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Article

# Personality Traits and Psychological Well-Being Among Medical Students: A Cross-Sectional Study

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## Abstract

**Background:** Medical training is characterized by high academic demands and sustained exposure to stressors. Although the literature suggests robust links between personality and mental health, fewer studies have examined how broad personality traits relate to multidimensional psychological well-being (PWB) among medical students. **Methods:** In a cross-sectional paper-pencil survey conducted among 115 Polish medical students, personality was assessed with the NEO-FFI (Neuroticism, Extraversion, Openness, Agreeableness, Conscientiousness) and psychological well-being with the 84-item Ryff Psychological Well-Being Scales (autonomy, environmental mastery, personal growth, purpose in life, positive relations, self-acceptance). Descriptive statistics, Pearson/Spearman correlations, and multiple linear regression were applied ( $\alpha = 0.05$ ). **Results:** Mean global PWB was moderate-to-high ( $M = 4.22$ ,  $SD = 0.57$ ; 1–6 scale). The highest subscale means were personal growth ( $M = 4.48$ ), purpose in life ( $M = 4.44$ ), and positive relations ( $M = 4.41$ ); the lowest were autonomy ( $M = 3.98$ ), environmental mastery ( $M = 3.91$ ), and self-acceptance ( $M = 4.09$ ). Conscientiousness and Extraversion correlated positively with PWB dimensions, whereas Neuroticism showed consistent negative associations. In regression models, Conscientiousness ( $\beta = 0.482$ ,  $p < 0.001$ ) and Extraversion ( $\beta = 0.347$ ,  $p < 0.001$ ) jointly explained 38.7% of global PWB variance; Neuroticism alone predicted 32.4% of variance ( $\beta = -0.569$ ,  $p < 0.001$ ). No significant sex differences in PWB were observed. **Conclusions:** Personality traits—especially lower Neuroticism and higher Conscientiousness and Extraversion—are strongly linked with better psychological well-being among medical students. Screening and tailored, trait-informed preventive programs (e.g., emotion regulation for high Neuroticism; study planning for lower Conscientiousness; social connectedness for lower Extraversion) may support mental health in medical schools.

**Keywords:** Big Five; medical students; psychological well-being; Ryff scales; NEO-FFI; academic stress; mental health promotion

## 1. Introduction

Psychological well-being (PWB) has become a core priority for public health and higher education, especially after the COVID-19 pandemic [1,2,3,4,5]. Beyond the absence of disorder, contemporary conceptualizations treat well-being as positive functioning across emotional, psychological and social domains [1,2,3,4,5]. University students - and medical students in particular - face cumulative stressors linked to academic load, performance pressure and early exposure to suffering in clinical settings [6,7,8,9,10,11]. These conditions elevate the risk of anxiety, depressive symptoms and burnout, underscoring the need to identify individual difference factors that help or hinder adaptation [6,7,8,9,10,11].

Personality traits from the Five-Factor Model (FFM; Big Five) - Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness - serves as broad, relatively stable

dispositions shaping affect, cognition and behavior [12,13,14,15,16,17]. Substantial evidence indicates that lower Neuroticism and higher Extraversion and Conscientiousness are associated with greater happiness, life satisfaction and eudaimonic well-being, while Agreeableness and Openness show smaller but meaningful links with selected facets of well-being [4,15,6,5,11,17].

In medical education, personality may influence not only stress appraisal and coping, but also help-seeking, social integration and the capacity to sustain purpose and growth [18,6,8,19,9,20,21]. Yet, a focused analysis of how the Big Five relates to Ryff's multidimensional PWB model - covering autonomy, environmental mastery, personal growth, purpose in life, positive relations and self-acceptance - remains relatively scarce in student-doctor samples in Central/Eastern Europe [2,3,11,17,21,22]. The present study addresses this gap using validated Polish versions of the NEO-FFI and the Ryff PWB scales in a cohort of medical students [23,24,25].

