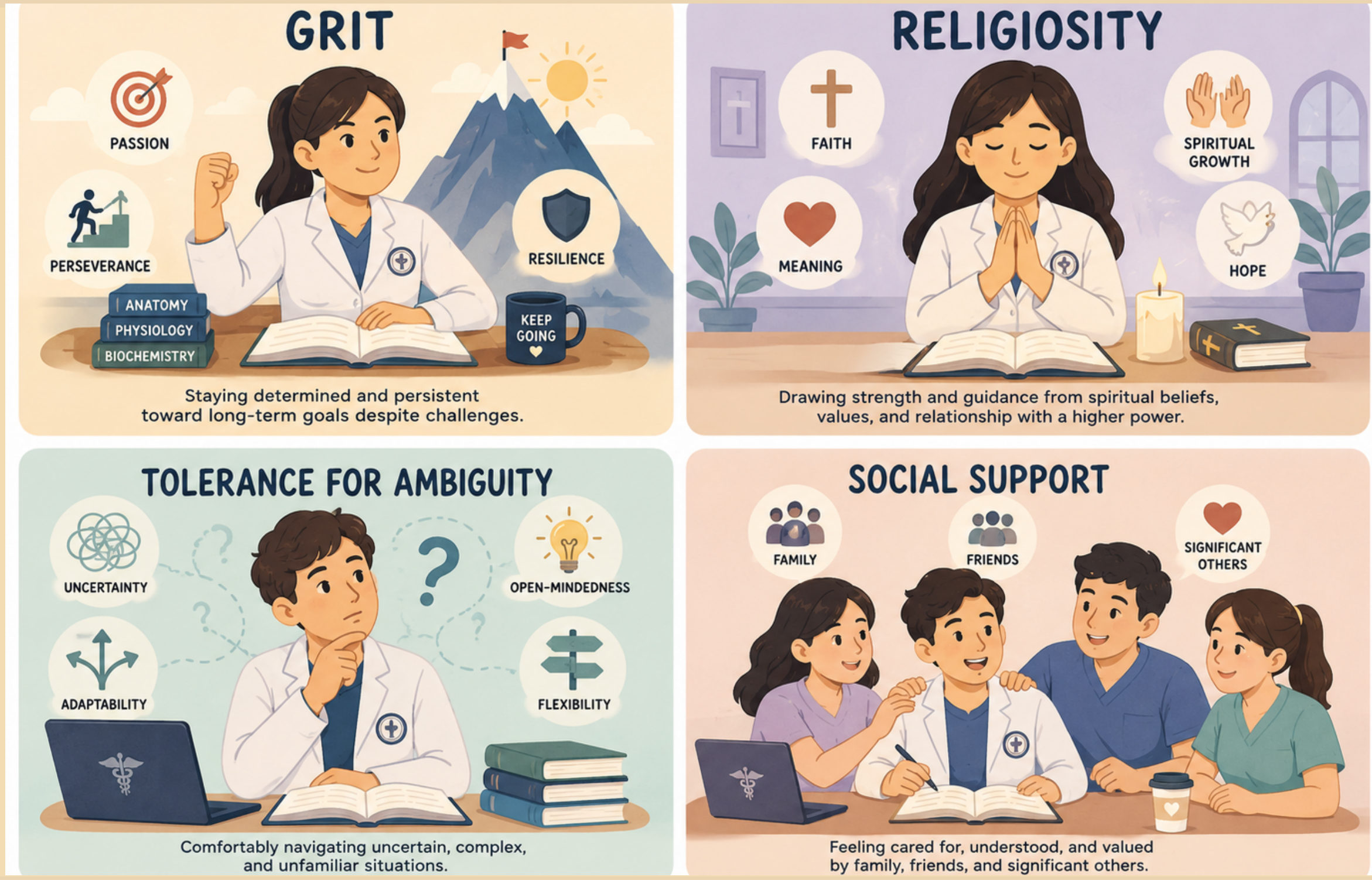
PROTECTIVE RESILIENCE FACTORS BUFFERING BURNOUT RISK IN MEDICAL STUDENTS: A PREDICTIVE MODEL WITHIN THE MOOD-ANXIETY VULNERABILITY SPECTRUM

