ORIGINAL ARTICLE

Development and Validation of a YUWA JOSH Questionnaire among Youth of Dehradun, Uttarakhand, India

Santosh Kumar, Bhavna Singh, Ekta Pathak

Department of Community Medicine, All India Institute of Medical Sciences Rishikesh

ABSTRACT

Background: Youth (15–24 years) represent a vital demographic facing multifaceted challenges affecting holistic wellness. Existing tools have limited cultural adaptation for Indian youth and often lack comprehensive multidimensional approach. **AIM** : This study aims to develop and validate the YUWA JOSH Questionnaire (Version 1.0), a culturally relevant instrument assessing holistic wellness among youth of Dehradun, Uttarakhand, India. **Methods**: The Questionnaire was developed based on multidimensional wellness framework adapted for the Indian context through expert consultation. The initial 38-item questionnaire underwent content validation by a panel of experts in psychology, public health, and education. Data were collected from 283 youth aged 15–24 years from schools and colleges. "Exploratory factor analysis (EFA) with principal axis factoring and oblimin rotation" identified the underlying factor structure. Internal consistency was assessed by "Cronbach's alpha". "Confirmatory factor analysis (CFA)" evaluated model fit. **Results**: EFA revealed a four-factor solution accounting for 39.4% of the total variance, representing Interpersonal ,Academic Pressure and Psychological distress, Emotional Distress, Substance Use Behaviors, and Sleep & Physical Exercise domains. Cronbach's alpha values ranged from 0.59 to 0.86 across factors, indicating acceptable to good reliability. CFA demonstrated good model fit on the RMSEA index (0.055, 90% CI: 0.048–0.062), though CFI (0.86) and TLI (0.845) suggested potential areas for refinement. **Conclusion**: The YUWA JOSH (Youth Upliftment and Awareness: Journey Towards Optimism, Strength and Harmony) questionnaire is a reliable multidimensional instrument capturing key domains relevant to Indian youth. Building upon this foundational work, the authors plan to incorporate Financial Wellness domain and conduct subsequent validation studies to enhance the questionnaire's scope and psychometric robustness.

INTRODUCTION

Youth—defined by the United Nations as individuals aged 15 to 24 years[1]—represent a crucial demographic cohort for nation's future. Sedentary lifestyles, poor dietary habits, rising substance use, increasing academic pressure, cyberbullying, strained family or peer relationships are issues confronting this generation[2–4]. The post-pandemic era has highlighted rising rates of anxiety, depression, stress, and emotional fatigue among adolescents and young adults[5,6].

Globally, tools such as WHO-5 Wellbeing Index, Ryff's Psychological Well-Being Scales the Youth Wellness Index used in western countries for assessing wellness among youth. However, these tools often emphasize either mental or physical health, with limited cultural adaptation for Indian youth.

While the "Rashtriya Kishor Swasthya Karyakram (RKSK)" and School Health Programme under Ayushman Bharat aim to address adolescent

health, their implementation is variable and primarily focused on physical health, reproductive health, and nutrition. There is a gap in comprehensive, preventive, and promotive wellness programs that engage youth actively in developing a balanced life across multiple dimensions of health.

This unmet need emphasizes the importance of a structured, culturally relevant youth wellness assessment tool; this study aims to develop the YUWA JOSH Questionnaire (Youth Upliftment and wellness through Awareness: Journey towards Optimism, Strength, and Harmony, Version 1.0) and assess its content validity, construct validity, and reliability among Indian youth aged 15–24 years in Dehradun, Uttarakhand.

The name YUWA JOSH has been chosen deliberately to ensures cultural relevance and reduce the stigma often associated with psychological screening .

MATERIAL & METHODS

Instrument development

Construct definition

Youth according to UN defined as individuals with 15 to 24 years(1).

Wellness as defined by National Institute of wellness states that it is an active process through which people become aware of, and make choices

toward, a more successful existence (7). The conceptual model of the YUWA JOSH Questionnaire (version 1) was adapted from Stoewen et al(7) multidimensional wellness framework. While retaining the core structure, the eight dimensions were refined and modified through expert consultation and consideration of contextual factors relevant to Indian youth, ensuring cultural appropriateness and content relevance.

Fig.1 Conceptual Model of Youth Wellness Questionnaire (version 1)

The development and validation of the YUWA JOSH Questionnaire followed a systematic, multi-stage process encompassing item generation, content validation, pre-testing, and psychometric evaluation. Fig 2. illustrates the sequential steps undertaken.