### 1.1. Conceptual Framework and Theoretical Background

Psychological well-being (PWB) in the eudaimonic tradition emphasizes optimal functioning - autonomy, environmental mastery, purpose in life, positive relations, self-acceptance and personal growth - rather than transient affect alone [2,3,22,25]. Within medical education, these facets are not luxuries: autonomy is linked to professional identity formation; environmental mastery aligns with clinical self-efficacy; purpose in life sustains motivation through lengthy training; positive relations underpin teamwork and psychological safety; self-acceptance supports self-compassion amid errors and steep learning curves and personal growth reflects ongoing adaptation to curricular and clinical complexity.

Personality traits provide a higher-order disposition system that shapes appraisal of academic demands, exposure to stressors and selection of coping strategies [14,18,17]. Conscientiousness - goal focus, planning and persistence - likely scaffolds environmental mastery and purpose by supporting time management and boundary-setting. Extraversion - positive affectivity and social approach - can afford access to peer support and prosocial coping, energizing personal growth and relational well-being. Neuroticism - negative affectivity and stress reactivity - bears on ruminative processing and threat appraisal, undermining autonomy, mastery and self-acceptance. Agreeableness may be especially relevant for relational harmony, whereas Openness may matter for reflective learning and growth orientation.

The present work adopts a trait - well-being framework suited to the developmental tasks of medical students: consolidating a nascent physician identity, learning to tolerate uncertainty and integrating academic with clinical roles [6,7,9,10,11]. By mapping broad traits to Ryff's PWB, we aim to inform pragmatic, trait-informed prevention within medical curricula.

## 2. Materials and Methods

### 2.1. Study Design and Participants

A cross-sectional, anonymous paper-pencil survey was conducted at the Poznan University of Medical Sciences (Poland) between October 2025 and February 2026. Participation was voluntary and uncompensated.

Inclusion criteria:

- enrolment in the medical program,
- age  $\geq 18$  years,
- consent to participate.

Exclusion criteria:

- incomplete questionnaires ( $>10\%$  missing data),
- exchange students (to ensure cohort homogeneity).

A total of 115 students aged 20–27 years participated; women accounted for 68.7% of the sample. Both full-time and part-time students were represented and participants varied in residence (e.g. family home, rented flat) and perceived financial status.

## 2.2. Measures

**Personality:** The Polish adaptation of the NEO Five-Factor Inventory (NEO-FFI) was used to assess Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness (12 items per scale; 5-point Likert) [12,13,23,24]. Standard scoring (including reverse-keyed items) yielded raw totals; normative sten scores were available for interpretation.

**Psychological Well-Being:** The Polish 84-item Ryff Psychological Well-Being Scales (PWBS) measured six dimensions - autonomy, environmental mastery, personal growth, purpose in life, positive relations and self-acceptance - on a 6-point Likert scale [2,3,24,25]. Higher scores indicate better functioning within each domain and globally.

## 2.3. Statistical Analysis

Analyses were performed in IBM SPSS 29. Descriptive statistics (mean, SD, range, skewness, kurtosis) were used to characterize all variables. Distributional assumptions were probed with the Shapiro-Wilk test. Depending on the normality assumption, Pearson or Spearman correlations were used to quantify bivariate associations between the Big Five and PWB dimensions. Multiple linear regressions examined the extent to which personality traits predicted global PWB. Group differences by sex were evaluated via independent-samples t-tests or Mann-Whitney U tests as appropriate. Significance was set at  $\alpha = 0.05$ .

## 2.4. Sample Size Considerations and Power

Although the study was not preregistered with an *a priori* power analysis, *post hoc* considerations suggested that the achieved sample ( $N = 115$ ) provided adequate precision for medium-sized correlations. With  $\alpha = 0.05$  and  $N = 115$ , the detectable correlation at 80% power was approximately  $r \approx 0.26$ , which covered most associations typically observed between personality traits and well-being indices. Regression models with two predictors and  $N \approx 115$  offered sufficient power ( $>0.90$ ) to detect joint  $R^2$  values around 0.20–0.25, whereas the observed  $R^2$  values in this study were larger.

## 2.5. Psychometric Notes and Score Handling

NEO-FFI subscales comprised 12 items each. Reverse-keyed items were re-coded prior to summation following standard manuals. While sten norms are available, we focused on raw totals to preserve metric variance for correlational/regression analyses. For PWB, the 84-item version yielded robust internal consistency for global and subscale scores; negatively keyed statements were reversed before computing subscale means on a 1-6 scale for interpretability. Missing data were negligible due to on-site administration; any sporadic omissions were handled by person-mean imputation within a subscale if  $\leq 10\%$  items were missing, otherwise the subscale for that respondent was set to missing.

