



Personality Traits, Self-Esteem, Psychological Well-Being, Emotional Distress, Substance-Related Behaviours, and Suicidal Ideation Among Young Adults

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Abstract:

Young adulthood is a significant developmental period involving educational transitions, identity development, changing social relationships, and increasing personal responsibilities. This study examined personality traits, self-esteem, psychological well-being, depression, anxiety, stress, substance-related behaviours, and suicidal ideation among young adults. Measures included the Eysenck Personality Questionnaire–Revised Short Form (EPQ-R), Rosenberg Self-Esteem Scale (RSES), WHO-5 Well-Being Index, Depression Anxiety Stress Scales (DASS-21), a substance-related behaviour checklist, DAST-20, and a suicidal-ideation checklist. Descriptive statistics, Pearson correlations, Welch independent-samples t-tests, and Holm adjustment were used. Mean self-esteem was 15.64 (SD = 3.83), mean WHO-5 well-being was 64.08 (SD = 11.46), and mean depression, anxiety, and stress scores were 13.94, 15.28, and 13.54, respectively. Male records had higher Extraversion and substance-related scores; female records had higher Neuroticism, depression, anxiety, and stress scores and lower WHO-5 well-being. After Holm adjustment, group differences were significant for Extraversion, Neuroticism, well-being, all three DASS-21 subscales, and both substance-related measures. Differences in Psychoticism, Lie scale, self-esteem, and suicidal-ideation checklist scores were not significant. Four selected correlations were significant: Neuroticism with anxiety, self-esteem with depression, depression with anxiety, and anxiety with stress.

Keywords: young adults; personality traits; self-esteem; psychological well-being; emotional distress; substance-related behaviours; suicidal ideation.

1. Introduction

Young adulthood is an important developmental stage involving changes in education, employment, interpersonal relationships, identity, and independence. Academic demands, career uncertainty, social expectations, and changing responsibilities may influence psychological adjustment. Examining several psychological domains together can provide a broader account of functioning than relying on a single measure.

The global burden is not limited to diagnosed disorders. Subclinical symptoms, reduced well-being, difficulties in social functioning, and harmful coping behaviours may also affect study engagement and quality of life. Screening tools can help researchers describe these domains, but questionnaire scores and clinical diagnoses answer different questions. A sound interpretation therefore distinguishes population burden, individual symptom scores, functional impact, and the need for professional assessment.

Global estimates also require careful interpretation. Prevalence figures depend on the age range studied, diagnostic definitions, data sources, statistical modelling, and the period covered. Estimates for people aged 10–24 years, for example, include adolescents as well as young adults, whereas studies restricted to university students represent a narrower group. Such figures are useful for situating a research question, but they should not be treated as directly comparable with scores from self-report instruments administered in a single educational setting.

Young people's mental health should be understood in relation to both individual vulnerabilities and the social contexts in which development occurs. Educational transitions, financial pressures, family expectations, changing peer relationships, digital communication, and uncertainty about future employment can operate simultaneously. These influences do not affect every person in the same way; their effects may depend on available support, prior experiences, coping resources, and access to services. Consequently, population-level estimates establish the importance of the issue but do not explain the psychological profile of any particular student.

1.1 Global burden of mental health problems

Young adulthood is an important developmental stage involving changes in education, employment, interpersonal relationships, identity, and independence. Academic demands, career uncertainty, social expectations, and changing responsibilities may coincide with changes in psychological well-being and health-related behaviour. The present study therefore examines several distinct psychological domains and interprets each measure according to its purpose and scoring framework.

A Global Burden of Disease analysis estimated that 94.1 million young adults experienced mental disorders globally in 2021, corresponding to a prevalence of 16.1%; anxiety disorders and depressive disorders were estimated at 5.80% and 4.79%, respectively (Zhao et al., 2026). A separate analysis of people aged 10–24 estimated approximately 278.98 million prevalent cases of mental disorders in 2021, illustrating the substantial burden across adolescence and young adulthood (Wang et al., 2025). These estimates use defined epidemiological categories and should not be equated directly with questionnaire scores in a university sample.

Research among students is most useful when it reports the sampling procedure, participant characteristics, assessment tools, scoring methods, and statistical uncertainty transparently. These details allow readers to judge the relevance of the findings and understand which conclusions can reasonably be generalised. They are especially important when findings concern sensitive topics such as substance-related behaviours or suicidal ideation.

National survey estimates should not be interpreted as campus-specific rates. A national sample includes people with different ages, occupations, levels of education, and living circumstances. A university study, in contrast, typically samples a comparatively selected population. Differences in sampling, measures, time frames, and case definitions mean that national estimates provide context rather than a direct benchmark for a particular campus.

India's mental-health context is shaped by substantial social, linguistic, economic, and geographical diversity. Students attending higher-education institutions may experience academic competition, family expectations, relocation, financial concerns, and pressure to establish a career. At the same time, university settings can offer peer networks, counselling services, faculty support, and opportunities for early identification of distress. The balance between stressors and protective resources may differ across institutions and individual circumstances.

1.2 Mental health in India

The National Mental Health Survey of India 2015–2016 reported current mental morbidity of 10.6% and lifetime prevalence of 13.7% in the surveyed population (NIMHANS, 2016). These estimates provide national context but are not specific prevalence estimates for university students. A systematic review and meta-analysis of psychiatric disorders in India further demonstrated that estimates vary according to the population, study methods, geographical coverage, and diagnostic criteria used (Dhiman et al., 2023).

The WHO-5 is intentionally brief, which makes it practical in survey research and multi-instrument assessment. Its brevity can reduce participant burden, but it also means that it provides a broad indicator rather than a detailed account of all mental-health domains. The transformed 0–100 score is useful for presentation because it places the score on a percentage-like scale, but it should not be interpreted as a literal percentage of mental health or as a diagnosis. Topp et al. (2015) reviewed evidence for its use across multiple settings.

Self-esteem and well-being are related but conceptually distinct. Self-esteem concerns a person's general evaluation of their worth, whereas subjective well-being concerns how they evaluate or experience their current life and emotional state. A person may report relatively positive self-evaluation while experiencing a period of low well-being, or may experience positive well-being without endorsing especially high global self-esteem. Using separate measures allows these constructs to be described without assuming that they are interchangeable.

A personality questionnaire does not classify a person as psychologically healthy or unhealthy by itself. Scores are continuous indicators and require interpretation in relation to the measure, population, and purpose of assessment. A higher score on one dimension is not automatically better or worse than a lower score. Researchers should avoid treating separate EPQ-R dimensions as a single composite personality score unless a specific validated scoring procedure supports that decision.

Personality assessment can contribute to a study of young adults because relatively stable individual differences may be associated with how people respond to challenges, seek social support, and interpret stressful situations. Extraversion broadly concerns sociability and positive engagement with the external environment, while Neuroticism concerns the tendency to experience negative affect. Psychoticism, as operationalised in the EPQ-R tradition, represents a separate dimension and should be interpreted according to the instrument's theoretical and psychometric framework. The Lie scale is generally treated as an indicator of socially desirable responding rather than a direct measure of a personality disorder.

1.3 Personality, self-esteem, and well-being

Personality traits represent relatively enduring patterns of thinking, feeling, and behaving. Eysenck's framework includes Extraversion, Neuroticism, and Psychoticism, and the EPQ-R also contains a Lie scale (Eysenck & Eysenck, 1991). The short-form EPQ-R has been examined for factor structure and reliability, with findings indicating that psychometric performance may differ across dimensions and populations (Aluja et al., 2003).

Self-esteem refers to an individual's overall evaluation of personal worth. The Rosenberg Self-Esteem Scale is a widely used measure of global self-esteem (Rosenberg, 1965). A 2025 COSMIN-based meta-analysis among children and adolescents reported pooled internal consistency of

approximately .79, although the estimate should not be assumed to apply to every population or translation (Greco et al., 2025). The WHO-5 Well-Being Index is a five-item measure of subjective well-being; its psychometric evidence and applications were reviewed by Topp et al. (2015).

These distinctions are important when several tools are administered in the same study. Measures differ in purpose, length, scoring, and psychometric evidence. Some tools are established standardised questionnaires, while others are educational or behavioural checklists for which reliability and validity information may not be reported in the source manual. Researchers should describe these differences openly and avoid implying that all instruments have the same evidential status.

Suicidal ideation is a particularly sensitive domain because a group-level statistic cannot determine whether a specific individual is safe. Checklist indicators may support structured enquiry, but a score alone cannot replace direct assessment of current thoughts, intent, plans, access to means, protective factors, and immediate support needs. Ethical research must have a clear plan for responding to disclosures and should not treat the absence of a high checklist score as proof that no risk exists.

