Research Paper

Reasons for Living for Young Adults-II (RFL-YA-II): Psychometric Properties Among Iranian Students

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ABSTRACT

Objective: The prevalence and increase of suicidal ideation and attempts among young people and students have been one of the concerns of researchers and mental health care professionals. The present study evaluated the psychometric properties of the Persian version of Reasons for Living for Young Adults-II (RFL-YA-II) in a group of Iranian students.

Methods: This study was conducted on a sample of 250 students of Kurdistan University, Iran in the academic year 2021-2022. The instruments used in this study were RFL-YA-II, suicide behaviors questionnaire-revised (SBQ-R), oxford happiness questionnaire-short form (OHQ-SF), beck hopelessness scale (BHS), and ryff scale of psychological wellbeing (RSPWB).

Results: The results of confirmatory factor analysis demonstrated a four-factor structure of the Persian version of RFL-YA-II, while the goodness of fit indices of the one-factor model were not satisfactory. The factor loads of items related to all four factors ranged from 0.41 to 0.91. The findings also provided evidence for the convergent (0.17 to 0.57) and discriminant (-0.20 to -0.56) validity, and Cronbach's alpha coefficients ranged from 0.86 to 0.91.

Conclusion: The Persian version of RFL-YA-II is a valid and reliable tool for assessing the reasons for living in Iranian university samples and it can be used in research and treatment settings.

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Highlights

- The confirmatory factor analysis confirmed a four-factor structure of the Persian version of RFL-YA-II as reported in the original version.
- The data on the construct validity, internal consistency, and concurrent validity of the Persian version of RFL-YA-II confirmed the strong psychometric properties of this tool.
- The Persian version of RFL-YA-II is a valid and reliable tool for assessing the reasons for living in Iranian university samples.

Plain Language Summary

Reasons for life, which can be considered as life-oriented beliefs and future expectations, are among the main protective factors against suicidal behaviors and can play an effective role in the prevention of suicidal ideation. The RFL-YA-II, developed to assess protective factors of suicide. This study examined the psychometric properties of the translated Persian version of RFL-YA-II administered to Iranian university students.

1. Introduction

According to surveys by the Centers for Disease Control and Prevention (CDC), suicide is the second most important reason for the death of 15-29 years old young individuals (Pirani, et al., 2021). Concerning academic samples, more than 1100 suicide attempts are annually reported in universities, and suicide statistics have increased dramatically in recent years (American College Health Association [ACHA], 2015). Reports from the National College Health Assessment in the United States show that about 9% of university students committed suicide within the past year and took into serious consideration the danger of suicide, and 1.4% reported they committed suicide (American College Health Association [ACHA], 2015). The statistics have shown that suicide is increasing to a worrying level in Iran. Forensic medicine statistics on suicidal deaths indicate that the total number of suicides in the country at the beginning of 2001 was equal to 2840 cases, increasing to 3649 cases at the end of this decade (Qaderi & Nazari, 2019). Since March 2011, the suicide rate has increased again, reaching 4055 cases in 2013, which accounts for almost one suicide every two hours across the country (Qaderi & Nazari, 2019).

The pervasiveness and increase in suicidal ideation and attempts among young people and students have been among the concerns of researchers and mental health care professionals. Accordingly, several studies in recent decades have been dedicated to investigating suicide in young adults with special attention to the risk factors (Ventosa Brás, et al., 2021). However, researchers have concluded that protective factors can considerably prevent suicidal ideation and behavior (Gutierrez, et al., 2000). In other words, some people do not engage in suicidal behaviors, even if they are exposed to several risk factors. Thus, a comprehensive assessment of suicide risk factors requires simultaneous evaluation and attention to risk and protective factors (Gutierrez et al., 2000; Ventosa Brás et al., 2021). An individual's reasons for living, known as life-oriented beliefs and expectancies for the future, are among the main factors protecting against suicidal behaviors, which can effectively prevent suicidal ideation (Linehan, et al., 1983).