Distributional checks comprised Shapiro-Wilk tests and visual inspection (histograms). Because purpose in life and self-acceptance deviated from normality, we reported Spearman's rho for their trait associations while retaining Pearson's r elsewhere.

## 2.6. Multiple Testing and Robustness Checks

Given the number of bivariate tests, we considered the potential for Type I error inflation. Our primary interpretation emphasized effect-size coherence across conceptually related outcomes (e.g. consistent positive links of Conscientiousness across mastery, purpose and global PWB; consistent negative links of Neuroticism across domains) rather than single isolated p-values. As a sensitivity approach, a Benjamini-Hochberg false discovery rate (FDR) at  $q = 0.10$  yielded the same pattern of substantive conclusions for medium or larger effects.

Assumption checks for linear regression included inspection of residual plots and collinearity diagnostics (expected to be low, given the modest intercorrelations among Big Five domains in student samples). The absence of strong sex differences and the balanced predictive pattern minimized concerns about suppression or unstable coefficients.

### 3. Results

#### 3.1. Sample Characteristics and Descriptive Statistics

Global PWB was moderate-to-high ( $M = 4.22$ ,  $SD = 0.57$ ; scale 1–6). Subscale means were highest for personal growth ( $M = 4.48$ ,  $SD = 0.54$ ), purpose in life ( $M = 4.44$ ,  $SD = 0.79$ ) and positive relations ( $M = 4.41$ ,  $SD = 0.83$ ). Lower levels were observed for autonomy ( $M = 3.98$ ,  $SD = 0.78$ ), environmental mastery ( $M = 3.91$ ,  $SD = 0.71$ ) and self-acceptance ( $M = 4.09$ ,  $SD = 0.84$ ). Distributions were largely normal, except for minor deviations intentionally introduced in life satisfaction and self-acceptance.

On the NEO-FFI, the sample showed relatively high Conscientiousness ( $M = 40.69$ ,  $SD = 7.13$ ), moderate Extraversion ( $M = 37.56$ ,  $SD = 5.83$ ) and Openness ( $M = 38.00$ ,  $SD = 5.91$ ), average Agreeableness ( $M \approx 36.97$ ,  $SD = 5.85$ ) and moderate Neuroticism ( $M = 34.76$ ,  $SD = 7.65$ ).

**Table 1.** Descriptive statistics for Ryff Psychological Well-Being dimensions (1-6 scale).

Dimension	Mean	SD	Range
Positive Relations	4.41	0.83	2.36-5.86
Autonomy	3.98	0.78	2.07-5.71
Environmental Mastery	3.91	0.71	1.93-5.50
Personal Growth	4.48	0.54	3.14-5.93
Purpose in Life	4.44	0.79	1.79-6.00
Self-Acceptance	4.09	0.84	2.07-5.71
Global PWB	4.22	0.57	2.80-5.36

#### 3.2. Correlational Findings

Bivariate analyses supported the primary hypothesis that personality relates systematically to PWB dimensions. Conscientiousness correlated positively with global PWB ( $r = 0.518$ ,  $p < 0.05$ ) and with positive relations ( $r = 0.312$ ), autonomy ( $r = 0.221$ ), environmental mastery ( $r = 0.602$ ), personal growth ( $r = 0.328$ ), purpose in life ( $r = 0.587$ ) and self-acceptance ( $r = 0.320$ ).

Extraversion correlated positively with positive relations ( $r = 0.357$ ), environmental mastery ( $r = 0.257$ ), personal growth ( $r = 0.367$ ), purpose in life ( $r = 0.311$ ), self-acceptance ( $r = 0.363$ ) and global PWB ( $r = 0.397$ ).

Neuroticism correlated negatively with all PWB domains, including positive relations ( $r = -0.217$ ), autonomy ( $r = -0.573$ ), environmental mastery ( $r = -0.624$ ), personal growth ( $r = -0.225$ ), purpose in life ( $r = -0.333$ ), self-acceptance ( $r = -0.579$ ) and global PWB ( $r = -0.570$ ).