Fig 2. Process of Development and Validation of the YUWA JOSH Questionnaire version 1

- **Item Generation**
  - Literature review, existing tools, focus group discussions (FGDs) with students, and interviews with educators & psychologist.
  - Domains: The initial pool consisted of 41 items distributed across six domains: Physical Wellness (10 items), Social Wellness (5 items), Spiritual Wellness (4 items), Environmental Wellness (9 items), Suicide Risk Assessment (5 items), and Mental Wellness (8 items).

- **Content Validation**
  - Method: Expert panel (4 experts in psychology, two public health experts, teacher and student) to review items.
  - Content Validity Index

- **Pretesting**
  - To check clarity, language, comprehension, cultural sensitivity.

- **Construct Validity**
  - Exploratory factor analysis (EFA) & Confirmatory Factor analysis (CFA)

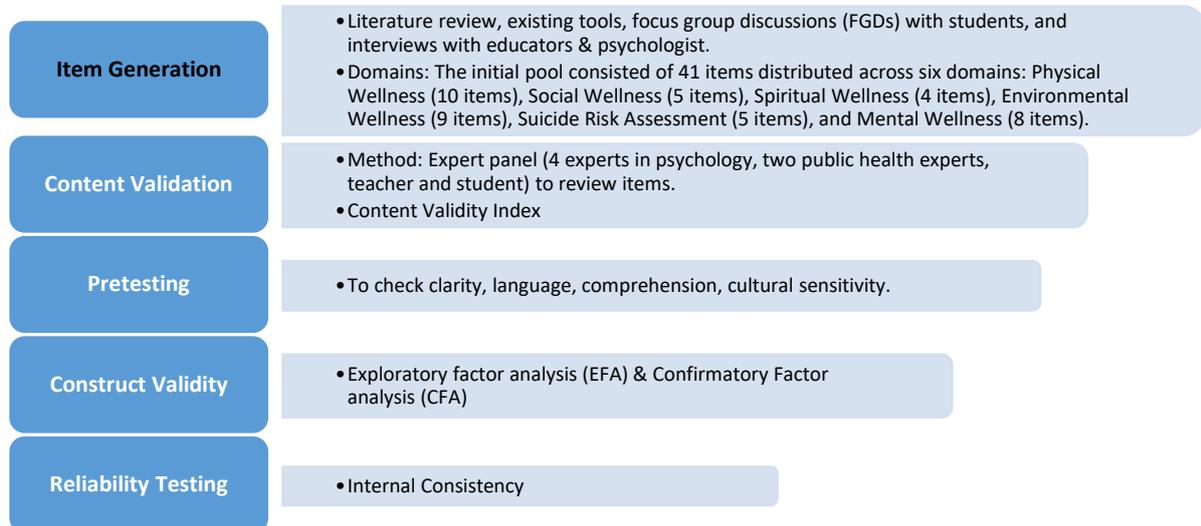- **Reliability Testing**
  - Internal Consistency

Fig2. EFA = Exploratory Factor Analysis; CVI = Content Validity Index. The flowchart depicts the sequential steps undertaken for the development and validation of the YUWA JOSH Questionnaire, including item generation, content validation, pre-testing, and psychometric evaluation.

Content Validity: Content validity was established through review by expert panel from 4 different domains namely, psychology, public health, and education, who assessed the relevance, clarity, and representativeness of items. Minor modifications in wording were made, and redundant or overlapping items were removed. As a result, three items from

the suicide risk domain, three from the physical wellness domain, and one from the social wellness domain were deleted, yielding a final 27-item instrument. Final questionnaire shown in supplement table 1.

Construct Validity: For the "Exploratory Factor Analysis (EFA)" phase, three schools and one college in subdistricts of Dehradun, Uttarakhand were selected purposively and data was collected from them. Participants were aged between 15 and 24 years, able to comprehend English or Hindi, and provided voluntary informed consent. The study targeted a sample size of 190, 5-10 participants per item for factor analysis.

Scoring Algorithm and Interpretation : Negatively worded items were reverse-coded so that a higher total score indicates a higher level of holistic wellness.