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INTRODUCTION

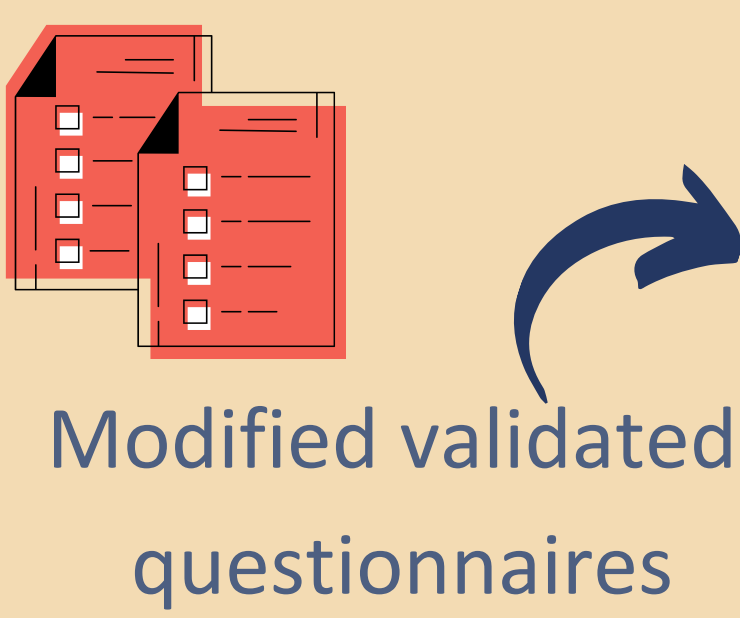
Burnout is recognized by the World Health Organization as an occupational phenomenon characterized by emotional exhaustion and depersonalization. Substantial symptom overlap exists between burnout and depressive disorders, and burnout has been significantly associated with anxiety and psychological distress in medical students. Despite this, fewer studies quantify modifiable protective resources that buffer burnout risk.



OBJECTIVES

To determine the independent protective and predictive effects of **grit**, **religiosity**, **tolerance for ambiguity**, and **perceived social support** on burnout among medical students.

METHODOLOGY



Modified validated questionnaires

Submitted to Medical School IRB for approval



Online data collection among selected PBL I, II, III, and IV students



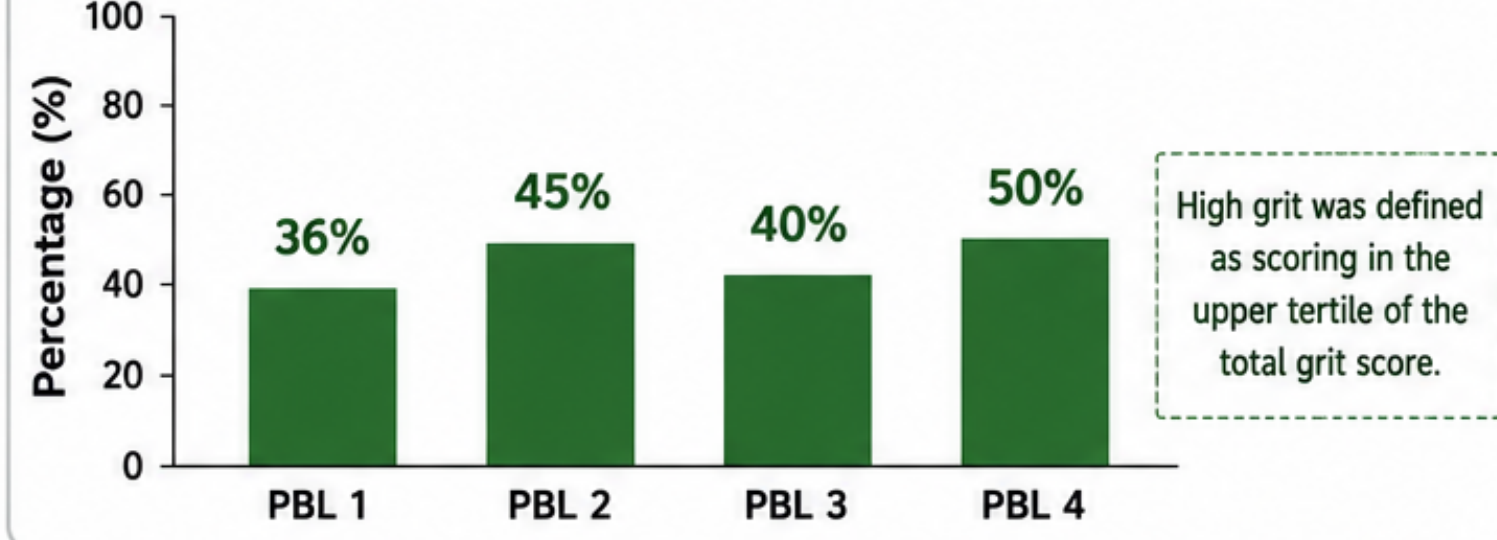
Burnout levels and extent of specific protective resources were determined