Substance-related behaviour can be examined through more than one assessment approach. A behavioural checklist may record observable changes or indicators that warrant follow-up, whereas a standardised screening tool such as DAST-20 focuses on problems associated with drug use. These measures may overlap but need not produce identical scores because their content and scoring frameworks differ. Screening results should be used to guide further assessment, not to make a diagnosis without considering the individual's history and context.

Depression, anxiety, and stress are often studied together because they can co-occur, yet they are not identical constructs. The DASS-21 separates them into three subscales, allowing the researcher to examine whether one dimension is more prominent than another. Because each subscale contains seven items, raw scores are doubled when applying the conventional severity bands derived from the longer DASS. Severity labels describe questionnaire ranges and should not be equated with a clinical diagnosis or a confirmed disorder prevalence rate (Lovibond & Lovibond, 1995).

1.4 Emotional distress, substance-related behaviour, and suicidal ideation

The DASS-21 assesses symptoms associated with depression, anxiety, and stress (Lovibond & Lovibond, 1995). Its subscale scores are self-reported symptom measures and do not independently establish a clinical diagnosis. The Drug Abuse Screening Test was developed to identify problems associated with drug misuse (Skinner, 1982). Skinner reported internal consistency of .92 for the original DAST in a clinical treatment sample; this value should not automatically be transferred to the DAST-20 or to university students. Suicidal-ideation indicators require particularly careful interpretation, and a checklist score cannot replace individualised risk assessment.

The specific objectives were to: (a) summarise personality, self-esteem, well-being, emotional-distress, substance-related, and suicidal-ideation scores; (b) describe the distribution of DASS-21 severity bands; (c) examine selected Pearson correlations; (d) compare male and female groups using independent-samples tests; and (e) interpret the magnitude and uncertainty of observed differences while accounting for multiple comparisons.

The study's main contribution is its combined description of several assessment domains and its comparison of selected scores between male and female groups. The design is cross-sectional, so the analysis is concerned with patterns of scores and associations at one point in time rather than changes over time. The objectives are descriptive and associational; they do not presume that personality traits cause emotional distress or that gender itself explains individual psychological outcomes.

1.5 Rationale and objectives

- To examine psychological well-being and emotional distress among young adults.
- To explore associations among personality traits, self-esteem, substance-related behaviours, and suicidal ideation.
- To examine gender differences in the measured psychological and behavioural variables.

Objectives

1. To assess personality traits, self-esteem, and psychological well-being.
2. To examine depression, anxiety, and stress.
3. To assess substance-related behaviours and suicidal ideation.
4. To examine correlations among the study variables.
5. To compare male and female groups on the measured variables.

2. Methodology

2.1 Dataset and design

The study employed a quantitative, cross-sectional design. The sample comprised 100 undergraduate (UG) and postgraduate (PG) students from Apeejay Stya University, Sohna, Gurugram, Haryana. Data were analysed using descriptive statistics, Pearson's correlation, and independent-samples t-tests to examine psychological variables and gender differences.

The EPQ-R dimensions were analysed separately because Extraversion, Neuroticism, Psychoticism, and the Lie scale assess different characteristics. The RSES total was treated as an indicator of global self-esteem, and the WHO-5 transformed score as an indicator of subjective well-being. DASS-21 depression, anxiety, and stress scores were interpreted as symptom-severity indicators. The substance checklist and suicidal-ideation checklist were treated as counts of endorsed indicators rather than diagnostic outcomes.

Reliability refers to the consistency of scores, while validity concerns whether the evidence supports the intended interpretation and use of those scores. Neither is a permanent property that can be assumed to apply identically to every sample. A reliability coefficient reported in a clinical sample or in another country provides useful background but does not replace examination of the measure in the current language and population when such examination is feasible.

Across the assessment battery, scores should be calculated according to the instructions for each specific version. Reverse-keyed items must be recoded before totals are computed, and separate subscales should remain separate where the instrument does not prescribe a single total. The scoring procedure should be checked before analysis because an error in reverse scoring, transformation, or missing-item handling can change means, correlations, and group comparisons.

2.2 Psychological assessment tools

The Eysenck Personality Questionnaire–Revised (EPQ-R), developed by H. J. Eysenck and S. B. G. Eysenck, assesses Extraversion, Neuroticism, Psychoticism, and a Lie scale. The 48-item short form used here contains 12 items per scale, scored separately. Reliability and validity findings vary by scale and population (Eysenck et al., 1985; Eysenck & Eysenck, 1991; Aluja et al., 2003).

The Rosenberg Self-Esteem Scale (RSES), developed by Rosenberg (1965), contains 10 items measuring global self-esteem. Its reliability and construct validity have been examined across populations; estimates may vary by age, language, and sample (Greco et al., 2025).

The WHO-5 Well-Being Index contains five positively worded items assessing subjective well-being. The raw score ranges from 0–25 and is multiplied by four to produce a 0–100 score; higher scores indicate better well-being (Topp et al., 2015).

The Depression Anxiety Stress Scales–21 (DASS-21), developed by Lovibond and Lovibond (1995), contains 21 items across depression, anxiety, and stress subscales. Each subscale has seven items; scores are doubled for comparison with the original DASS severity bands. Scores indicate symptom severity, not diagnosis.

The 16-item substance-abuse checklist is listed in the IGNOU Practical Manual, Practical 2, Section 2.7; the cited section does not provide reliability or validity coefficients (IGNOU, n.d.).

The Drug Abuse Screening Test (DAST) was developed by Skinner (1982) to screen for drug-related problems. The original 28-item version showed high internal consistency in a clinical sample; this evidence should not automatically be generalised to every shorter version or population.

The 17-item suicidal-ideation checklist is listed in the IGNOU Practical Manual, Practical 2, Section 2.3(B); the cited section does not provide reliability or validity coefficients (IGNOU, n.d.).

Because 12 male–female comparisons were conducted, Holm adjustment was used to reduce the family-wise risk of false-positive findings. Both unadjusted and adjusted p-values are shown so readers can distinguish the initial test result from the result after accounting for multiple comparisons. Statistical significance does not by itself establish practical importance, and a non-significant result should not be interpreted as proof that the groups are identical.

Descriptive results are reported as means and standard deviations, together with observed score ranges. Pearson's correlation coefficient (r) describes the direction and strength of a linear association between two continuous variables; its value ranges from -1 to $+1$. Welch's t-test compares two independent group means without assuming equal population variances. Cohen's d provides a standardised estimate of the difference, while confidence intervals communicate uncertainty around the estimated contrast.

2.3 Statistical analysis

Descriptive statistics (means, standard deviations, minimums, and maximums) summarised the measured variables. Pearson's product–moment correlation examined linear associations between selected variables. Welch's independent-samples t-tests compared male and female records without

assuming equal variances. Holm adjustment was applied across the 12 gender comparisons to reduce the risk of false-positive findings due to multiple testing.

3. Results

The results are presented in five stages: sample characteristics, descriptive statistics, DASS-21 symptom-severity distribution, correlations among selected variables, and male–female group comparisons. Welch independent-samples t-tests were used for group comparisons, and the Holm procedure was applied to the 12 comparisons to control the family-wise error rate.

Age and gender were summarised before the outcome measures were examined. The descriptive sample table provides context for interpreting the remaining results, particularly because the gender comparisons use only the male and female categories. The five records labelled “Prefer not to say” were retained in full-sample descriptive statistics but not included in the two-group comparisons.

3.1 Sample characteristics

Table 1. Sample characteristics

Characteristic	Summary
Age (years)	21.44 (2.36)
Male	50 (50.0%)
Female	45 (45.0%)
Prefer not to say	5 (5.0%)
Total	100 (100%)

Interpretation. The dataset comprised 100 records with a mean age of 21.44 years ($SD = 2.36$; range = 18–25). Fifty records were labelled male, 45 female, and five “Prefer not to say.” The latter five remained in the full-sample descriptive analyses but were excluded from the male–female t-tests; consequently, group-comparison analyses used $n = 50$ and $n = 45$.

The scores should be interpreted within their own scales. For example, a mean DASS-21 score cannot be compared numerically with a WHO-5 score to conclude that one construct is more prevalent, because the measures have different ranges, item content, and interpretive conventions. The appropriate question is whether each score’s distribution and group pattern are meaningful within the framework of the corresponding instrument.