The Linehan Reasons For Living Inventory (LRFL), to assess protective factors of suicide (adaptive and life-maintaining resources), is one of the most reliable tools in this field that has been translated into various languages to date and administered to diverse populations (Bakhiyi, et al., 2016). The LRFL has been revised many times over the years, and several versions have been developed and expanded to date, including the Brief Reasons for Living (BRFL) (Ivanoff, et al., 1994), the College Student Reasons for Living Inventory (CS-RFL) (Westefeld, Cardin, & Deaton, 1992), Reasons for Living for Adolescents (RFL-A) (Gutierrez et al., 2000), Reasons for Living for Older Adults (RFL-OA) (Edelstein et al., 2009), Reasons for Living for Young Adults (RFL-YA) (Gutierrez et al., 2002), and Reasons for Living for Young Adults-II (RFL-YA-II) (Osman, Gutierrez, Bagge, Freedenthal, & Pirani, 2015). A careful look at LRFL versions indicates that before the development of RFL-YA-II, two versions of CS-RFL and

RFL-YA were utilized to evaluate the reasons for life among university students. Each of these two versions has limitations and problems such as excessive similarity to the original LRFL version, long administration or scoring time, prohibition of using the CS-RFL version in clinical and therapeutic situations (Gutierrez et al., 2002), failure to address religiosity/spirituality protection aspects, and various forms of family support (Kopacz, et al., 217; Lester, 2017) as well as the generalization of questionnaire items to more than five dimensions in the RFL-YA version (Osman et al., 1998), which eventually led to the development of the RFL-YA-II for use in young adult and student samples (Osman et al., 2015; Pirani et al., 2021). The RFL-YA-II has 24 items and 4 factors: faith-related support (FRS), family sources of support (FSS), peer acceptance and support (PAS), and personal perceived strength (PSS). The items in these factors do not overlap with previous versions of this instrument (Osman et al., 2015).

The psychometric properties of RFL-YA-II have been evaluated and validated on students at a State University in the southwestern USA (Pirani et al., 2021). The 4-factor model validated the response items using high standardized factor loads (e.g. ≤ 82) and presented an acceptable estimate of the total-item correlation (60%) for the response items. The association of RFL-YA-II factor scores with those on suicide risk scales (r= -0.14 to 0.50) and suicide protection scales (r= 27 to 49) provided evidence in support of discriminant and convergent validity. Besides, the internal consistency estimation showed that all values of the 4 factors were greater than 0.70 (Pirani et al., 2021). In addition, the psychometric properties of the RFL-YA-II were examined on 936 Portuguese samples, and the findings of exploratory factor analysis replicated the 4-factor model of the original version. The findings also provided evidence for the convergent (0.18 to 0.44) and discriminant (-0.17 to -0.50) validity, and the Cronbach alpha was reported from 0.93 to 0.98.

Several researchers have addressed sociocultural structures and characteristics involved in suicide and believe that cultural factors, besides other influential factors such as physical and physiological illnesses, play a significant role in suicide attempts (Lester, 2012). Thus, some features or components in a given culture or language have aspects and indicators that cannot be generalized to other cultures. Accordingly, tools and scales used in a different culture must be selected with utmost scientific care. Then the selected tools should be reexamined with advanced statistical and psychometric methods in the target population to confirm the reliability and validity of the measurements provided (Costa & McCrae, 1988). RFL-YA-II is a recently developed multifaceted tool whose psychometric properties have not yet been analyzed in the Iranian population. Since students have a major role in establishing and improving an educated society and the student community is one of the largest groups, studying their mental health is particularly important. The present study aims to evaluate the factor structure, face and content validity, internal consistency, and concurrent validity of the Persian version of RFL-YA-II in a group of Iranian students.