Pearson-Rho and Chi-square correlation with multivariate linear regression, and AUROC curve analyses were used to determine significant protective and predictive association of specific resources on burnout levels with its prognostic utility

RESULTS

OVERALL HIGH GRIT ACROSS YEAR LEVELS

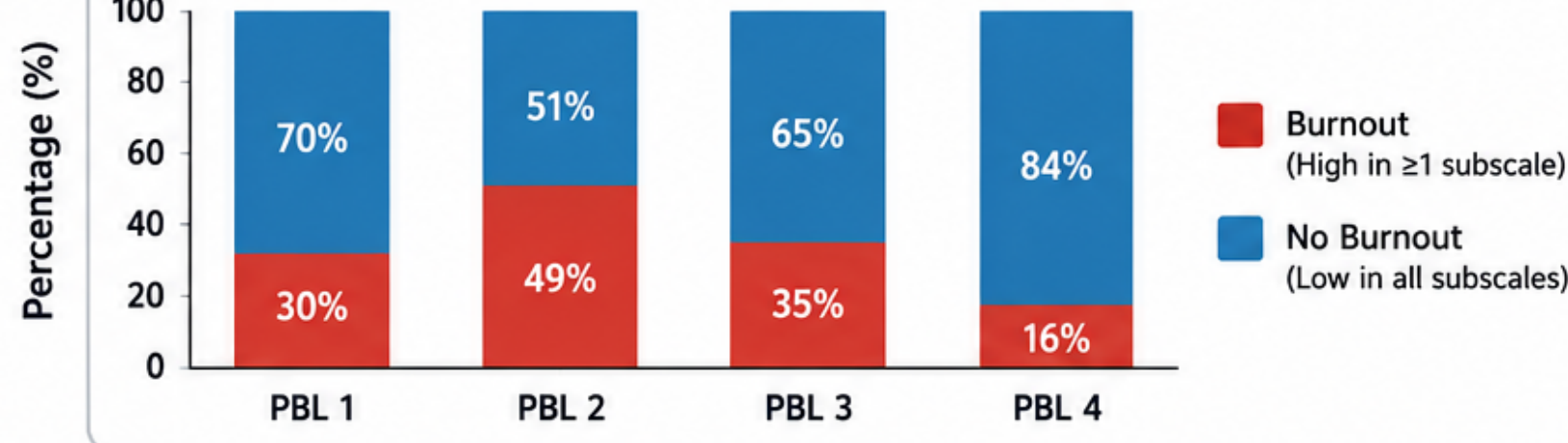


Instrument: Short Grit Scale (Grit-S) | Low = Lower tertile | Moderate = Middle tertile | High = Upper tertile

KEY TAKEAWAYS

- Half of PBL 4 students (50%) demonstrated high overall grit, the highest among all year levels.
- Perseverance of Effort showed the strongest domain in PBL 4 (56% high), indicating sustained hard work toward goals.
- Consistency of Interest and Persistence of Purpose improved progressively in higher year levels.
- Grit develops over time, with more students in higher years exhibiting high levels of determination and resilience.

