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Cross- cultural adaptation and reliability of the Albanian version of HPLP-II questionnaire among nursing students

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Abstract

Introduction. The Health Promotion Lifestyle Profile – II (HPLP – II), a well-known instrument measuring health promotion lifestyle behaviour has been translated and validated into several linguistic and cultural contexts. However, despite its extensive use in various culture, no studies have validated the tool in Albanian population. This study aims to translate and evaluate the reliability of the Albanian version of the Health-Promoting Lifestyle Profile-II among nursing students.

Methods. Following the translation of the English version of the Health Promotion Lifestyle Profile-II into Albanian by recognized forward-backward translation methods, the psychometric features of the translated version were assessed with 350 Albanian nursing students. The psychometric properties of the instrument were evaluated, including the internal consistency, item analysis and factor analysis. Data analysis was performed using SPSS version 27.0.

Results. The Albanian version of The Health Promotion Lifestyle Profile – II indicating high internal consistency (Cronbach's alpha = 0.932). Factor analysis confirmed moderate alignment of their respective construct. The correlation analysis further supported the validity of the HPLP-II, with significant positive relationships observed among subscales (ranging from .447 to .699).

Conclusion. The Albanian HPLP-II scale is an appropriate tool for assessing health promoting behaviours of the Albanian students. Future research should expand its application to diverse populations to enhance utility in public health research.

Keywords: Albanian, Health Promotion Lifestyle Profile-II, students, reliability, validation.

Introduction

Measuring health-promoting behaviours is a critical aspect of public health research and practice, as it provides insights into the lifestyle choices that contribute to overall well-being and disease prevention (1). Several years ago, research identified that the predominant causes of illness and mortality are rooted in unhealthy lifestyles and behaviours, with stress emerging as the psychological condition most detrimental to health. Numerous health conditions, including coronary heart disease, cancer, immune system suppression, and chronic illnesses such as diabetes, are strongly influenced by lifestyle choices. Increasing evidence highlights the significant role of psychological states, behaviours, and life context in shaping overall health outcomes (2). The recognition of lifestyle as a crucial factor in health research has driven the scientific community to further develop Health Promotion Model (HPM) (3). This model of Nola J. Pender focuses on the promotion of health and the prevention of illness through behaviour change. The HPM provides a framework to study and predict health behaviours and has been widely applied in nursing and health sciences research. Health-promoting behaviours encompass practices such as adhering to a balanced diet, participating in regular physical activity, effectively managing stress, ensuring sufficient rest, fostering spiritual development, and cultivating positive interpersonal relationships (4). The development of valid and reliable instruments for assessing healthy lifestyles is essential, not only for evaluating health-related behaviours but also for effectively addressing population needs in the promotion of health-enhancing practices (5). Based on HPM Walker et al., (6) created a tool referred to as the Health-Promoting Lifestyle Profile to investigate this behaviour in both healthy and clinically compromised adult populations. The Health-Promoting Lifestyle Profile-II (HPLP-II) questionnaire is the revised version of the HPLP questionnaire, and since 1996, has been extensively utilized to assess health-promoting lifestyles, particularly among Western populations, including healthcare practitioners, and older adults (5). In a similar vein, a multitude of studies have utilized the HPLP-II scale to examine health-promoting behaviours and lifestyle profile dimensions among university students enrolled in healthcare-related fields, including medicine and nursing (7,8,9,10, 11,12)

A person's health beliefs are shaped by their culture, social background, personal experiences with health or illness, and exposure to health promotion programs (13). Consequently, tools designed to measure these beliefs must be culturally valid. Context, language, and culture are critical considerations when adapting a questionnaire. As outlined by the guidelines of the International Test Commission (14), developers must account for linguistic and cultural variations across target populations. It is essential to ensure that the language employed in the adapted versions aligns with the cultural context of the intended populations, as language usage often reflects significant cultural distinctions (15)

The HPLP-II has undergone extensive validation in various cultural contexts, demonstrating its utility in measuring health-related lifestyle choices among different demographic groups, including university students. For instance, it has been translated into different languages including Spanish, Japanese, Arabic, Chinese, Persian, Portuguese, Iranian, Turkish, Malay and its validity and reliability have been thoroughly established (15, 16,17,18, 19, 20,21, 22, 23, 24). Studies have shown that the HPLP-II maintains strong internal consistency, with Cronbach's

alpha values often exceeding the acceptable threshold of 0.70, indicating that the instrument reliably measures the constructs it intends to assess. There has been no published research regarding the psychometric properties of the Albanian version of the HPLP-II. Thus, in the context of Albania, the adaptation and validation of the HPLP-II are particularly significant due to the country's unique socio-cultural landscape and emerging health trends. The Albanian population, especially among university students, faces distinct health challenges, including rising rates of lifestyle-related diseases and mental health issues. Therefore, it is essential to have a validated tool that accurately reflects the health-promoting behaviours of this demographic. This study aimed to translate and assess the reliability of the Albanian version of HPLP-II questionnaire among nursing students and determine its effectiveness as a tool for measuring health promoting behaviours in this population.