The mean and standard deviation provide complementary information: the mean indicates the central score level, while the standard deviation indicates how dispersed scores are around that level. Minimum and maximum values show the observed range, although they do not reveal the complete shape of a distribution. Histograms and boxplots supplement the numerical summaries by showing clustering, spread, and possible extreme values.

3.2 Descriptive statistics

Table 2. Descriptive statistics of the psychological and behavioural variables

Variable	N	Mean	SD	Minimum	Maximum
EPQ-R Extraversion	100	5.78	1.66	1	10
EPQ-R Neuroticism	100	6.25	1.82	2	10
EPQ-R Psychoticism	100	5.83	1.52	2	10
EPQ-R Lie scale	100	5.85	1.89	2	10
Self-esteem (RSES)	100	15.64	3.83	6	26
WHO-5 well-being	100	64.08	11.46	32	92
DASS-21 Depression	100	13.94	5.22	0	28
DASS-21 Anxiety	100	15.28	6.24	0	36
DASS-21 Stress	100	13.54	5.59	0	28
Substance checklist count	100	2.17	1.38	0	6

Variable	N	Mean	SD	Minimum	Maximum
DAST-20	100	2.85	1.57	0	6
Suicidal-ideation checklist count	100	0.53	0.61	0	2

Interpretation. The mean WHO-5 score was 64.08 (SD = 11.46), and the mean self-esteem score was 15.64 (SD = 3.83). Mean DASS-21 scores were 13.94 for depression, 15.28 for anxiety, and 13.54 for stress. The substance checklist mean was 2.17 of 16 indicators, while the DAST-20 mean was 2.85 of 20. These instruments use different scoring ranges and assess distinct constructs; their means should not be compared as if they shared a common metric. WHO-5 scores reflect subjective well-being, whereas DASS-21 scores represent self-reported symptom severity, not clinical diagnoses (Topp et al., 2015; Lovibond & Lovibond, 1995).

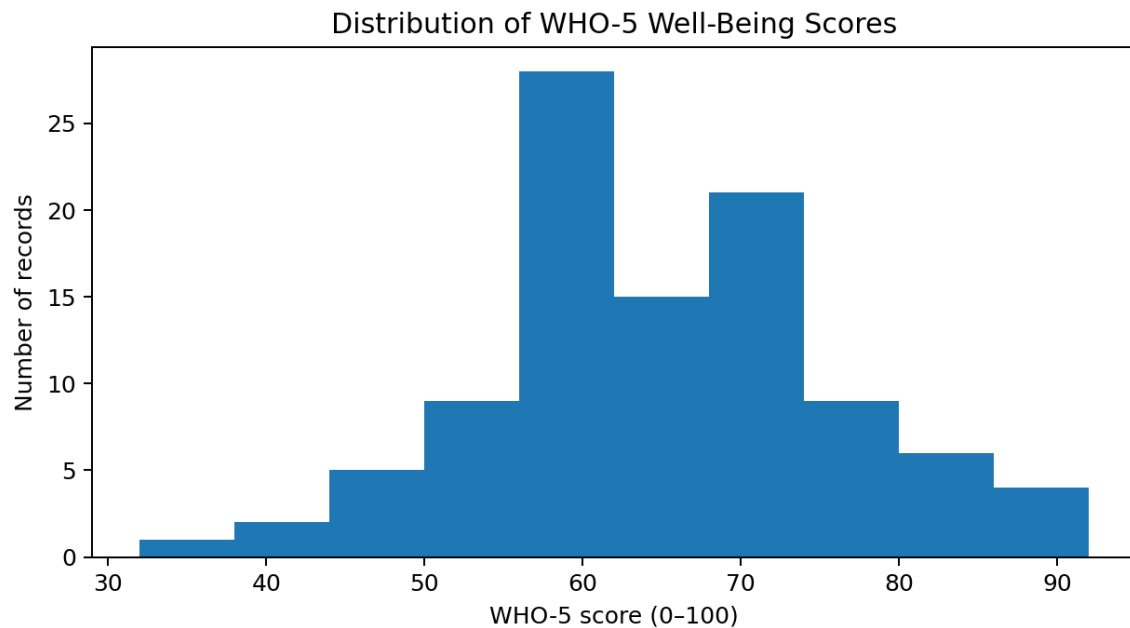


Figure 1. Distribution of WHO-5 well-being scores on the transformed 0–100 scale.

Interpretation of Figure 1. WHO-5 scores ranged from 32 to 92, showing variability in reported well-being. The histogram gives a visual view of the score distribution; it should not be used alone to classify individual students or to establish a diagnosis (Topp et al., 2015).

The observed percentages depend on the chosen DASS-21 cut-points and on doubling each seven-item subscale score before applying the conventional categories. If a different scoring convention or version were used, the distribution could change. Consistent scoring and explicit reporting are therefore essential when comparing results across studies (Lovibond & Lovibond, 1995).

Severity bands provide a more accessible description of the distribution than means alone, but categorisation also loses information. Two people placed in the same band can have different scores, and people close to a cut-point may be assigned to adjacent categories despite similar responses. For this reason, the categorical presentation is best read alongside the continuous descriptive statistics and should not replace them.

3.3 DASS-21 symptom-severity distribution

Table 3. DASS-21 severity bands by symptom domain

Subscale	Normal	Mild	Moderate	Severe	Extremely severe
Depression	18 (18%)	29 (29%)	46 (46%)	5 (5%)	2 (2%)
Anxiety	6 (6%)	11 (11%)	32 (32%)	20 (20%)	31 (31%)
Stress	54 (54%)	30 (30%)	14 (14%)	2 (2%)	0 (0%)

Note. Bands use conventional DASS-21 cut-points after doubling each seven-item subscale total. These bands describe questionnaire scores and are not equivalent to clinical diagnoses (Lovibond & Lovibond, 1995).

Interpretation. Anxiety had the highest concentration of scores in the moderate-or-higher bands: 83% of records were classified in the moderate, severe, or extremely severe bands, including 51% in the severe or extremely severe bands. For depression, 53% were in the moderate-or-higher bands. In contrast, 54% of stress scores were in the normal band and 16% were in the moderate-or-higher bands. The pattern indicates that anxiety and depression scores were more prominent than stress scores in this dataset. These classifications should be understood as screening descriptions rather than prevalence estimates of diagnosed anxiety or depressive disorders (Lovibond & Lovibond, 1995).

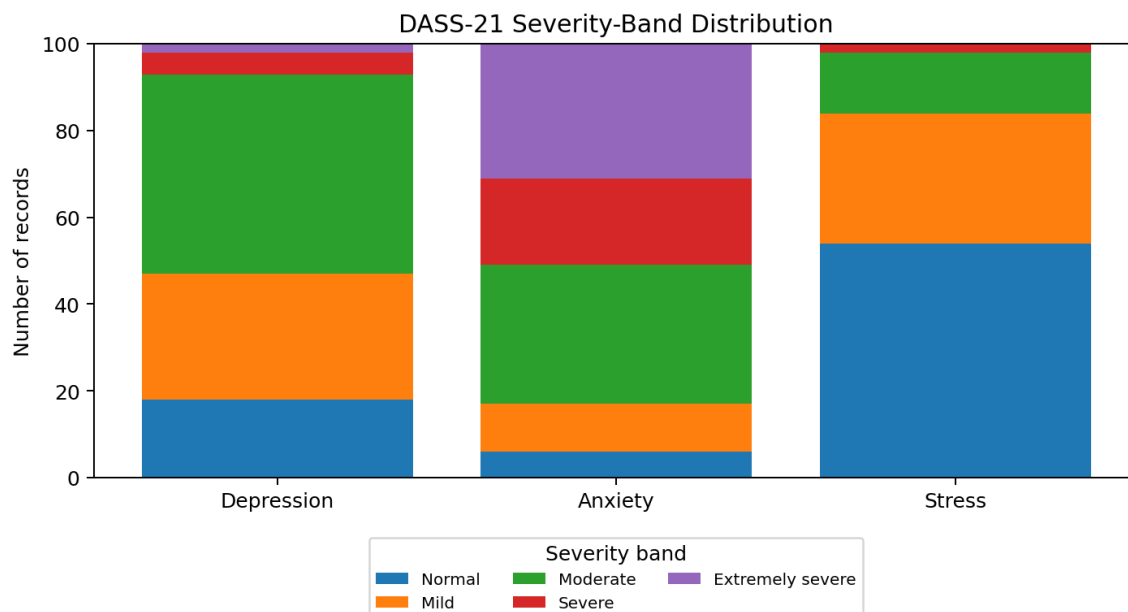


Figure 2. DASS-21 severity-band distribution across depression, anxiety, and stress.