OVERALL BURNOUT INCIDENCE ACROSS YEAR LEVELS

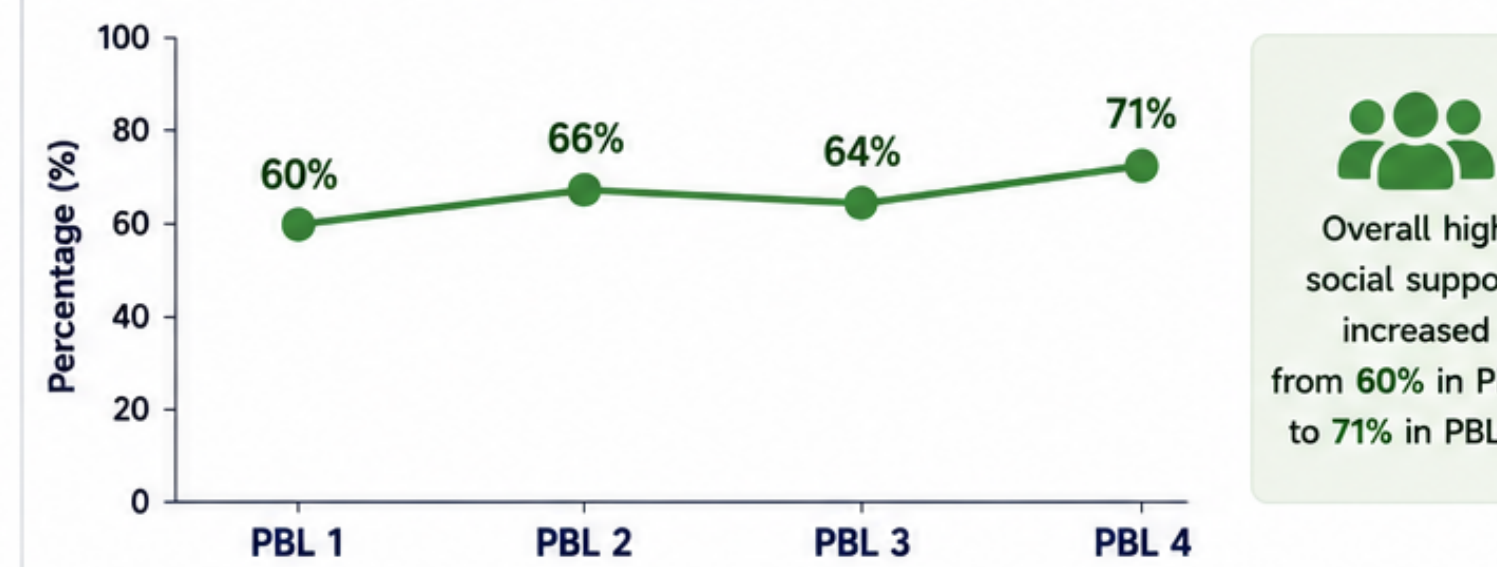


MBI-SS: Maslach Burnout Inventory – Student Survey

KEY TAKEAWAYS

- PBL 2 students exhibited the highest level of burnout, especially in Emotional Exhaustion.
- Depersonalization was generally low across all year levels.
- High burnout in Personal Accomplishment was consistently observed among all year levels.
- Burnout decreased in higher year levels, with PBL 4 showing the lowest burnout incidence.