Method and Materials

Study design

This study utilized a cross-sectional design to evaluate the psychometric properties of the Health-Promoting Lifestyle Profile-II (HPLP-II) questionnaire among nursing students.

Sample size

The convenience sampling methods was used to recruit participants, targeting nursing students from all three years of undergraduate study. All student who provided informed consent were eligible to participate. A total of 350 students completed the questionnaire, representing 58.3% of the target population (600 students). This sample size was sufficient and meeting the recommend participant-to-item ratio 5:1.

Data collection

Data were collection occurred, during October and November 2024, targeting nursing students from Faculty of Technical Medical Sciences at University of Elbasan, in Albania enrolled in undergraduate programs using a self-administered questionnaire utilising Google Form. Anonymity and confidentiality of their data were assured according to Albanian Law nr. 9887 dates 10.03.2008 "Protection of personal data".

Instrument

The data for this study were collected using The Health-Promoting Lifestyle Profile-II (HPLP-II) questionnaire, a validated tool developed by Walker et al 1987 to measure health promoting behaviours (6). The questionnaire comprises 52 items, grouped into six dimension that assess different aspect of health-promoting lifestyles: Physical activity (8 items), Nutrition (9 items), health responsibility (9 items), stress management (8 items), Interpersonal relationship (9 items), spiritual growth (9 items). Each item is scored on a 4-point Likert scale 1 never, 2 sometimes, 3 often 4 routinely. The total score reflects the overall health-promoting lifestyle, with higher indicating more frequent engagement in health-promoting behaviours. In addition to the HPLP-II items, the questionnaire included a sociodemographic section to obtain relevant participant information. This section collected data on variables like age, gender, alcohol consumption, smoking habits, residential status, presence of chronic disease, use of any medication, and self-perception of full health.

Translation and Adaptation Process

After obtaining permission from the author, the HPLP-II questionnaire was translated and culturally adapted into Albanian language according Beaton guideline et al 2000 (24). The process

included two independent forward translation from English to Albanian by bilingual expert with advanced knowledge of health sciences. Subsequently, two different bilingual experts, conducted a back translational of the synthesised version into English, ensuring that the translated content retained its conceptual equivalence with the original questionnaire. This version was reviewed by a panel of expert to assess cultural appropriateness, language clarity and conceptual accuracy. The pre-final version was pilot tested through 53 students, who were not part of the main study. Feedback from this phase was used to make minor adjustments to enhance clarity. The final Albanian version of HPLP-II was found to be culturally relevant, conceptually accurate, and easy to understand.

Data Analysis

The data were analysed using SPSS version 27.0. Reliability was assessed using Cronbach's Alpha, and descriptive statistics were calculated for all items, including measures of central tendency and distribution. Factor loadings were examined to determine alignment with underlying constructs. Pearson correlation was conducted to evaluate relationships among subscales and the overall scale. Statistical significance was set at $p < 0.001$.

Ethical Considerations

This study was conducted in full compliance with the ethical principles outlined in the Declaration of Helsinki. Permission from the ethic committee was not required, as the study did not involve invasive procedures, sensitive data, or interventions that could pose risk to participants. Anonymity and confidentiality of data were strictly maintained throughout the study, in accordance with Albanian Law nr 9887 dates 10.03.2008 "Protection of personal data". Participants were informed of their right to withdraw from the study, in any time during the completion of the questionnaire.

Results

To assess reliability, Cronbach's Alpha was employed as an indicator of internal consistency (Table 2). On interpreting the overall alpha of the instrument, a value of 0.93 was obtained, whereas the corrected item-total correlation values fluctuated between 0.12 and 0.36. Factor loading vary from 0.13 to 0.39, reflecting moderate alignment of items with the underlying construct.