To ensure the clinical safety and interpretability of the YUWA JOSH scores, a hierarchical **"Two-Step Gated Scoring"** method was employed. This approach prioritizes the "Suicide Risk" domain as a critical determinant of wellness classification:

Step 1: Critical Safety Screen (Gating Item) The response to Item E2 serves as the primary filter. A score of **< 4** (indicating the presence of risk) on this item is established as a "Red Flag." Any participant meeting this criterion is automatically classified into the **"Low Wellness / At-Risk"** category, necessitating immediate referral, regardless of their scores in other domains. This ensures that acute mental health risks are not masked by high performance in physical or financial dimensions.

Step 2: Cumulative Wellness Score (Percentile Method) For participants clearing the safety threshold (Item E2 score ≥ 4), a cumulative Total Wellness Score is calculated by summing the responses of all 27 items. To interpret these scores in the absence of a pre-existing clinical gold standard, a norm-referenced approach was used. Cut-off scores were determined by calculating the 25th, 50th, and 75th percentiles of the sample distribution.

S.N	Score	Status	Domain to be assessed
1	Scores above the 90th percentile (>50)	Adequate Wellness	*Physical Health (Sleep wellness, Nutritional wellbeing, Exercise, Substance abuse) >50* *Mental health (Depression, stress, Emotional regulation)>50* *Social Health (Interpersonal relationship) >50* *Spiritual health (Believe and attitude) >50*
2	Scores above the 75th percentile (>45)	**Mild Wellness**	*Physical Health (Sleep wellness, Nutritional wellbeing, Exercise, Substance abuse) >45* *Mental health (Depression, stress, Emotional regulation)>45* *Social Health (Interpersonal relationship) >45* *Spiritual health (Believe and attitude) >45*
3	Scores between the 50th and 75th percentile (39-45)	**Moderately Wellness**	*Physical Health (Sleep wellness, Nutritional wellbeing, Exercise, Substance abuse) 39-45* *Mental health (Depression, stress, Emotional regulation)39-45* *Social Health (Interpersonal relationship) 39-45* *Spiritual health (Believe and attitude) 39-45*
4	Scores between the 25th and 50th percentile (32-38)	**Poor Wellness**	*Physical Health (Sleep wellness, Nutritional wellbeing, Exercise, Substance use) 32-38* *Mental health (Depression, stress, Emotional regulation)32-38* *Social Health (Interpersonal relationship) 32-38* *Spiritual health (Believe and attitude) 32-38*
5	Scores below the 25th percentile. (<32)	**Severely poor Wellness**	*Physical Health (Sleep wellness, Nutritional wellbeing, Exercise, Substance use) <32* *Mental health (Depression, stress, Emotional regulation) <32* *Social Health (Interpersonal relationship) <32* *Spiritual health (Believe and attitude) <32*

RESULTS

A total of 283 participants were included in the study. The mean age of the participants was 18.2 years (SD = 2.63). More than half of the respondents (65.0%) had completed higher secondary education, while 29.9% were MBBS undergraduate students, 2.8% were nursing students, and 2.4% were graduates. In terms of sex distribution, just over half of the participants were female (50.8%), 37.8% were male, and 11.4% preferred not to disclose their sex (Table 1).

Table 1 Sociodemographic Characteristics of Study Participants (N=283)

Variable	Frequency (%)
Age(years, Mean ± SD)	18.2 ± 2.63
Education	
Higher Secondary	165 (65%)
Nursing Student	7 (2.8%)
Graduate	6 (2.4%)
MBBS UG student	76 (29.9%)
Sex	
Female	147 (50.8%)
Male	107 (37.8%)
Not Disclosed	29 (11.4%)

The scale was reviewed by four subject experts to establish content validity. Item-level CVI (I-CVI) values ranged from 0.50 to 1.00, with most items achieving ≥ 0.75. Three items (A5, A10, B4) had I-CVI values of 0.75, while two items (C2 and E3) had lower I-CVI values of 0.50. All remaining items obtained an I-CVI of 1.00, reflecting strong agreement regarding item relevance. The scale-level CVI (S-CVI) was 0.95, indicating excellent overall content validity.

The adequacy of the data was examined by "Kaiser–Meyer–Olkin (KMO)" measure of sampling adequacy was satisfactory (.81), and Bartlett's test of sphericity was significant (χ^2 = 2890, *df* = 666, *p* < .001), indicating that the correlation matrix was suitable for factor analysis.

EFA was conducted using principal axis factoring with oblimin rotation. Eigenvalues greater than 1 was found in four factors , accounting for 39.4% of the total variance (Table 2). The scree plot also supported a four-factor solution (Fig 3).