TREND OF HIGH SOCIAL SUPPORT ACROSS YEAR LEVELS

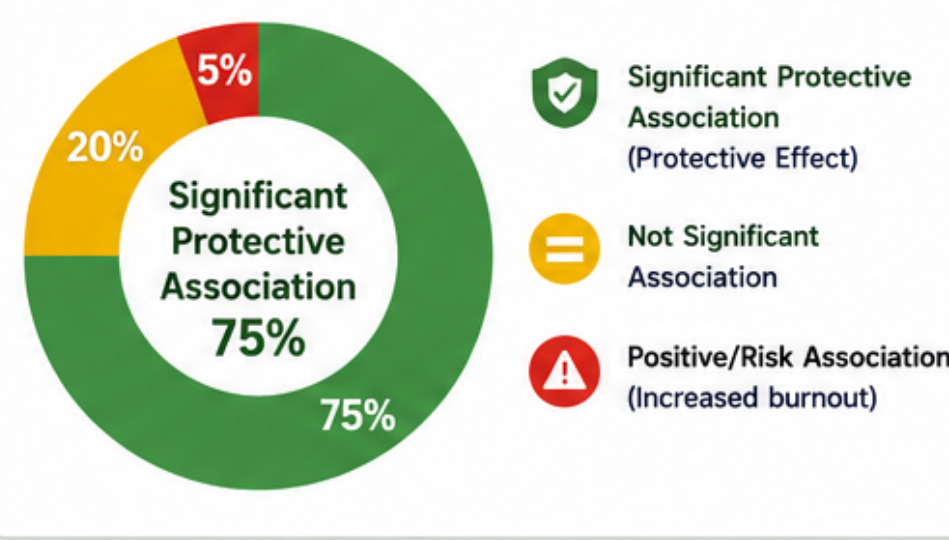


Instrument: Multidimensional Scale of Perceived Social Support (MSPSS) | Low = Lower tertile | Moderate = Middle tertile | High = Upper tertile

KEY TAKEAWAYS

- A majority of students in all year levels reported high overall social support.
- Moderate social support was observed in about one-fourth to one-third of the respondents.
- Low social support remained low across all year levels, ranging from 7% to 9%.
- There is an overall upward trend in high social support, with the highest in PBL 4 (71%).

OVERALL PROTECTIVE EFFECT OF RESOURCES



SUMMARY OF ASSOCIATIONS BY RESOURCE

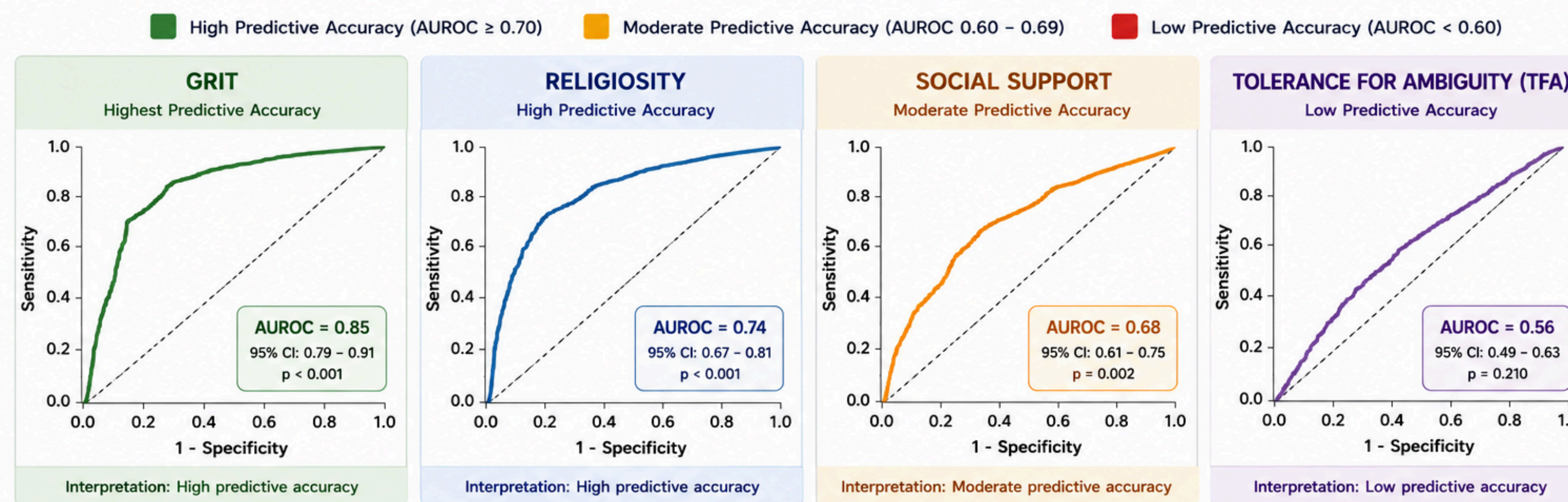
Protective Resource	Overall Association with Burnout	Protective Effect
Grit	Significant (p < 0.001)	✓
Religiosity	Significant (p < 0.001)	✓
Social Support	Significant (p < 0.001)	✓
Tolerance for Ambiguity (TFA)	Not Significant (p > 0.05)	✗