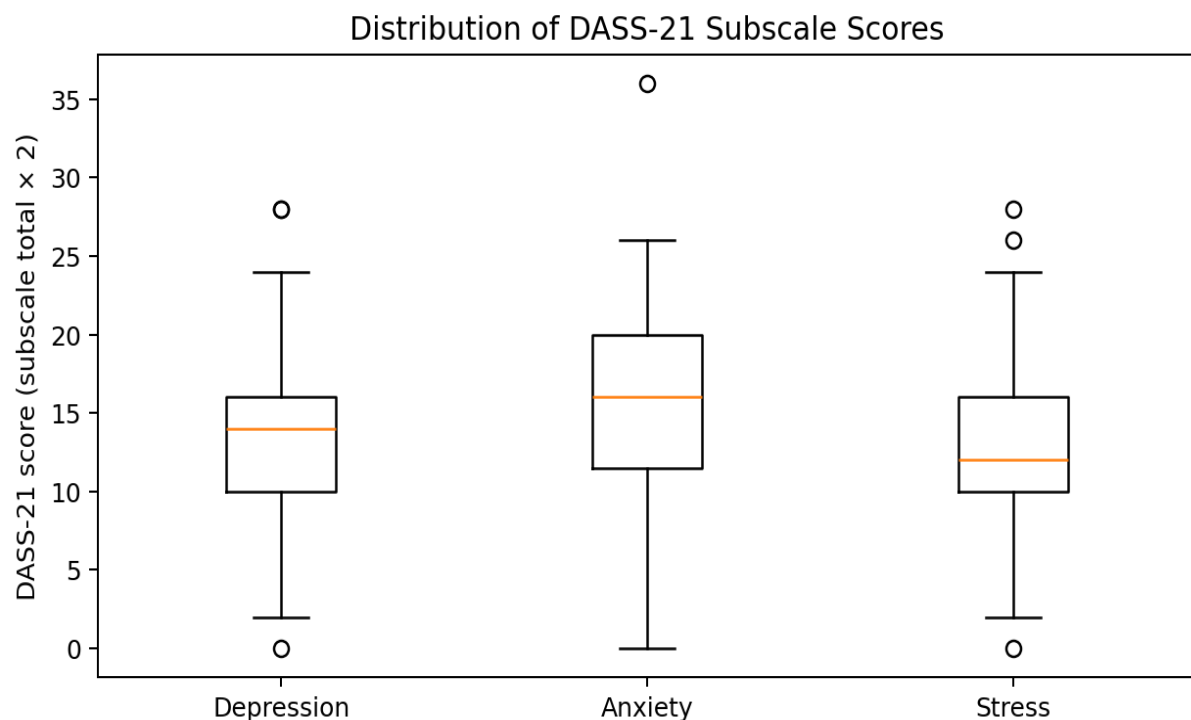


Figure 3. Boxplots showing the distribution of DASS-21 depression, anxiety, and stress scores.

Interpretation of Figures 2–3. The severity-band chart shows the proportion of records across the score categories, while the boxplots display the medians, spread, and possible outliers. Both figures show higher anxiety scores and broader upper-range variation compared with stress. The DASS-21 subscales should nevertheless be interpreted separately because they measure related but distinct symptom dimensions (Lovibond & Lovibond, 1995).

The negative association between self-esteem and depression suggests that higher self-esteem scores tended to accompany lower depression scores in these data. This is an association, not proof that increasing self-esteem would necessarily reduce depression. Longitudinal or intervention designs would be needed to test temporal or causal claims more directly.

The positive association between Neuroticism and anxiety is conceptually plausible because both measures relate, in different ways, to negative emotionality. Nevertheless, the association should not be interpreted as evidence that one score causes the other. Shared self-report method, overlapping item content, current circumstances, and unmeasured variables may contribute to the observed relationship.

The magnitude of a correlation is distinct from its statistical significance. A small correlation may reach statistical significance in a large sample, whereas a moderate correlation may fail to reach the threshold in a small sample. Correlation coefficients also describe linear relationships; a non-linear relationship may not be adequately represented by Pearson's r . Scatterplots and inspection of the underlying distributions are therefore useful companions to the correlation table.

3.4 Correlation analysis

Table 4. Pearson correlations among selected psychological and behavioural variables

Variable 1	Variable 2	Pearson r	p
EPQ-R Neuroticism	DASS-21 Depression	0.095	.346
EPQ-R Neuroticism	DASS-21 Anxiety	0.344	< .001
EPQ-R Neuroticism	DASS-21 Stress	0.155	.125
EPQ-R Extraversion	WHO-5 well-being	0.037	.715
Self-esteem (RSES)	DASS-21 Depression	-0.272	.006
Self-esteem (RSES)	WHO-5 well-being	-0.010	.918
WHO-5 well-being	DASS-21 Anxiety	-0.047	.645
DASS-21 Depression	DASS-21 Anxiety	0.240	.016
DASS-21 Anxiety	DASS-21 Stress	0.297	.003
DAST-20	Substance checklist count	0.110	.275
DASS-21 Depression	Suicidal-ideation checklist count	0.092	.360

Interpretation. Neuroticism was positively associated with anxiety ($r = .344$, $p < .001$), indicating that higher neuroticism scores tended to occur alongside higher anxiety symptom scores. Self-esteem was negatively associated with depression ($r = -.272$, $p = .006$). Depression and anxiety ($r = .240$, $p = .016$) and anxiety and stress ($r = .297$, $p = .003$) were positively associated. The remaining selected correlations did not reach $p < .05$. These coefficients indicate associations rather than causal effects; the findings are also consistent with treating personality, well-being, and symptom measures as distinct assessment domains (Eysenck & Eysenck, 1991; Rosenberg, 1965; Topp et al., 2015; Lovibond & Lovibond, 1995).

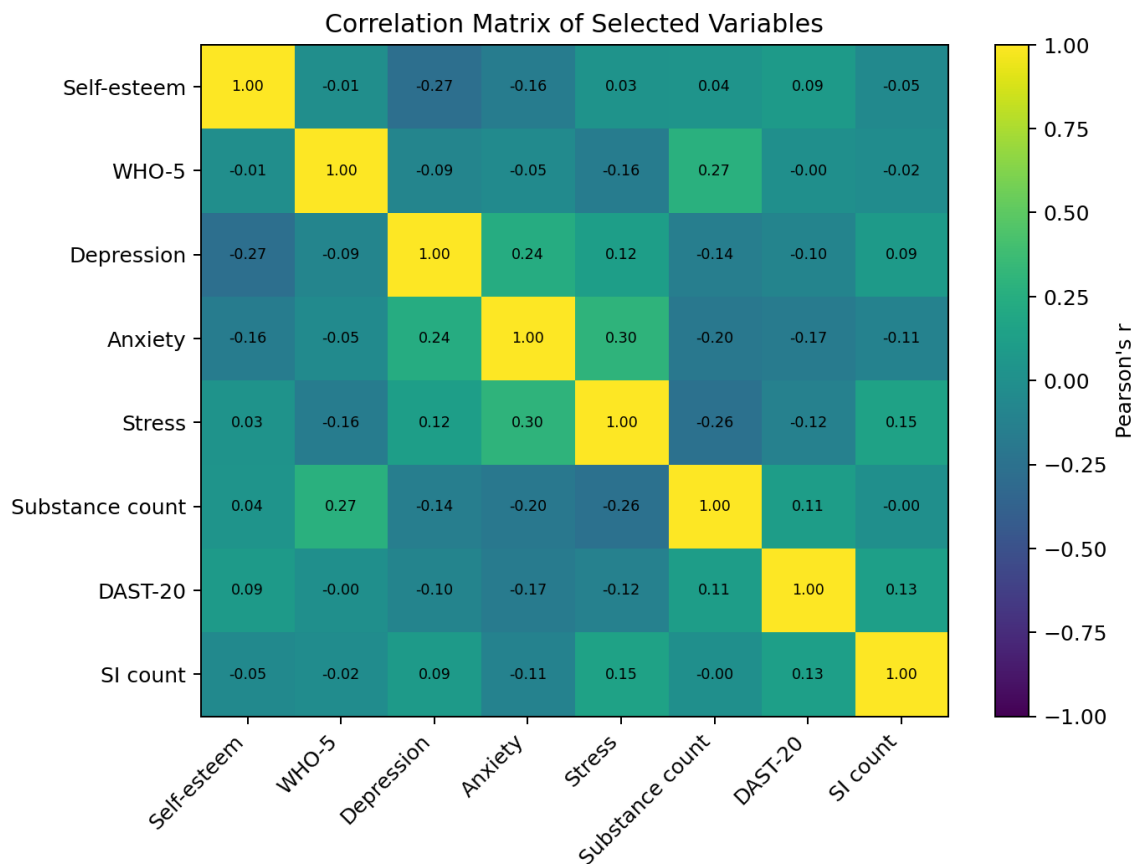


Figure 4. Correlation heatmap for selected psychological and behavioural variables.