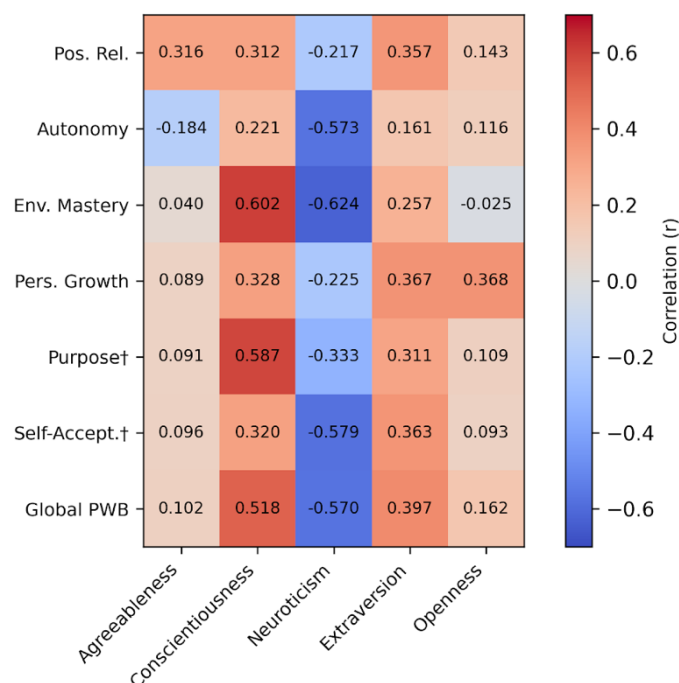
Agreeableness displayed a selective positive link with positive relations ( $r = 0.316$ ) and a small, negative association with autonomy ( $r = -0.184$ ), whereas Openness was positively associated with personal growth ( $r = 0.368$ ) only.

**Table 2.** Correlations ( $r$ ) between Big Five personality traits and PWB dimensions (Ryff).

PWB dimension	Agreeable ness	Conscientious ness	Neurotic ism	Extraversi on	Open ness
Positive Relations	0.316*	0.312*	-0.217*	0.357*	0.143
Autonomy	-0.184*	0.221*	-0.573*	0.161	0.116
Environmental Mastery	0.040	0.602*	-0.624*	0.257*	-0.025
Personal Growth	0.089	0.328*	-0.225*	0.367*	0.368*

Purpose in Life†	0.091	0.587*	-0.333*	0.311*	0.109
Self-Acceptance†	0.096	0.320*	-0.579*	0.363*	0.093
Global PWB	0.102	0.518*	-0.570*	0.397*	0.162

Notes: Values are Pearson's  $r$  unless indicated. † Spearman's rho was used due to non-normal distributions. \*  $p < 0.05$  (two-tailed).



**Figure 1.** Heatmap of correlations between Big Five personality traits and PWB dimensions (Ryff). Values shown are Pearson's  $r$ ; † indicates Spearman's rho due to non-normality.

### 3.3. Prediction of Global Psychological Well-Being

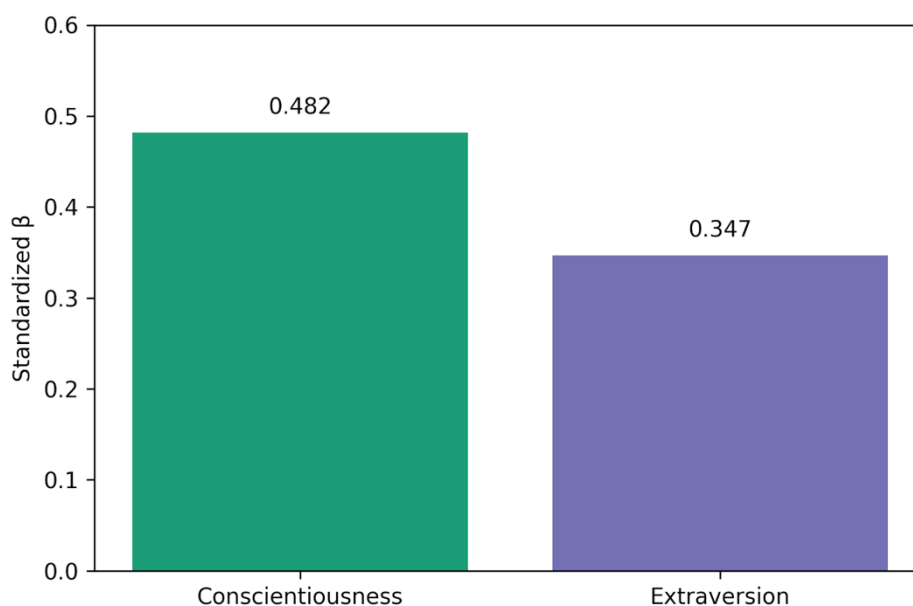
In multiple regression models, Conscientiousness and Extraversion jointly predicted global PWB, accounting for 38.7% of the variance ( $R^2 = 0.387$ ;  $F(2,112) = 35.423$ ,  $p < 0.001$ ). Both predictors were significant and positive (Conscientiousness:  $\beta = 0.482$ ,  $p < 0.001$ ; Extraversion:  $\beta = 0.347$ ,  $p < 0.001$ ).