KEY TAKEAWAYS

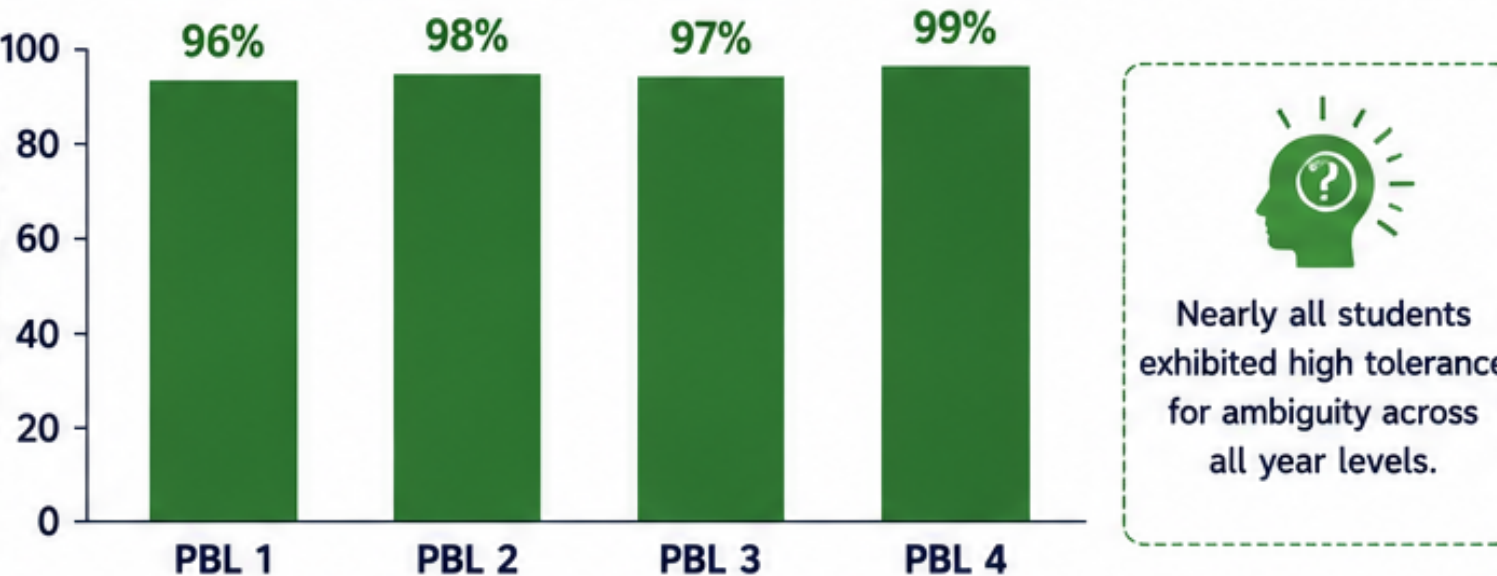
- Grit showed the strongest protective effect against burnout across all year levels.
- Religiosity was significantly associated with lower burnout, supporting its role as a protective resource.
- Social support from family, friends, and significant others had a significant protective effect against burnout.
- Tolerance for ambiguity was not significantly associated with burnout, indicating no clear protective effect.
- Overall, 75% of the assessed protective resources demonstrated a significant protective effect against burnout.