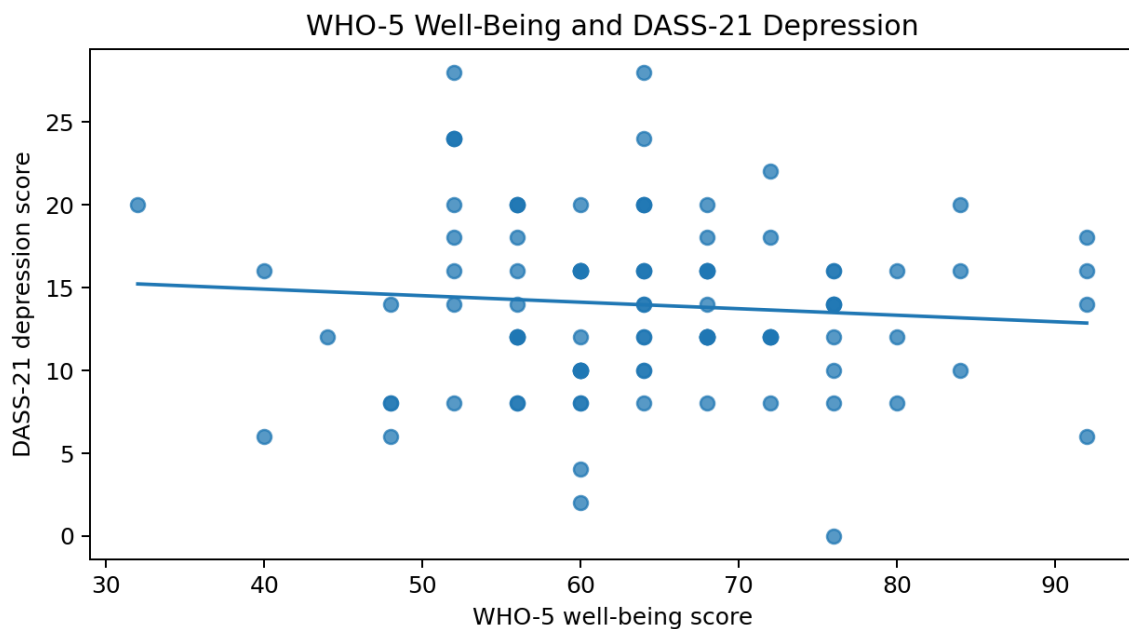


Figure 5. Scatterplot of WHO-5 well-being and DASS-21 depression scores.

Interpretation of Figures 4–5. The heatmap shows the direction and magnitude of the selected correlations. The scatterplot shows considerable variation around the fitted trend, which is consistent with the small, non-significant correlation between well-being and depression in this dataset. A visual trend should not be interpreted as evidence of causation.

The results concern group averages and do not predict the score or needs of any individual student. There is likely to be variation within each group, and group distributions may overlap even when the difference between means is statistically significant. For applied practice, individual assessment and context remain more important than assigning expectations to a student based on group membership.

The male and female groups showed different patterns across the measured domains. This is important because the results do not support a single, global statement that one group has better psychological functioning. The direction varied by construct: the male group had higher Extraversion and substance-related scores, while the female group had higher Neuroticism and emotional-distress scores and lower well-being scores.

Group means should be considered together with standard deviations, effect sizes, confidence intervals, and adjusted p-values. A difference in means indicates the direction of the contrast, while the effect size expresses the difference relative to the variability of scores. The adjusted p-value indicates whether the evidence remains statistically significant after accounting for the family of tests. No single statistic provides a complete interpretation on its own.

3.5 Male–female comparisons

Table 5. Welch independent-samples t-tests comparing male and female groups

Variable	Male M (SD)	Female M (SD)	M–F diff.	t (df)	p	Holm p	Cohen d
EPQ-R Extraversion	6.54 (1.42)	4.93 (1.47)	1.61	5.41 (91.2)	< .001	< .001	1.11
EPQ-R Neuroticism	5.48 (1.47)	7.07 (1.85)	-1.59	-4.59 (84.0)	< .001	< .001	-0.95
EPQ-R Psychoticism	5.98 (1.46)	5.73 (1.51)	0.25	0.81 (91.2)	.423	.845	0.17
EPQ-R Lie scale	6.08 (1.82)	5.58 (1.88)	0.50	1.32 (91.2)	.189	.568	0.27
Self-esteem (RSES)	16.24 (3.98)	14.96 (3.75)	1.28	1.62 (92.8)	.109	.435	0.33
WHO-5 well-being	67.20 (11.60)	61.16 (10.36)	6.04	2.68 (93.0)	.009	.043	0.55
DASS-21 Depression	12.36 (4.86)	15.73 (5.15)	-3.37	-3.28 (90.6)	.001	.010	-0.68
DASS-21 Anxiety	12.32 (4.90)	18.44 (6.19)	-6.12	-5.30 (83.7)	< .001	< .001	-1.10
DASS-21 Stress	11.60 (5.00)	15.60 (5.18)	-4.00	-3.82 (91.2)	< .001	.002	-0.79
Substance checklist count	2.66 (1.38)	1.56 (1.14)	1.10	4.27 (92.3)	< .001	< .001	0.87
DAST-20	3.32 (1.36)	2.29 (1.67)	1.03	3.27 (85.0)	.002	.010	0.68
Suicidal-ideation checklist count	0.54 (0.58)	0.51 (0.63)	0.03	0.23 (89.9)	.817	.845	0.05

Interpretation. Significant differences remained after Holm correction for Extraversion, Neuroticism, WHO-5 well-being, all three DASS-21 subscales, substance-checklist count, and DAST-20 score. Male records showed higher Extraversion ($M = 6.54$ vs. 4.93 ; adjusted $p < .001$), higher substance-checklist counts (2.66 vs. 1.56 ; adjusted $p < .001$), and higher DAST-20 scores (3.32 vs. 2.29 ; adjusted $p = .010$). Female records showed higher Neuroticism (7.07 vs. 5.48 ; adjusted $p < .001$), and higher depression (15.73 vs. 12.36 ; adjusted $p = .010$), anxiety (18.44 vs. 12.32 ; adjusted $p < .001$), and stress scores (15.60 vs. 11.60 ; adjusted $p = .002$). Female records also had lower WHO-5 well-being (61.16 vs. 67.20 ; adjusted $p = .043$).

Interpretation continued. No statistically significant male–female differences remained for Psychoticism, the Lie scale, self-esteem, or suicidal-ideation checklist count after correction. Thus, the data show a domain-specific pattern rather than a uniform difference across every variable. Epidemiological reports have identified sex-related differences in anxiety and depressive disorders across populations, but prevalence estimates from global studies cannot be directly equated with questionnaire scores in a single university sample (World Health Organization, 2025; Zhao et al., 2026).

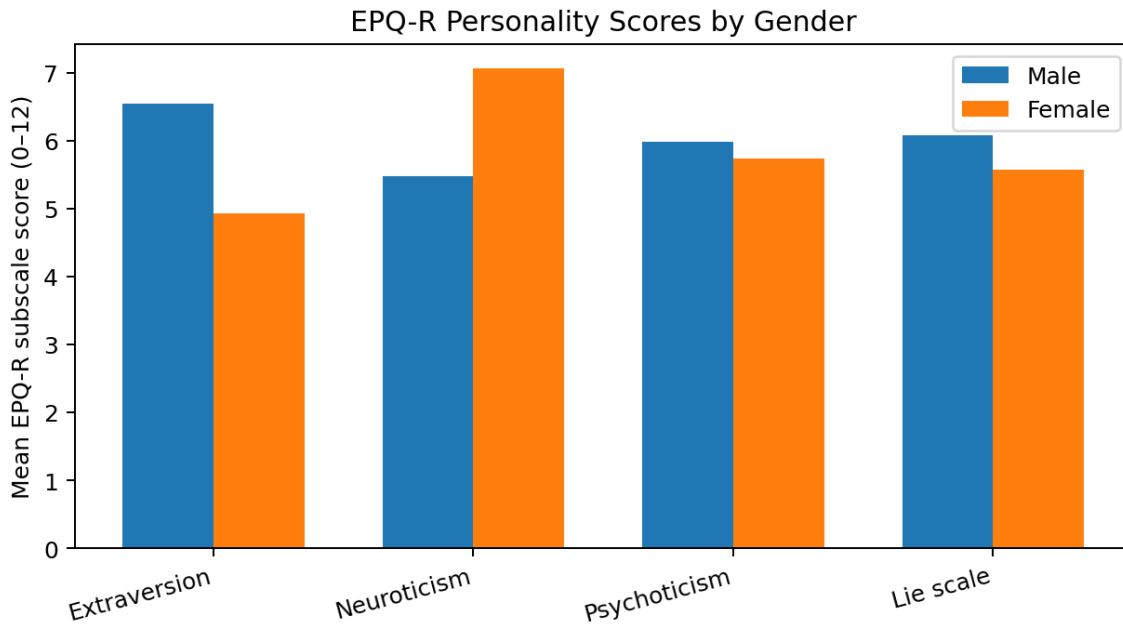


Figure 6. Male–female comparison of the four EPQ-R subscale means.