A separate model with Neuroticism alone explained 32.4% of global PWB variance ( $R^2 = 0.324$ ;  $F(1,113) = 54.243$ ,  $p < 0.001$ ), with a significant negative coefficient ( $\beta = -0.569$ ,  $p < 0.001$ ).

**Table 3.** Multiple linear regression predicting global PWB from Conscientiousness and Extraversion (standardized coefficients).

Predictor	$\beta$	$t$	$p$
Conscientiousness	0.482	6.488	<0.001
Extraversion	0.347	4.666	<0.001

Model fit:  $R^2 = 0.387$ ;  $F(2,112) = 35.423$ ;  $p < 0.001$ . Dependent variable: Global PWB (Ryff).



**Figure 2.** Standardized beta coefficients from the two-predictor model (Conscientiousness and Extraversion) predicting global PWB.

#### 3.4. Group Comparisons by Sex

No statistically significant sex differences emerged for global PWB or any Ryff subscales based on independent-samples tests (all  $p > 0.05$ ).

#### 3.5. Pattern Synthesis Across PWB Facets

The correlation profile suggests a trait-gradient across eudaimonic functioning. Conscientiousness showed its strongest alignment with environmental mastery and purpose in life - domains most proximal to planning, self-regulation and goal pursuit - while also supporting self-acceptance and social functioning. Extraversion is related broadly to relational and growth-oriented outcomes, reflecting positive affect and engagement. Neuroticism exhibited the broadest inverse footprint, spanning autonomy, mastery and self-acceptance, consistent with a global liability to stress reactivity and negative self-evaluation.

Agreeableness was selectively relevant for positive relations - mirroring its interpersonal orientation - yet showed a small negative link with autonomy, possibly indicating a trade-off in which prioritizing harmony may coincide with a lower emphasis on an independent stance. Openness connected primarily with personal growth, a theoretically coherent finding given its cognitive exploration and receptivity to experience.

#### 3.6. Effect Size Interpretation and Practical Magnitudes

In practical terms, the observed medium-sized associations indicate that students in the upper quartile of Conscientiousness tend to report noticeably higher environmental mastery and purpose than peers in the lower quartile, corresponding to differences that are educationally meaningful (e.g. more consistent study schedules, clearer prioritization and greater control over competing demands). Conversely, students with elevated Neuroticism report lower autonomy and self-acceptance - differences that can manifest as pervasive doubt and heightened self-criticism in evaluative settings.

Regression  $R^2$  values in the 0.32-0.39 range indicate that a nontrivial portion of well-being variability is linked to broad traits, leaving substantial variance to target with environmental redesign and skills training - underscoring the complementarity of individual and systemic interventions.

## 4. Discussion

This study investigated associations between the Big Five and multi-dimensional psychological well-being in a cohort of Polish medical students. Three principal findings emerged. First, the overall level of PWB was moderate-to-high, with the strongest facets being personal growth, purpose in life and positive relations, while comparatively lower levels were observed for autonomy and environmental mastery. Second, personality traits showed theoretically coherent links with PWB: higher Conscientiousness and Extraversion were associated with higher functioning, while Neuroticism was associated with lower functioning across domains. Third, regression models indicated that these traits explained substantial variance in global PWB, with no sex differences.