Item	Mean	Std. Deviation	Skewness	Kurtosis	Factor loading	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1	2.58	0.796	0.206	-0.551	0.374	0.352	0.931
2	2.01	0.644	0.504	1.000	0.130	0.124	0.932
3	1.79	0.723	0.389	-0.853	0.186	0.170	0.932
4	2.21	0.789	0.569	0.139	0.39	0.357	0.931
5	3.05	0.845	-0.373	-0.848	0.329	0.306	0.931
6	3.08	0.808	-0.475	-0.500	0.625	0.429	0.930
7	3.07	0.750	-0.440	-0.207	0.609	0.385	0.931
8	2.33	0.768	0.340	-0.152	0.589	0.358	0.931
9	2.36	0.754	0.383	-0.098	0.572	0.431	0.930
10	2.51	0.859	0.269	-0.652	0.564	0.422	0.931
11	2.94	0.796	-0.138	-0.870	0.563	0.359	0.931
12	3.44	0.758	-1.097	0.168	0.557	0.469	0.930
13	3.37	0.714	-1.015	0.868	0.554	0.434	0.930
14	1.90	0.791	0.569	-0.192	0.546	0.250	0.932
15	2.26	0.701	0.245	-0.008	0.546	0.454	0.930
16	2.63	0.862	0.195	-0.826	0.545	0.373	0.931
17	2.72	0.813	0.168	-0.845	0.542	0.390	0.931
18	3.44	0.707	-1.118	0.795	0.539	0.454	0.930
19	3.07	0.802	-0.326	-0.856	0.536	0.375	0.931
20	2.82	0.840	0.035	-1.004	0.529	0.459	0.930
21	2.36	0.751	0.190	-0.235	0.528	0.396	0.931
22	2.09	0.812	0.570	0.043	0.525	0.492	0.930

23	2.71	0.826	0.158	-0.849	0.523	0.523	0.930
24	3.03	0.795	-0.263	-0.857	0.522	0.495	0.930
25	2.85	0.903	-0.338	-0.711	0.519	0.412	0.931
26	2.49	0.775	0.215	-0.366	0.517	0.492	0.930
27	2.37	0.764	0.159	-0.293	0.512	0.501	0.930
28	1.99	0.829	0.598	-0.108	0.507	0.459	0.930
29	2.23	0.817	0.417	-0.209	0.505	0.482	0.930
30	2.89	0.852	-0.244	-0.754	0.492	0.550	0.930
31	3.03	0.797	-0.506	-0.216	0.492	0.445	0.930
32	2.41	0.844	0.270	-0.495	0.491	0.424	0.931
33	2.32	0.794	0.294	-0.275	0.483	0.505	0.930
34	2.67	0.855	0.060	-0.769	0.481	0.473	0.930
35	2.74	0.774	0.040	-0.618	0.469	0.571	0.929
36	2.85	0.832	-0.094	-0.840	0.468	0.506	0.930
37	2.35	0.983	0.191	-0.973	0.459	0.406	0.931
38	2.57	0.756	0.286	-0.463	0.458	0.526	0.930
39	2.42	0.789	0.196	-0.362	0.452	0.481	0.930
40	2.37	0.852	0.052	-0.642	0.451	0.522	0.930
41	2.25	0.915	0.340	-0.662	0.442	0.529	0.930
42	3.23	0.788	-0.688	-0.328	0.434	0.475	0.930
43	2.39	0.878	0.152	-0.660	0.424	0.512	0.930
44	2.52	0.895	0.165	-0.758	0.419	0.502	0.930
45	2.03	0.839	0.502	-0.315	0.418	0.384	0.931
46	2.27	0.808	0.249	-0.372	0.415	0.536	0.930
47	2.42	0.810	0.293	-0.389	0.41	0.587	0.929
48	2.24	0.911	0.466	-0.511	0.409	0.436	0.930
49	2.82	0.798	-0.238	-0.422	0.402	0.494	0.930
50	2.73	0.997	-0.017	-1.225	0.386	0.382	0.931
51	2.75	0.775	-0.059	-0.510	0.38	0.515	0.930
52	3.06	0.844	-0.425	-0.748	0.27	0.497	0.930

Table 2. Descriptive Statistics, Factor Loading, Corrected Item-Total r, and Cronbach's Alpha if Item Deleted

In table 3 are shown the Cronbach's Alpha reliability statistics for the subscales of health-promoting lifestyle assessment. Spiritual growth exhibits the highest reliability ($\alpha = 0.811$). Interpersonal Relations, Health responsibility, Physical activity, Stress Management show a moderate to good reliability, with alpha values from 0.722 to 0.779. Nutrition has the lowest reliability among all subscales ($\alpha = 0.704$). The overall scale HPLP-II demonstrates a high reliability with a Cronbach's Alpha of 0.932, suggesting high consistency across the 52 items in the instrument.