Interpretation of Figure 6. Male records had a higher mean Extraversion score, whereas female records had a higher mean Neuroticism score. The Psychoticism and Lie-scale means were comparatively similar, matching the non-significant group tests for those two dimensions. The EPQ-R scales represent separate personality dimensions and should not be combined into a single overall score (Eysenck & Eysenck, 1991; Aluja et al., 2003).

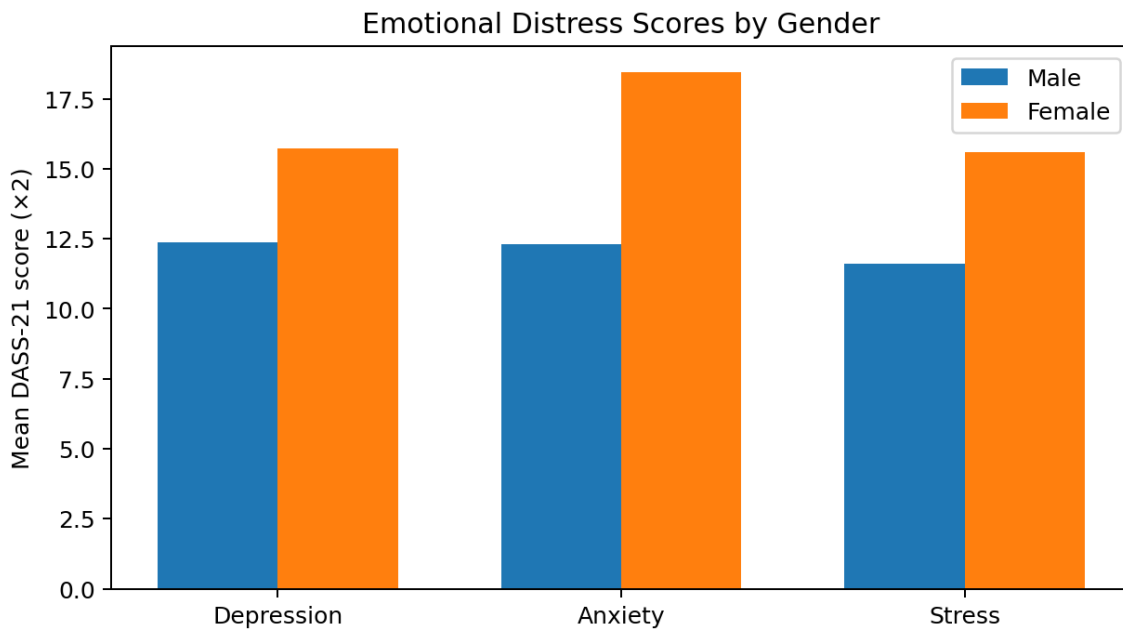


Figure 7. Male–female comparison of mean DASS-21 depression, anxiety, and stress scores.

Interpretation of Figure 7. Female records had higher mean scores on all three DASS-21 subscales, with the largest absolute difference observed for anxiety (6.12 points), followed by stress (4.00 points) and depression (3.37 points). These differences remained statistically significant after Holm correction. The chart communicates group differences, while the table supplies the inferential statistics needed to judge their significance (Lovibond & Lovibond, 1995).

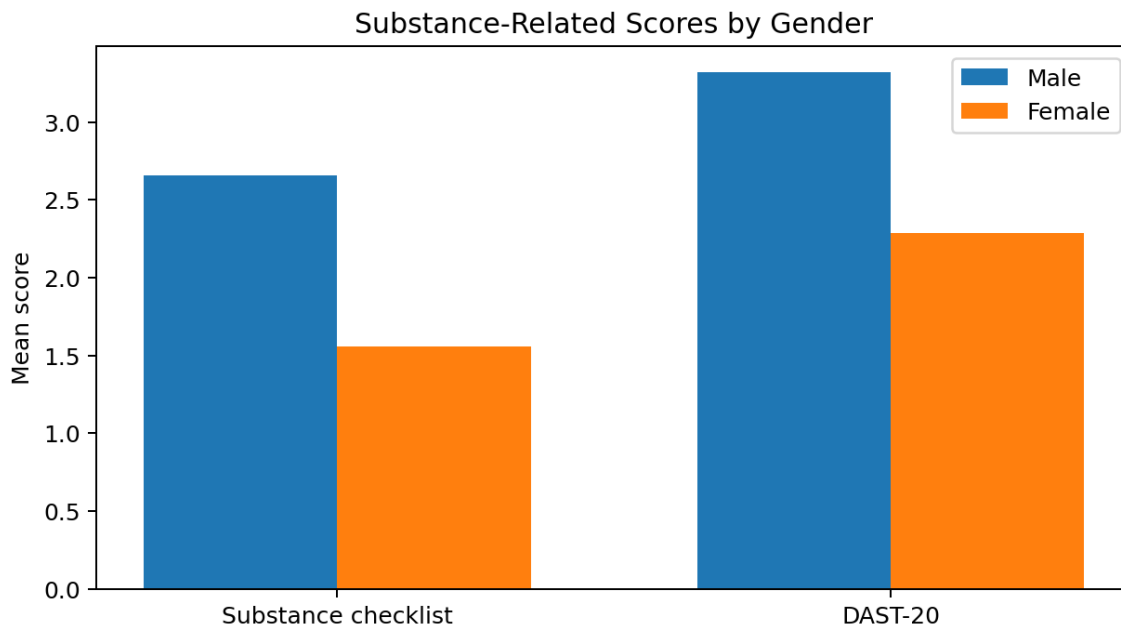


Figure 8. Male–female comparison of substance-checklist and DAST-20 scores.

Interpretation of Figure 8. Male records had a higher mean substance-checklist count and higher mean DAST-20 score. Both differences remained statistically significant after adjustment. The IGNOU checklist records observable behaviours that may have several explanations, while DAST-20 is a screening measure; neither instrument alone establishes a substance-use disorder (Skinner, 1982; Indira Gandhi National Open University, n.d.).

Confidence intervals add information beyond a significance test by indicating a range of values compatible with the observed data under the statistical model. Narrower intervals indicate more precise estimates, whereas wider intervals indicate greater uncertainty. In this analysis, the intervals for adjusted-significant contrasts excluded zero, consistent with the corresponding significance decisions. The intervals should still be interpreted in light of sampling and measurement limitations.

3.6 Significant group differences with confidence intervals

Table 6. Significant gender contrasts (female minus male)

Variable	Mean difference (F–M)	95% CI	Holm-adjusted p	Cohen d (F–M)
EPQ-R Extraversion	-1.61	-2.20 to -1.02	< .001	-1.11
EPQ-R Neuroticism	1.59	0.90 to 2.27	< .001	0.95
WHO-5 well-being	-6.04	-10.52 to -1.57	.043	-0.55
DASS-21 Depression	3.37	1.33 to 5.42	.010	0.68
DASS-21 Anxiety	6.12	3.83 to 8.42	< .001	1.10
DASS-21 Stress	4.00	1.92 to 6.08	.002	0.79
Substance checklist count	-1.10	-1.62 to -0.59	< .001	-0.87
DAST-20	-1.03	-1.66 to -0.40	.010	-0.68

Interpretation. The confidence intervals for each of the eight adjusted-significant outcomes exclude zero, supporting the presence of a group difference in this dataset after accounting for multiple testing. The largest effects were found for anxiety and Extraversion, followed by Neuroticism, substance-checklist count, stress, depression, DAST-20, and WHO-5 well-being. Effect sizes are important because they describe the magnitude of a difference, not merely whether a p-value falls below .05. These estimates should be interpreted with the study's design, instrument limits, and sampling context in mind.