The pattern supports the view that personality constitutes a key individual-difference substrate for well-being in the demanding context of medical education [14,15,17,20,11,21]. Conscientiousness likely promotes effective time management, goal pursuit and a sense of control over one's environment - mechanisms that align with higher environmental mastery, purpose and self-acceptance. Extraversion may operate via greater positive affect and social connectedness, benefiting positive relations, growth and overall vitality. In contrast, Neuroticism involves heightened negative affectivity and stress reactivity, which is inversely related to autonomy, mastery and self-acceptance.

While Agreeableness and Openness showed smaller and more selective associations, their roles may be context-dependent [5,17,20,11]. Agreeableness aligned with relational well-being, whereas Openness aligned with growth-oriented functioning - patterns consistent with theoretical expectations in young adults. In highly structured and evaluative medical programs, traits that aid emotion regulation and organized, sustained effort may yield stronger and more generalized benefits, than those linked primarily to curiosity or interpersonal harmony.

The finding of moderate-to-high well-being despite widely documented stressors among medical students can be explained in several ways. The present sample included a large proportion of junior students with limited clinical exposure. Moreover, high Conscientiousness alongside moderate Extraversion and relatively low-to-moderate Neuroticism may constitute a protective profile for early-stage training. Nonetheless, the same trait constellation could become a liability if it evolves into rigid perfectionism and overcommitment under intensifying clinical and evaluative pressures. Ongoing monitoring and early psychoeducation on adaptive standards, self-compassion and help-seeking are recommended.

Practical implications follow directly from the predictive findings [8,10,11,17,21]. Trait-informed prevention and early interventions can be embedded within medical curricula: (i) for students high in Neuroticism - training in emotion regulation, cognitive restructuring and rumination management; (ii) for those lower in Conscientiousness - study skills, planning, and boundary-setting; (iii) for those lower in Extraversion - structured peer support and mentoring to enhance social resources. Such proposals can be delivered at the cohort level while allowing optional, individualized components.

Strengths of this study include the use of validated, widely used instruments and the focus on multi-dimensional well-being rather than solely distress [2,3,21,25]. Limitations include the single-institution sample, cross-sectional design, reliance on self-report and the lack of ancillary variables (e.g. resilience, perfectionism, social support, clinical load) that likely mediate or moderate trait-well-being pathways. Future research should adopt longitudinal, multi-cohort designs and incorporate additional psychosocial resources to clarify mechanisms and identify sensitive periods for intervention.

### 4.1. Comparison with Prior Evidence and Mechanisms

The current findings align with the broader literature associating higher Conscientiousness and Extraversion and lower Neuroticism, with better well-being [5,11,15,17,20,21]. Mechanistically, Conscientiousness may enhance perceived control and reduce chaos, Extraversion may amplify social resource recruitment and positive affect, and Neuroticism may lower thresholds for threat

appraisal, sustain rumination and erode self-acceptance. Agreeableness and Openness show selective links - relational and growth-oriented - consistent with their thematic cores.

In medical education contexts, the salience of mastery, purpose and growth is intuitive: curricula impose structured milestones, yet clinical learning injects uncertainty [6,7,9,10,11]. Traits that stabilize goal pursuit and emotional regulation likely pay dividends in uncertain environments. The small negative association between Agreeableness and autonomy invites nuanced interpretation: interpersonal compliance can coexist with a lower sense of independent agency in hierarchical training environments.

#### *4.2. Trait-Informed, Tiered Prevention within Medical Curricula*

A tiered approach aligns universal skill-building with selective and indicated supports [8, 10, 11, 21, 26, 27]. Universal modules might address time management, study planning, cognitive restructuring for unhelpful perfectionism and peer communication skills. Selective supports could target students with high Neuroticism (emotion regulation, mindfulness-based attention training, rumination-focused CBT skills), while indicated supports could offer brief, structured coaching for students with lower Conscientiousness (implementation intentions, deadline design, disengagement from unattainable goals) and social-connectedness plans for lower Extraversion (mentoring dyads, structured peer learning).