	Cronbach's Alpha	N of Items
Health responsibility	0.750	9
Physical Activity	0.779	8

Nutrition	0.704	9
Spiritual Growth	0.811	9
Interpersonal Relations	0.722	9
Stress Management	0.735	8
HPLP-II	0.932	52

The correlation matrix (Table 4) indicates significant relationships among all subscales of the Health-Promoting Lifestyle Profile-II. Correlation ranges from .447 to .669, with the weakest being between Spiritual growth and Stress management ($r=.447$) and the strongest between Interpersonal relations and Stress management ($r=.699$). The total score is strongly correlated with all subscales, with value ranging from .735 (Spiritual growth) to .843 (Stress management). All correlations are statistically significant at the 0.01 level (2-tailed).

		Correlations					
		Health responsibility	Physical activity	Nutrition	Spiritual growth	Interpersonal relation	Stress management
Health responsibility	Pearson Correlation	1	.621**	.618**	.472**	.538**	.598**
	Sig. (2-tailed)		0.000	0.000	0.000	0.000	0.000
Physical activity	Pearson Correlation	.621**	1	.565**	.468**	.505**	.598**
	Sig. (2-tailed)	0.000		0.000	0.000	0.000	0.000
Nutrition	Pearson Correlation	.618**	.565**	1	.531**	.508**	.573**
	Sig. (2-tailed)	0.000	0.000		0.000	0.000	0.000
Spiritual growth	Pearson Correlation	.472**	.468**	.531**	1	.698**	.643**
	Sig. (2-tailed)	0.000	0.000	0.000		0.000	0.000
Interpersonal relation	Pearson Correlation	.538**	.505**	.508**	.698**	1	.669**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000		0.000
Stress management	Pearson Correlation	.598**	.598**	.573**	.643**	.669**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	
	N	350	347	350	350	350	350
Total	Pearson Correlation	.793**	.777**	.784**	.802**	.817**	.843**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000

Table 4. Pearson Correlation matrix of HPLP-II.

** . Correlation is significant at the 0.01 level (2-tailed).

Discussion

This study focused on the reliability and cross-cultural adaptation of the Albanian version of the Health-Promoting Lifestyle Profile-II (HPLP-II), confirming its suitability for assessing health-promoting behaviours among nursing students. A rigorous translation and adaptation process was employed to ensure that the instrument maintained conceptual equivalence with original tool developed by Walker et al 1987, while addressing linguistic and cultural nuances.

In Albania, standardized tools for measuring health-promoting behaviours are lacking, making the adaptation of HPLP-II an important contribution.

The reliability of the instrument was confirmed with Cronbach's alpha for the overall scale 0.932 demonstrating a good internal

consistency. These results are consistent with Walker et al 1987 original validation of the tool, who reported an overall reliability of 0.922 (6). Similarly with these finding align with other studies. (12, 24, 26, 27). Furthermore, the subscale reliability in this study ranged from 0.704 to 0.811 are comparable to those reported in Spanish validation of the HLPL-II by Zambrano Bermeo et al that which ranged from 0.68 to, 0.89 (12). These similarities highlight the robustness of the tool across different cultural context.

The factor analysis in this study demonstrated moderate to strong alignment of the most items with their respective subscales, with factor loading ranging from 0.13 to 0.62. Comparable findings were reported in the Portuguese validation were cultural and linguistic adaptation to specific items enhanced their alignment with local perception of health behaviours (5).

The correlation analysis further supported the validity of the HPLP-II, with significant positive relationships observed among

subscales (ranging from .447 to .699). These results align with findings by Rathnayake et al 2020, who observed similar interrelation in the Sinhala adaptation (27).

While this study retained the original six-factor structure of the HPLP-II, alternative approaches have been adopted in their validation. For instance, Oloo Micky Olutende et al (2019) in Kenya validated a modified four-factor model, focusing only on self-realization, health responsibility, stress managements, and Interpersonal relations (28).

This study faced some limitations. First it was conducted only among nursing student in only one Faculty, limiting generalization of the findings. The cross-sectional design prevents assessment of the instrument's predictive validity over time. Reliance on self-reported may have introduced social desirability bias, which could affect the accuracy of the results. Future studies should address this limitation by testing the instrument in larger or diverse populations, employing longitudinal designs.

Conclusions

The Albanian version of Health-Promoting Lifestyle Profile II (HPLP-II) demonstrated good reliability and validity, confirming its suitability for assessing health promotion behaviours among nursing students. Future studies should focus on expanding the application of the instrument to diverse populations to further enhance its utility in public health research and interventions.

Conflict of Interest

There are no conflicts of interest.

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