2. Participants and Methods

Study participants

The research population consisted of male and female students of Kurdistan University, Iran, in the academic year 2021-2022. Using common instrument validation methods, a large sample of 250 students was selected using convenience sampling. To estimate the sample size for the confirmatory factor analysis (CFA), it is recommended to determine the sample size as 10 per each parameter (Kline, 2015). Considering the number of RFL-YA-II items (n=24) and the probability of respondents' dropout (n=15), a total of 255 participants were selected, of whom 5 participants were excluded as they did not complete the questionnaires. Of the 250 respondents in the research sample, 89 participants (35.6%) were male, and 161 participants (64.4%) were female. The participants' mean±SD age was 25.34±4.69 years. Moreover, 92 participants (36.8%) had an associate's degree, 110 participants (44.0%) had a bachelor's degree, and 48 participants (19.2%) had a master's or PhD degree. The inclusion criteria were (1) being a university student, having Iranian nationality, and having the consent to participate in the study. The participants who incompletely filled in the questionnaires were excluded from the study.

Study instruments

The Reasons for Living for Young Adults-II (RFL-YA-II)

RFL-YA-II contains 24 items and was developed by Osman et al. in 2015 (Osman et al., 2015). It also has 4 subscales: FRS, FSS, PAS, and PSS. The FRS subscale measures the protective factor of religiosity/spirituality, the subscale of FSS measures the protective factor of family support, the PAS subscale measures the protective factor of peer support, and the PSS subscale

measures the protective factor of personal support. All RFL-YA-II items are rated on a 6-point Likert scale (1: "Not at all important" to 6: "Extremely important"). The higher scores show more reasons for life. RFL-YA-II was administered in two stages on 778 students (first stage) and 290 students (second stage) at a State University in the southwestern USA, and its psychometric properties were assessed. The first stage focused on evaluating the dimensions of the instruments using CFA. The 4-factor model was used to validate response items with high standardized factor loads (e.g., ≤82) and presented an acceptable estimate of the total-item correlation (60%) for the response items. In the second stage, evidence was checked to assess the validity and concurrent validity of the instrument. In general, the relationship between RFL-YA-II factor scores with scores on suicide risk scales (r=-0.14 to 0.50) and suicide protection scales (r=27 to 49) provided evidence in support of discriminant and convergent validity. Besides, the estimation of internal consistency showed that all values of the 4 factors were greater than 0.70.

The suicide behaviors questionnaire-revised (SBQ-R)

The suicide behaviors questionnaire-revised (SBQ-R) questionnaire was developed by Osman et al. (Osman et al., 2001) and contains 4 items. It examines the probability of future suicide attempts. A higher score indicates a higher level of suicidal ideation. The cut-off score for this questionnaire is 7 for the non-suicidal population. Osman et al. (2001) showed the high convergence validity of this scale and its high sensitivity in distinguishing suicidal from non-suicidal subjects. The findings from factor analysis in Iran confirmed the model with appropriate goodness of fit and a factor load of 0.70 to 0.83. The average variance extracted (AVE) was 0.63, and the composite reliability (CR) was 0.87. Other psychometric properties, such as concurrent validity and internal consistency, were also acceptable (Amini-Tehrani et al., 2020).

The oxford happiness questionnaire-short form (OHQ-SF)

This 8-item instrument was developed by Hills and Argyle (Hills & Argyle, 2002) to measure happiness as a 1-dimensional construct. The items are scored on a 6-point Likert scale ranging from strongly disagree to strongly agree. Items 1, 4, and 8 are scored in reverse. The Oxford Happiness Questionnaire-Short Form (OHQ-SF) scores range from 8 to 48, with higher scores indicating greater happiness. The Cronbach alpha value of this questionnaire was 0.69 (Hills & Argyle, 2002). Moreover, its test-retest reliability was 0.70 in the first administration and 0.64 in the second administration (Cruise, Lewis, & Guckin, 2006). Studies on Iranian students indicated that OHQ-SF has acceptable psychometric properties in students and can be used as a useful tool in psychological research (Dehshiri, et al, 2016).