The assessment of internal consistency of the extracted factor was done using Cronbach's alpha. Factor 1 demonstrated good reliability (α = .86), while Factor 2 (α = .76) and Factor 3 (α = .76) showed acceptable reliability. Factor 4 exhibited lower reliability (α = .59), which may be partly explained by the small number of items in this factor.

Confirmatory factor analysis (CFA)" was conducted to assess the factor structure of the 27-item wellness scale. The model demonstrated acceptable fit based on RMSEA (0.055, 90% CI: 0.048–0.062), while CFI (0.86) and TLI (0.845) indicated suboptimal fit.

Due to the pilot nature of this study and the specific sample size constraints, both EFA and CFA were conducted on the same participant pool (N=283).

Table 2. Exploratory Factor Analysis: Factor Loadings of Items

Factor Loadings

		Factor 1	2	3	4	Uniqueness	KMO
							0.806*
A1	A1.How regularly do you engage yourself in physical exercise (e.g., 30 mins at least 5x a week or 10,000 steps a day)?				0.498	0.758	0.586
A2	How often do you get 6–8 hours of continuous sleep each night?				0.577	0.651	0.738
A3	How often do you feel fresh once awake in the morning?				0.597	0.591	0.701
A4	How often do you drink alcohol?			0.739		0.43	0.643
A6	Do you smoke (cigarette / tobacco / any other substance)?			0.73		0.442	0.73
A7	How often during the last year have you found that you were not able to stop smoking once you had started?			0.632		0.593	0.73
B1	I don't care much about my relationship with other people.	0.474				0.759	0.882
B2	I don't feel valued and supported in my close relationships.	0.586				0.666	0.891
B3	I feel I end up in trouble because of my friends/family.	0.612				0.632	0.875
B4	I am not able to communicate effectively with others and share my views.	0.548				0.697	0.853
B5	I am not comfortable in social gatherings and find it difficult to form new relationships.	0.567				0.699	0.786

Item	Statement				
C1	I find it difficult to find: (a) what is important in my life, (b) what are my values, (c) who am I, (d) where is my life headed.	0.525		0.67	0.857
C4	I don't have trust in others.	0.48		0.758	0.855
D1	Do you feel burdened by academic expectations from family?	0.542		0.608	0.885
D2	Do you feel burdened by academic expectations from society?	0.66		0.573	0.872
D3	Do you feel burdened by academic expectations from yourself?	0.504		0.677	0.872
D4	Have family/relationship conflicts impacted your mental health?	0.581		0.547	0.912
E1	How frequently do you feel ghabrahat/baichaini/palpitation/anxiety?	0.568		0.58	0.906
E2.	Have you ever thought of or attempted to harm yourself?	0.595		0.562	0.837
E3	Have you ever told someone about your suicidal thoughts?	0.438		0.695	0.814
F2	I have been feeling worthless; there is no use of my time, my life.		0.492	0.595	0.878
F3	I don't feel energy in myself.		0.484	0.749	0.769
F4	I find it difficult to cope with stress and get tense about minor problems.		0.617	0.599	0.853
F5	I feel I am always confused and unable to decide what to do.		0.605	0.641	0.776
F6	I don't feel confident about myself; I lose confidence while doing any work.		0.597	0.6	0.85
F7	I find it difficult to focus on my work.		0.607	0.598	0.784
F8	How often do you experience mood swings or significant changes in your emotional state (e.g., extreme anger, sadness)?		0.465	0.778	0.679

*overall KMO Only loadings ≥ .40 are displayed. Extraction method = Principal Axis Factoring; Rotation = Oblimin — Factor loading <0.4 are removed