The non-significant suicidal-ideation checklist comparison should be interpreted especially carefully. It means that this group comparison did not provide sufficient statistical evidence of a difference in checklist counts. It does not show that suicidal ideation is absent in either group, and it does not reduce the need to respond appropriately to any individual disclosure or clinical concern.

A hypothesis-wise summary helps connect the statistical output to the study questions. Partial support is appropriate when some outcomes within a broad domain differ but others do not. For example, evidence for differences in Extraversion and Neuroticism does not imply differences in every EPQ-R dimension, and a significant WHO-5 contrast does not imply a significant RSES contrast.

3.7 Hypothesis-wise decisions

Table 7. Summary of hypothesis decisions

Hypothesis	Statistical evidence	Decision
H1: Gender differs on personality dimensions.	Extraversion and Neuroticism differed after correction; Psychoticism and Lie scale did not.	Partially supported.
H2: Gender differs in self-esteem and well-being.	WHO-5 differed after correction; RSES did not.	Partially supported.
H3: Female group reports higher depression, anxiety, and stress.	All three DASS-21 group differences remained significant after Holm correction.	Supported in these comparisons.
H4: Male group has higher substance-related scores.	Both the 16-item checklist count and DAST-20 score were higher for male records after correction.	Supported in these comparisons.
H5: Suicidal-ideation checklist counts differ by gender.	The group means were similar and the comparison was non-significant ($p = .817$; Holm $p = .845$).	Not supported.

Interpretation. The analysis supports some, but not all, of the proposed group differences. The clearest pattern is that female records showed higher scores on Neuroticism and emotional-distress measures, whereas male records showed higher Extraversion and substance-related screening scores. Well-being was higher in the male group, while self-esteem did not differ significantly. The suicidal-ideation checklist comparison did not show a group difference. A non-significant result means that the analysis did not provide sufficient evidence for a difference; it does not prove that the groups are identical.

The findings show a domain-specific pattern rather than a uniform difference favouring one group across all measures. Male records had higher Extraversion and substance-related checklist and DAST-20 scores. Female records had higher Neuroticism and higher depression, anxiety, and stress scores, together with lower WHO-5 well-being. These differences remained significant after Holm correction. In contrast, group differences in Psychoticism, the Lie scale, self-esteem, and suicidal-ideation checklist scores were not statistically significant after adjustment. The results should be interpreted as differences between group means, not as characteristics that apply to every individual.

The EPQ-R findings were specific to Extraversion and Neuroticism: the male group had a higher mean Extraversion score, whereas the female group had a higher mean Neuroticism score. Psychoticism and Lie-scale comparisons were not significant after adjustment. This pattern supports discussing each EPQ-R dimension separately rather than treating personality as a single overall characteristic. The Lie scale concerns response style and should not be interpreted as proof of dishonesty.

Cross-cultural interpretation is also important. Personality terms and item meanings may be understood differently across languages and social contexts. Where translated versions are used, the translation process and evidence for the relevant population should be considered. Future research could examine whether the same factor structure and reliability estimates are observed among undergraduate and postgraduate students in different educational settings (Aluja et al., 2003).

The EPQ-R Lie scale also requires cautious interpretation. It is intended to provide information about response style or socially desirable presentation, not to prove that a respondent has been dishonest. The absence of a significant group difference on this scale indicates that the current comparison did not detect a reliable difference in mean scores; it does not establish that all participants responded without bias.

One possible interpretation of the pattern is that the measured dimensions capture different aspects of psychological functioning rather than a single continuum. Extraversion concerns social engagement and outward activity, while Neuroticism is associated with sensitivity to negative emotional states. Higher mean scores on one dimension do not cancel out or explain scores on another dimension. Researchers should therefore discuss the specific scales rather than using broad labels such as “better personality.”

4.1 Personality Traits

The male group had a higher mean Extraversion score than the female group (6.54 vs. 4.93), whereas the female group had a higher mean Neuroticism score (7.07 vs. 5.48). Both differences remained statistically significant after Holm correction. In contrast, the group differences in Psychoticism and the Lie scale were not significant after adjustment. These findings indicate differences on specific EPQ-R dimensions rather than an overall difference in personality. The Lie scale should be interpreted as an indicator of response style, not as evidence of dishonesty.

The EPQ-R dimensions represent distinct characteristics and should be interpreted separately. Higher Extraversion scores do not necessarily indicate better psychological functioning, and higher Neuroticism scores do not by themselves establish a mental-health disorder. Individual scores also vary within each group; group means should not be used to make assumptions about any particular person.

Cross-cultural interpretation requires caution because item meanings and response patterns can vary across language and social contexts. The findings are best interpreted within the limits of the instrument version and the sample assessed. Further research could examine the psychometric properties of the EPQ-R dimensions in more diverse student populations.

Overall, the personality findings partially support the proposed hypothesis: significant differences were observed for Extraversion and Neuroticism, but not for Psychoticism or the Lie scale.

4.2 Self-Esteem and Psychological Well-Being

The male group had a higher mean WHO-5 well-being score than the female group (67.20 vs. 61.16), and the difference remained significant after Holm correction (adjusted $p = .043$). In contrast, the difference in RSES self-esteem scores (16.24 vs. 14.96) was not statistically significant after adjustment. The findings therefore distinguish subjective well-being from global self-esteem; a significant difference on one measure does not imply a difference on the other.

The WHO-5 is a brief self-report measure of subjective well-being and does not capture every aspect of psychological functioning. The observed mean difference should not be interpreted as evidence that one group is universally happier or healthier. Social support, academic stress, sleep, financial circumstances, and other factors may be relevant to well-being, but these variables were not tested in the reported analyses and cannot be treated as explanations for the present result.

The finding of a significant group difference in WHO-5 scores alongside a non-significant difference in self-esteem highlights the importance of construct-specific interpretation. The hypothesis concerning self-esteem and well-being was therefore partially supported: the well-being comparison was significant, whereas the self-esteem comparison was not.

4.3 Emotional Distress

Female records had higher mean scores on all three DASS-21 subscales. Anxiety showed the largest mean difference (female $M = 18.44$; male $M = 12.32$), followed by stress (15.60 vs. 11.60) and depression (15.73 vs. 12.36). All three differences remained statistically significant after Holm correction. The severity-band distribution also showed that 83% of anxiety scores and 53% of depression scores were in the moderate-or-higher categories, compared with 16% of stress scores. These categories describe questionnaire symptom severity and are not estimates of diagnosed disorders.

The three DASS-21 subscales assess related but distinct symptom dimensions. The stronger group difference for anxiety indicates that anxiety showed the largest contrast among the three measures in this analysis; it does not establish why that difference occurred or mean that it applies to all women or men. The cross-sectional findings do not establish causal explanations, and individual assessment remains necessary.

The results support the hypothesis that female records would have higher depression, anxiety, and stress scores in these comparisons. The interpretation should remain limited to the measured scores and the sample context, rather than being generalised to all young adults.

4.4 Substance-Related Behaviours

The male group had higher scores on the 16-item substance-related checklist ($M = 2.66$, $SD = 1.38$) than the female group ($M = 1.56$, $SD = 1.14$), $t(92.3) = 4.27$, $p < .001$, Holm-adjusted $p < .001$, Cohen's $d = 0.87$. DAST-20 scores were also higher in the male group ($M = 3.32$, $SD = 1.36$) than the female group ($M = 2.29$, $SD = 1.67$), $t(85.0) = 3.27$, $p = .002$, Holm-adjusted $p = .010$, Cohen's $d = 0.68$. Both group differences remained statistically significant after adjustment.

These findings indicate higher scores for the male group on both substance-related measures, but the measures should not be treated as interchangeable or diagnostic. The checklist records endorsed indicators, whereas DAST-20 is a screening measure for drug-related problems. Neither score alone establishes a substance-use disorder. The results support the proposed hypothesis for these two measures, while further individual assessment would be required to understand the meaning of any elevated score.

4.5 Correlations Among Study Variables

Pearson's correlation analysis identified four statistically significant associations: Neuroticism was positively correlated with anxiety ($r = .344$, $p < .001$), self-esteem was negatively correlated with depression ($r = -.272$, $p = .006$), depression was positively correlated with anxiety ($r = .240$, $p = .016$), and anxiety was positively correlated with stress ($r = .297$, $p = .003$). The remaining selected correlations in Table 4 were not statistically significant. These findings indicate associations among selected measures but do not establish causal relationships or the direction of influence.