The beck hopelessness scale (BHS)

The scale was designed by Beck et al. (Beck, et al., 1974) to assess a person's negative expectations about future events. This scale has 21 statements that measure a person's thoughts and mood. The sentences are answered as true or false. Nine items on the Beck hopelessness scale (BHS) are scored in reverse, and the total score ranges from 0 to 21, with higher scores revealing more hopelessness. The internal consistency coefficient of the scale using Kuder-Richardson-20 was calculated as 0.93. Moreover, it correlates closely with the Stuart future test (0.60) and the pessimism subscale of the Beck depression inventory (0.63) (Beck, et al., 1974). In the Persian version, the intra-class correlation coefficient of the scale was 0.69, its correlation with the hopelessness ratio was 0.74, and its internal consistency was 0.93 (Mesbah & Abedian, 2006).

The ryff scale of psychological well-being (RSPWB)

Ryff developed this scale in 1989 (Ryff, 1989) and revised it in 2002. The 18-item version of The Ryff Scale of Psychological Well-Being (RSPWB) consists of 6 factors: autonomy, environmental mastery, personal growth, purpose in life, positive relations with others, and self-acceptance. The overall phycological well-being score is determined by taking the sum of the scores of the 6 factors. The items of this self-assessment instrument are rated on a 6-point Likert scale from strongly agree to strongly disagree. The higher scores show higher psychological well-being. Moreover, 8 items of the scale are scored in reverse. The correlation of the 18-item version of the RSPWB with the main scale ranged from 0.70 to 0.89 (Ryff, 1989; Ryff & Singer, 2006). The results of CFA of the 18-item version on Iranian students confirmed the appropriate fit of the 6-factor model of the scale for the whole sample and both sexes. The Cronbach alpha value was 0.51 for self-acceptance, 0.76 for environmental mastery, 0.75 for positive relations with others, 0.52 for purpose in life, 0.73 for personal growth, and 0.72 for autonomy factors confirming the internal consistency of the scale (Khanjani, et al., 2014).

Study procedure

Face and content validity

The face validity of the Persian version of RFL-YA-II was assessed using a qualitative method. To this end, the items in the instrument were reviewed by 15 students and 10 experts to determine item difficulty, relevance, and clarity, and some minor revisions were made to the content of the instrument based on the feedback received from the students and experts. The content validity of the tool was evaluated using the content validity index (CVI) and content validity ratio (CVR). To measure CVR, 10 clinical psychologists and counselors were asked to rate each item on a 3-point Likert scale (1: not necessary, 2: useful but not necessary, and 3: necessary). According to the Lawshe table, the minimum acceptable coefficient of each item should be 62% based on the evaluation of 10 experts (Lawshe, 1975). The CVI value, estimated according to simplicity, relevance, and clarity criteria, is greater than 0.79 (Lawshe, 1975). In the present study, the estimated values were greater than the expected values, and thus none of the items in the Persian version of RFL-YA-II needed to be revised or removed (Table 1).

After developing the instrument, given the COVID-19 pandemic and the impossibility of face-to-face administration of the instrument, it was designed in the Google form, and its link was shared with students via social media (e.g. Telegram, WhatsApp, etc.). The most important ethical considerations in the present study included acquiring the informed consent of the participants, using codes instead of real names, providing the necessary information about the objectives of the study, voluntary participation, assuring the confidentiality of the personal information of the participants, and providing an address for future communication.

Data analysis

Descriptive analyses (e.g. mean, standard deviation, and frequency) and initial analyses (missing data, outliers, normality, and t test) were performed using SPSS-25 software, and CFA, CR, and AVE were estimated using AMOS-24 software. The content validity of the scale was evaluated using CVR and CVI. To ensure the factor structure of the Persian version of RFL-YA-II was the same as that of the English version, CFA was utilized to analyze the factor structure of the scale. Moreover, its convergent validity was assessed using AVE. The scale's internal consistency was assessed using CR and the Cronbach alpha tests for reliability, and the concurrent validity was assessed by the Pearson correlation coefficient.