Statistical Test: Spearman's Rank Correlation | Protective Association: Negative correlation (r < 0, p < 0.05) | Risk Association: Positive correlation (r > 0, p < 0.05) | Not Significant: p > 0.05

Receiver Operating Characteristic (ROC) Analysis for Predicting Burnout



OVERALL HIGH TFA ACROSS YEAR LEVELS

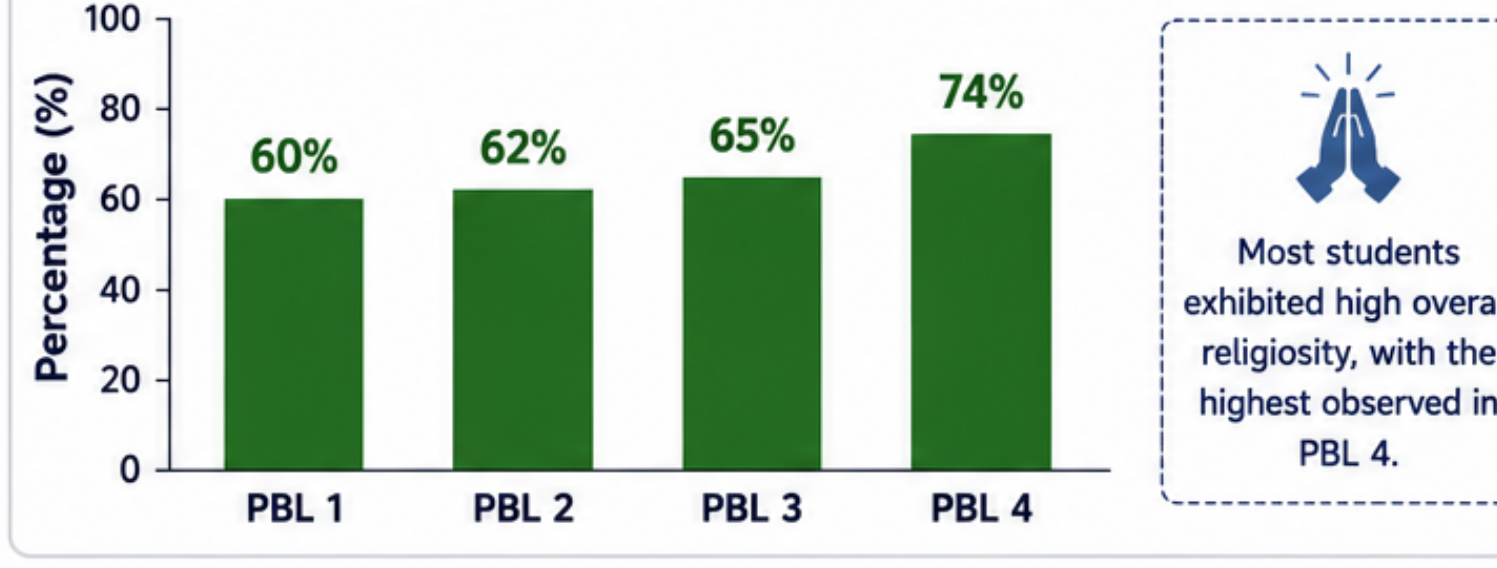


Instrument: Tolerance for Ambiguity Scale (TFA Scale) | Low = Lower tertile | Moderate = Middle tertile | High = Upper tertile

KEY TAKEAWAYS

- High tolerance for ambiguity was consistently observed across all dimensions and year levels.
- The TFA – Anticipatory dimension had the highest proportion of high scores, especially in PBL 4 (98%).
- Minimal proportions of low TFA were noted in all dimensions, indicating strong adaptability among CIM medical students.
- Tolerance for ambiguity remained stable and high even amid the challenges of online-based education during the pandemic.