Assessment can be low-stakes and formative [8,10,11]. Short, validated screeners embedded in orientation or early courses can help students self-identify strengths and blind spots and opt into relevant workshops - preserving autonomy and confidentiality while normalizing help-seeking.

#### *4.3. Environmental Levers and Culture of Learning*

Beyond individual skills, environmental design matters [1,6,7,10,11]. Predictable schedules, transparent expectations and calibrated assessment density support environmental mastery. Psychological safety in small-group learning fosters positive relationships and self-acceptance by reducing the perceived costs of disclosing errors. Reflective practice seminars and values-clarification exercises can sustain a sense of purpose in life and personal growth - key buffers against demoralization. Faculty development that models compassionate standards may counteract perfectionistic norms that disproportionately burden students high in Conscientiousness and Neuroticism.

#### *4.4. Strengths, Limitations and Risk of Bias*

Strengths include the use of validated instruments, coverage of multiple PWB facets rather than distress alone and a coherent, pre-registration-like analytic plan (defined tests mapping to specific hypotheses) [2,3,23,25]. Limitations include the single-institution sample, cross-sectional design (precluding causal inference) and self-report measures that may be influenced by social desirability or transient mood states. The overrepresentation of earlier years could bias upward the average well-being relative to clinically intensive cohorts. Unmeasured variables - resilience, social support, clinical workload and perfectionism - likely act as mediators or moderators of traits-well-being pathways.

Generalizability is best to similar public medical schools with comparable curricular structures [6,7,9,10,11]. Future research should adopt longitudinal, multi-cohort designs, include mechanistic mediators and test brief, trait-matched interventions using randomized or quasi-experimental designs embedded in routine teaching.

#### *4.5. Future Directions*

Three priorities emerge. First, track transitions into clinically rich years to map when and for whom well-being erodes, identifying sensitive windows for prevention. Second, test micro-interventions (e.g. 2-3 session modules) targeting emotion regulation and planning skills with trait-

by-treatment interaction analyses. Third, develop pragmatic dashboards that integrate brief trait and well-being indicators for student self-monitoring, accompanied by opt-in resources rather than compulsory programming.

## 5. Conclusions

Among medical students, personality traits are closely related to psychological well-being [11,17,20,21]. Lower Neuroticism and higher Conscientiousness and Extraversion are associated with better functioning across Ryff's dimensions and globally. Medical schools can leverage this knowledge to implement screening-informed, tiered preventive strategies that strengthen adaptive skills, social connectedness and effective self-management, especially during transitions to clinically intensive stages of training.

### 5.1. Consolidated Conclusions

In a cohort of medical students, global PWB and its eudaimonic facets align systematically with broad personality traits. Conscientiousness and Extraversion contribute positively to mastery, purpose, growth and social connectedness, whereas Neuroticism undermines autonomy, mastery and self-acceptance. The observed effect sizes are educationally meaningful and amenable to trait-informed prevention embedded within curricula. A balanced strategy that coordinates individual skills with environmental design offers a feasible route to sustaining well-being through the academic and clinical arc of medical training [8,27,10,11,21].

## 6. Practical Implications for Medical Schools

- Embed brief, longitudinal skill-building in curriculum (planning, cognitive restructuring, mindful attention) with low time cost.
- Offer opt-in, trait-aligned workshops during high-demand periods (e.g. exam blocks, first clinical placements).
- Calibrate assessment density and ensure transparent grading rubrics to bolster environmental mastery.
- Foster mentoring constellations and peer learning circles to enhance positive relations, particularly for lower Extraversion.
- Normalize help-seeking via faculty modeling and explicit messaging that counters perfectionistic stigma.
- Maintain accessible, confidential psychological services with streamlined referral pathways.

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**Institutional Review Board Statement:** The study was conducted in accordance with the Declaration of Helsinki. The Bioethics Committee at Poznan University of Medical Sciences (Komisja Bioetyczna przy Uniwersytecie Medycznym w Poznaniu) waived the requirement for ethics approval and informed consent due to the anonymous, non-interventional nature of the survey with no experimental features.

**Informed Consent Statement:** Participant consent was waived by the Bioethics Committee due to the non-interventional, anonymous survey design.

**Data Availability Statement:** The data presented in this study are available on reasonable request from the corresponding author. The data are not publicly available due to privacy and ethical restrictions.

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