3. Results

Construct validity

The construct validity of the Persian version of RFL-YA-II was evaluated using confirmatory factor analysis based on maximum likelihood. To this end, factor loads of the items were first determined. Items with a factor load less than 0.4 or a negative factor load were removed (Kline, 2015). Moreover, to assess the validity of a model, goodness-of-fit (GOF) indices can be examined. The GOF indices and their permissible limits include Chi-square fit statistics/ degree of freedom (CMIN/DF<5), comparative fit index (CFI>0.9), incremental fit index (IFI>0.9), and Tucker Lewis index (TLI>0.9), and the root mean square error of approximation (RMSEA<0.08) (Byrne, 2011). The assessment of the GOF indices of the 4-factor model indicated that the model fits well with the data for the Persian version of RFL-YA-II (CMIN/DF=1.778, IFI=0.938, CFI=0.936, TLI=0.916, and RMSEA=0.056). However, in the 1-factor model, the assessment of the GOF indices showed that these indices were not satisfactory. The results of comparing the two models revealed that RMSEA values and other GOF indices of the 1-factor model were less favorable than those of the 4-factor model, implying the higher adequacy of the 4-factor model (CMIN/DF=6.318, IFI=0.567, CFI=0.563, TLI=0.512, and RMSEA=0.146). The GOF indices of the two models are shown in Table 2.

The analysis results confirmed the 4-factor model with acceptable standardized factor loads (i.e., values ≥41). The standardized factor loads for the FRS factor varied from 0.52 (item 1) to 0.91 (item 19). Besides, the corresponding values for the PAS factor ranged from 0.41 (item 3) to 0.83 (item 15). The related values for PPS factor varied from 0.65 (Item 2) to 0.83 (Item 12) and varied from 0.71 (Item 17) to 0.89 (Item 18) for FSS factor. All factor loads were statistically significant (P=0.001). The factor loads for the single-factor model varied from 0.24 (Item 3) to 0.88 (Item 19), and most factor loads were at the medium and low levels (Table 3).

The AVE method was used to check the convergent validity of all questionnaires, with a value of AVE>0.50 indicating the convergent validity of the questionnaires. The internal consistency of a factor was assessed using CR and the Cronbach alpha coefficient. If the CR and the Cronbach alpha values related to an instrument are greater than 0.70, that instrument has acceptable validity (Tabachnick & Fidell, 2012). Data analysis showed that all factors of the Persian version of RFL-YA-II had

Table 1. CVR and CVI for the items of the Persian version of RFL-YA-II

Items	CVI			CVR
	Simplicity (1-4)	Clarity (1-4)	Relevance (1-4)	Necessary (1-3)
1	1	1	1	1
2	1	1	1	1
3	1	1	1	1
4	1	1	1	1
5	1	1	1	0.67
6	1	1	1	1
7	1	1	1	1
8	0.93	1	1	1
9	1	1	1	0.83
10	0.93	1	1	1
11	1	1	1	0.83
12	0.93	1	1	0.83
13	1	1	1	1
14	1	1	1	0.83
15	1	1	1	0.67
16	1	1	1	1
17	1	1	1	1
18	1	1	1	1
19	1	1	1	1
20	0.93	0.83	1	0.80
21	1	0.92	1	1
22	1	0.93	0.96	1
23	1	1	1	1
24	0.95	1	1	0.95

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CVR: content validity ratio; CVI: content validity index; RFL-YA-II: Reasons for Living for Young Adults-II.

high internal consistency (α>0.70). The highest and lowest Cronbach alpha coefficients for FRS and PAS were a=0.914 and a=0.868, respectively (Table 4).