OVERALL HIGH RELIGIOSITY ACROSS YEAR LEVELS

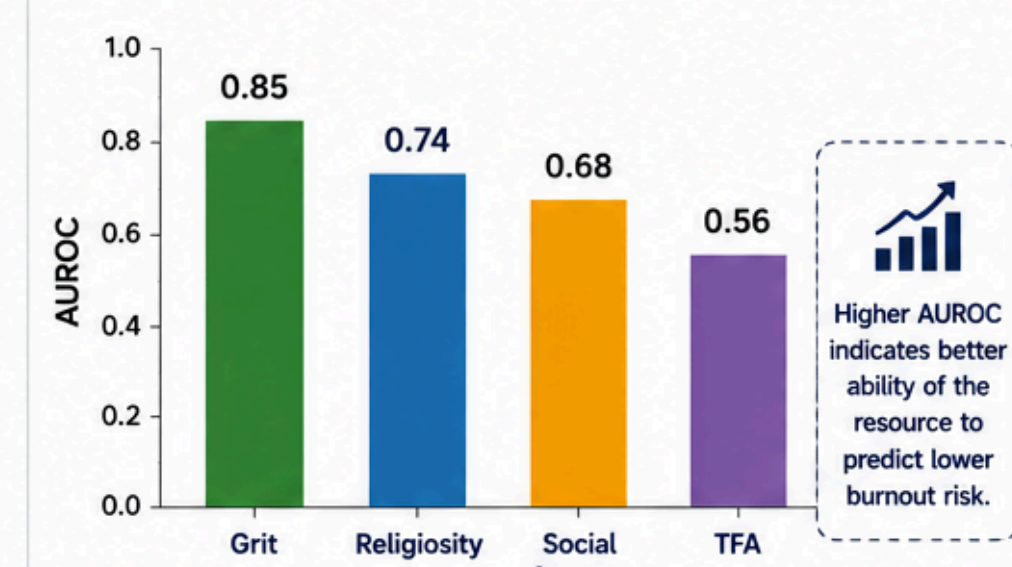


Instrument: Duke University Religion Index (DUREL) | Low = Lower tertile | Moderate = Middle tertile | High = Upper tertile

KEY TAKEAWAYS

- High levels of religiosity were observed in all domains across PBL 1–4.
- Intrinsic Religiosity (IR) showed the highest proportion of high scores, especially in PBL 4 (82%).
- Non-Organizational Religious Activity (NORA) had relatively lower high scores compared to other domains.
- Overall religiosity increased progressively, with the highest proportion of high religiosity in PBL 4 (74%).

COMPARISON OF AUROC VALUES



SUMMARY OF AUROC RESULTS

Protective Resource	AUROC (95% CI)	p-value	Predictive Effect	Accuracy Level
Grit	0.85 (0.79 – 0.91)	< 0.001	✓	High
Religiosity	0.74 (0.67 – 0.81)	< 0.001	✓	High
Social Support	0.68 (0.61 – 0.75)	0.002	✓	Moderate
Tolerance for Ambiguity (TFA)	0.56 (0.49 – 0.63)	0.210	✗	Low

KEY TAKEAWAYS

- Grit demonstrated the highest predictive accuracy (AUROC = 0.85), making it the strongest predictor of lower burnout risk.
- Religiosity also showed high predictive accuracy (AUROC = 0.74), indicating its important role in protecting against burnout.
- Social support had moderate predictive accuracy (AUROC = 0.68), contributing to reduced burnout risk.
- Tolerance for ambiguity (TFA) showed low predictive accuracy (AUROC = 0.56) and was not a significant predictor of burnout.
- Perseverance (Grit), spirituality (Religiosity), and social connectedness (Social Support) are key protective resources against burnout.

AUROC Interpretation: 0.90 – 1.00 = Excellent | 0.80 – 0.89 = Good | 0.70 – 0.79 = Fair | 0.60 – 0.69 = Poor | 0.50 – 0.59 = Fair (No discriminative ability) | AUROC = Area Under the Receiver Operating Characteristic Curve | Outcome: Burnout (Yes vs No) | Higher AUROC = Better predictive ability to lower burnout

CONCLUSION

Resilience-related resources demonstrate measurable buffering and predictive value against burnout, supporting upstream preventive mental health strategies to mitigate mood–anxiety vulnerability in medical students.

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