Figure 3. Scree plot showing the eigenvalues of factors extracted from the dataset compared with simulated data.
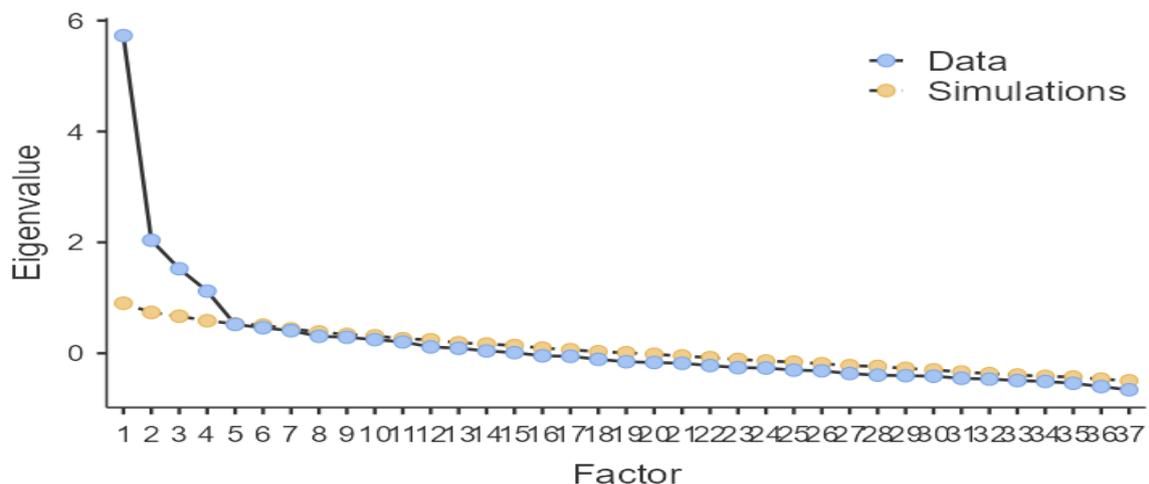
DISCUSSION

The present study aimed to validate the YUWA JOSH (version 1.0) Questionnaire as a multidimensional instrument for assessing wellbeing among Indian youth. A total of 283 participants (mean age 18.2 ± 2.63 years) completed the survey, representing diverse educational backgrounds and a balanced sex distribution. Overall, the findings indicate that the YUWA JOSH Questionnaire demonstrates acceptable psychometric properties, though certain domains exhibited lower reliability, highlighting areas for refinement.

Content validity assessment showed strong agreement among four subject experts, with most items achieving an item-level CVI (I-CVI) of ≥0.75 and an overall scale-level CVI (S-CVI) of 0.95, supporting the relevance of the items. The Kaiser–Meyer–Olkin measure (0.81) and significant Bartlett's test of sphericity (χ^2 = 2890, df = 666, $p <$ 0.001) confirmed the adequacy of the data for factor analysis. "Exploratory factor analysis" identified four factors explaining 39.4% of the total variance, supported by the scree plot. Factor 1 (Interpersonal ,Academic Pressure and Psychological distress) demonstrated good internal consistency (α = 0.86), Factors 2 (Emotional Distress) and 3 (Substance Use Behaviors)were acceptable (α = 0.76 each), and Factor 4 (Sleep & Physical exercise) showed lower reliability (α = 0.59), likely due to the smaller number of items.

"Confirmatory factor analysis (CFA)"confirmed the four-factor structure, with RMSEA = 0.055 (90% CI: 0.048–0.062) indicating good model fit. However, CFI (0.86) and TLI (0.845) suggested room for improvement, implying that certain items may require refinement to enhance model fit. These findings underscore the importance of context-specific adaptation, particularly in domains such as Spiritual and Environmental Wellbeing, which contributed less to total variance.

While the YUWA JOSH was conceived through an eight-domain framework, the empirical convergence into four factors suggests that for Indian youth, these dimensions are highly interrelated. This reflects a 'holistic' reality where academic, interpersonal, and psychological distress are inextricably linked.

Our results are consistent with prior validation studies in diverse cultural contexts. For example, the "Chinese College Student Subjective Wellbeing Questionnaire (CSSWQ)(8)" also identified four factors with good internal consistency and correlations with life satisfaction, affect, and academic performance. Similarly, other instruments such as the WHO-5 Well-Being Index and the "Stirling Children's Well-Being Scale (SCWBS)(9)" demonstrated unidimensional or two-factor structures with strong psychometric properties. Compared with these measures, the YUWA JOSH Questionnaire is multidimensional and includes a Suicide Risk Assessment domain, addressing a critical mental health concern among Indian youth.

The YUWA JOSH Questionnaire balances comprehensiveness with practicality, offering 27 items covering positive wellbeing and critical risk domains without imposing excessive burden. Future research should focus on refining items in domains with lower reliability, conducting CFA in larger and more diverse samples, and examining predictive validity with academic, health, and behavioral outcomes.

A methodological limitation of this study is that the Exploratory and Confirmatory Factor Analyses were performed on the same sample. While this is acceptable for the initial development and pilot testing of a new instrument, future validation studies should employ a split-sample approach or an independent larger cohort to confirm the stability and cross-validity of the four-factor model.