4.6 Hypotheses and Practical Implications

The hypothesis-wise results provide partial support for the proposed gender differences. Extraversion and Neuroticism differed significantly, whereas Psychoticism and the Lie scale did not. WHO-5 well-being differed significantly, but self-esteem did not. The hypothesis predicting higher female scores on depression, anxiety, and stress was supported in these comparisons, as was the hypothesis predicting higher male scores on both substance-related measures. The hypothesis predicting a gender difference in suicidal-ideation checklist scores was not supported because the comparison was non-significant after Holm correction (adjusted $p = .845$).

The results suggest focused implications for university mental-health support. The higher female-group scores on depression, anxiety, and stress, together with lower WHO-5 well-being, reinforce the value of accessible and confidential support for students reporting distress. The significant associations may inform further assessment and psychoeducation, but they do not show that changing one variable will cause a change in another. Higher male-group scores on both substance-related measures support non-judgmental awareness and appropriate individual screening. The non-significant gender difference in suicidal-ideation checklist scores must not be interpreted as absence of risk in either group. Support and referral decisions should be based on individual assessment rather than group averages.

Pearson's correlation analysis identified significant associations among four pairs of psychological variables. Neuroticism was positively correlated with anxiety ($r = .344, p < .001$). Self-esteem was negatively correlated with depression ($r = -.272, p = .006$). Positive correlations were also observed between depression and anxiety ($r = .240, p = .016$) and between anxiety and stress ($r = .297, p = .003$). The remaining seven correlations reported in Table 4 were not statistically significant ($p > .05$). Overall, these findings indicate associations among selected personality and emotional variables; however, they do not establish causal relationships.

The findings show a domain-specific pattern of group differences across personality, well-being, emotional distress, and substance-related measures. Male records had higher Extraversion and substance-related scores, whereas female records had higher Neuroticism, depression, anxiety, and stress scores and lower WHO-5 well-being. Differences in Psychoticism, the Lie scale, self-esteem, and suicidal-ideation checklist scores were not statistically significant after Holm correction. The correlation analysis identified significant associations between Neuroticism and anxiety, self-esteem and depression, depression and anxiety, and anxiety and stress. These results should be interpreted as group-level differences and associations, not causal effects or predictions about individuals.

The DASS-21 findings showed higher depression, anxiety, and stress scores in the female group, with the largest mean difference for anxiety. Anxiety also had the highest proportion of records in the moderate-or-higher severity bands. Male records had higher scores on both substance-related measures. Although these patterns may help identify domains for further assessment and support, questionnaire scores do not establish diagnoses, and the non-significant suicidal-ideation comparison does not imply that risk is absent.

The significant correlations indicate associations among selected personality and emotional measures, but they do not establish causality. The cross-sectional design, sample context, and self-report measures limit the conclusions that can be drawn. Further research with larger and more diverse samples, longitudinal designs, and clearly documented procedures is needed to determine whether these patterns are reproducible and generalisable.

5. Limitations

The study has certain limitations. First, its cross-sectional design limits the ability to establish causal relationships among the variables. Second, the sample comprised 100 young adults from a single university, which may limit the generalisability of the findings. Third, the use of self-report measures may have introduced response and social desirability biases. Additionally, five participants who selected "prefer not to say" were excluded from male-female comparisons. Finally, several correlations, including those involving suicidal ideation, were statistically non-significant. Therefore, the findings should be interpreted cautiously and should not be considered evidence of clinical diagnoses or causal relationships.

6. Conclusion

The findings show a domain-specific pattern of group differences across personality, well-being, emotional distress, and substance-related measures. Male records had higher Extraversion, substance-checklist, and DAST-20 scores, whereas female records had higher Neuroticism, depression, anxiety, and stress scores and lower WHO-5 well-being. These differences remained statistically significant after Holm correction. By contrast, group differences in Psychoticism, the Lie scale, and self-esteem were not statistically significant after adjustment. The results therefore do not support a general conclusion that one group had better psychological functioning across all measured domains.

The DASS-21 comparisons showed higher depression, anxiety, and stress scores in the female group, with the largest mean difference observed for anxiety, followed by stress and depression. The severity-band results also showed that anxiety had the greatest proportion of records in the moderate-or-higher categories, while more than half of stress scores fell in the normal range. These are questionnaire-based symptom patterns and should not be interpreted as rates of diagnosed disorders. Both substance-related measures showed higher mean scores in the male group; however, neither the checklist nor DAST-20 score alone establishes a substance-use disorder.

The correlation analysis identified four statistically significant associations: Neuroticism with anxiety ($r = .344, p < .001$), self-esteem with depression ($r = -.272, p = .006$), depression with anxiety ($r = .240, p = .016$), and anxiety with stress ($r = .297, p = .003$). The other selected correlations in Table 4

were not statistically significant. These findings indicate that some personality and emotional measures varied together, but they do not establish direction or causality. The non-significant gender difference in suicidal-ideation checklist scores likewise indicates only that the analysis did not detect a statistically significant group difference; it does not demonstrate that suicidal ideation was absent in either group. Overall, the results support a differentiated interpretation of the assessed domains rather than a single global judgement about psychological functioning.

References

- Aluja, A., García, Ó., & García, L. F. (2003). A psychometric analysis of the revised Eysenck Personality Questionnaire short scale. *Personality and Individual Differences*, 35(2), 449–460. [https://doi.org/10.1016/S0191-8869\(02\)00206-4](https://doi.org/10.1016/S0191-8869(02)00206-4)
- Dhiman, V., Menon, G. R., & Tiwari, R. R. (2023). A systematic review and meta-analysis of prevalence of seven psychiatric disorders in India. *Indian Journal of Psychiatry*, 65(11), 1096–1103. https://doi.org/10.4103/indianjpsychiatry.indianjpsychiatry_539_22
- Eysenck, S. B. G., Eysenck, H. J., & Barrett, P. (1985). A revised version of the psychoticism scale. *Personality and Individual Differences*, 6(1), 21–29.
- Eysenck, H. J., & Eysenck, S. B. G. (1991). *Manual of the Eysenck Personality Scales*. Hodder & Stoughton.
- Greco, A. M., González-Gómez, B., & Cañete-Massé, C. (2025). A COSMIN-based meta-analysis on the psychometric properties of the Rosenberg Self-Esteem Scale for children and adolescents. *Child Indicators Research*, 18, 2705–2736. <https://doi.org/10.1007/s12187-025-10290-2>
- Indira Gandhi National Open University. (n.d.). Practical 2: The assessment of specific problems in adolescents. In *Practical Manual*, Section 2.3(B), “Checklist for assessment of suicidal ideation” (p. 20) and Section 2.7, “Checklist for assessment of substance abuse” (p. 25).
- Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales* (2nd ed.). Psychology Foundation of Australia.
- National Institute of Mental Health and Neuro Sciences. (2016). *National Mental Health Survey of India, 2015–16: Prevalence, pattern and outcomes*. Ministry of Health and Family Welfare, Government of India.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton University Press. <https://doi.org/10.1515/9781400876136>
- Skinner, H. A. (1982). The Drug Abuse Screening Test. *Addictive Behaviors*, 7(4), 363–371. [https://doi.org/10.1016/0306-4603\(82\)90005-3](https://doi.org/10.1016/0306-4603(82)90005-3)
- Topp, C. W., Østergaard, S. D., Søndergaard, S., & Bech, P. (2015). The WHO-5 Well-Being Index: A systematic review of the literature. *Psychotherapy and Psychosomatics*, 84(3), 167–176. <https://doi.org/10.1159/000376585>
- Wang, Z., Dou, Y., Yang, X., Guo, X., Ma, X., Zhou, B., & Zhang, W. (2025). Global, regional, and national burden of mental disorders among adolescents and young adults, 1990–2021: A systematic analysis for the Global Burden of Disease Study 2021. *Translational Psychiatry*, 15, Article 397. <https://doi.org/10.1038/s41398-025-03623-w>
- World Health Organization. (2025). *World mental health today: Latest data*. <https://www.who.int/publications/i/item/9789240113817>
- Zhao, X., Liu, L., Zhang, L., Zhao, P., Jiang, W., & Nahata, M. C. (2026). The global burden of mental and substance use disorders among adolescents and young adults. *Molecular Psychiatry*, 31, 3880–3897. <https://doi.org/10.1038/s41380-026-03503-9>