CONCLUSION

YUWA JOSH Questionnaire is a promising tool for assessing youth wellbeing in India. While the instrument demonstrates promising preliminary validity and acceptable reliability across its core domains, the modest variance explained and marginal fit indices suggest it is currently in its initial validation phase. By capturing physical, social, mental, spiritual, environmental, and suicide-related domains, it provides a comprehensive framework that can inform research, educational interventions, and clinical practices aimed at promoting holistic youth wellbeing. Building upon the current version of the Youth Wellness Questionnaire, future research will focus on incorporating a Financial Wellness domain to capture the economic aspects influencing youth wellbeing. Subsequent studies will undertake rigorous validation of the expanded questionnaire to ensure its psychometric robustness and cultural relevance across diverse youth populations.

RECOMMENDATION

Public health policymakers and educators may utilize this multidimensional framework to identify specific "at-risk" wellness domains in youth to inform targeted school-based interventions.

LIMITATION OF THE STUDY

While the study provides a comprehensive overview of youth wellbeing, it faces a few key limitations:

- **Initial Validation Stage:** The marginal fit indices and modest variance explained indicate that the tool requires further refinement and larger-scale testing to confirm its psychometric robustness.
- **Generalizability:** As an initial validation, the findings may not yet be fully representative of the vast cultural and socioeconomic diversity across all regions of India.

RELEVANCE OF THE STUDY

This study contributes a culturally specific, multidimensional assessment tool to the existing body of literature on Indian youth wellbeing. Unlike previous instruments that may focus narrowly on clinical pathology, the YUWA JOSH Questionnaire integrates spiritual and environmental domains alongside physical and mental health. It fills a critical gap by providing a holistic framework that accounts for the unique socio-cultural nuances of the Indian youth experience

AUTHORS CONTRIBUTION

All authors have contributed equally.

FINANCIAL SUPPORT AND SPONSORSHIP

None

CONFLICT OF INTEREST

There is no conflict of interest.

DECLARATION OF GENERATIVE AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

The authors haven't used any generative AI/AI assisted technologies in the writing process.

REFERENCES

1. Nations U. Youth [Internet]. United Nations. United Nations; [accessed 16/06/25]. Available from: https://www.un.org/en/global-issues/youth
2. Youth in India 2022 [Internet]. 2022 [accessed 03/04/25]. Available from: https://ruralindiaonline.org/hi/library/resource/youth-in-india-2022/
3. Aggarwal S, Berk M. Evolution of adolescent mental health in a rapidly changing socioeconomic environment: a review of mental health studies in adolescents in India over last 10 years. Asian J Psychiatr. 2015 Feb;13:3–12.
4. Kumar S, Mohanraj R, Lidiya A, Karthikeyan D, Kannan L, Azariah F, et al. Exploring Perspectives on Mental Well-Being of Urban Youth from a City in South India. World Social Psychiatry [Internet]. 2021 Aug [cited 2025 Apr 23];3(2):87. Available from: https://journals.lww.com/wpsy/fulltext/2021/03020/exploring_perspectives_on_mental_well_being_of.7.aspx
5. Sharp H, Wright N, Bozicevic L, Supraja TA, Pickles A, Hill J, et al. Inequalities in COVID-19 impact on preschool mental health in India: key moderators of adverse outcome. BMJ Public Health [Internet]. 2024 Dec 12 [cited 2025 Apr 23];2(2):e001209. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC11816102/
6. Nathiya D, Singh P, Suman S, Raj P, Tomar BS. Mental Health Problems and Impact on Youth Minds During the COVID-19 Outbreak: Cross-Sectional (RED-COVID) Survey. Asian Journal of Social Health and Behavior [Internet]. 2020 Sept [cited 2025 Apr 23];3(3):83. Available from: https://journals.lww.com/shbh/fulltext/2020/03030/mental_health_problems_and_impact_on_youth_minds.3.aspx
7. Stoewen DL. Health and wellness. Can Vet J [Internet]. 2015 Sept [cited 2025 Aug 16];56(9):983–4. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4535518/
8. Zhang Y, Carciofo R. Assessing the wellbeing of Chinese university students: validation of a Chinese version of the college student subjective wellbeing questionnaire. BMC Psychol. 2021 May 1;9(1):69.
9. Liddle I, Carter G. Emotional and psychological well-being in children: the development and validation of the Stirling Children's Well-being Scale. Educ Psychol Pract. 2015;31(2):174-8.