Concurrent validity

Analysis of the correlation matrix for the research variables showed that the factors of the Persian version of RFL-YA-II had a positive and significant relationship with RSPWB and OHQ-SF and a significant negative relationship with BHS and SBQ-R (Table 5). PPS and BHS scores showed the highest negative bivariate correlation (r=6.56; P<0.01), while the PPS and RSPWB scores indicated the highest positive bivariate correlation (r=0.62; P<0.01). In general, the relationship between the scores of the Persian version

Table 2. Fit indices for the tested models

Model	χ^2	df	χ^2/df	RMSEA	TLI	CFI	IFI
1-factor	1560.614	247	6.318	0.146	0.512	0.563	0.567
4-factor	389.354	241	1.616	0.050	0.943	0.951	0.951

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χ^2: The Chi-square test; df: degrees of freedom; RMSEA: root mean square error of approximation; TLI: Tucker-Lewis index; CFI: comparative fit index; IFI: incremental fit index.

Table 3. Standardized factor loadings for 1-factor and 4-factor CFA models (N=250)

Items	FRS	FSS	PAS	PPS	Unidimensional
V1	0.52				0.51
V5	0.81				0.80
V16	0.88				0.85
V19	0.91				0.88
V21	0.90				0.86
V24	0.90				0.86
V6		0.72			0.30
V7		0.78			0.42
V13		0.77			0.44
V17		0.72			0.41
V18		0.89			0.42
V23		0.89			0.46
V3			0.41		0.24
V10			0.79		0.48
V11			0.70		0.43
V15			0.85		0.43
V20			0.80		0.44
V22			0.72		0.45
V2				0.63	0.27
V4				0.77	0.44
V8				0.75	0.43
V9				0.80	0.44
V12				0.83	0.46
V14				0.80	0.44

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FRS: faith-related support; PAS: peer acceptance and support; FSS: family sources of support; PPS: personal perceived strength; CFA: confirmatory factor analysis.

Table 4. AVE, CR, and the Cronbach alpha for 4 sub-scales of RFL-YA-II

Variables	AVE	CR	Cronbach Alpha
PAS	0.547	0.875	0.868
FRS	0.691	0.929	0.914
FSS	0.643	0.915	0.912
PPS	0.589	0.895	0.891

FRS: faith-related support; PAS: peer acceptance and support; FSS: family sources of support; PPS: personal perceived strength; CR: composite reliability; AVE: average variance extracted; RFL-YA-II: The Reasons for Living for Young Adults-II.

Table 5. Correlations between the studied variables

Variables	1	2	3	4	5	6	7	8
FRS	1							
FSS	0.38**	1						
PAS	0.43**	0.35**	1					
PPS	0.35**	0.45**	0.49**	1				
RSPWB	0.16**	0.34**	0.27**	0.62**	1			
SBQ-R	-0.20**	-0.29**	-0.34**	-0.51**	-0.51**	1		
BHS	-0.24**	-0.30**	-0.23**	-0.56**	-0.68**	0.57**	1	
OHQ-SF	0.17**	0.35**	0.24**	0.57**	0.74**	-0.51**	-0.66**	1

* P<0.05 level (2-tailed); ** P<0.01 level (2-tailed).

Table 6. Mean±SD Cohen's d and t test based on gender

Variables	Groups	n	Mean±SD	t	Cohen's d	P
FRS	Female	161	22.70±9.66	-1.929	0.40	0.055
	Men	89	25.07±8.63			
FSS	Female	161	28.10±6.49	1.46	0.31	0.147
	Men	89	26.72±8.36			
PAS	Female	161	24.46±6.48	-0.878	0.11	0.381
	Men	89	25.27±7.81			
PPS	Female	161	27.97±5.57	1.658	0.20	0.100
	Men	89	26.52±8.33			
RFL-YA-II total	Female	161	103.24±19.82	-0.113	0.01	0.910
	Men	89	103.57±26.97			

FRS: faith-related support; FSS: family sources of support; PAS: peer acceptance and support; PPS: personal perceived strength; RFL-YA-II: The Reasons for Living for Young Adults-II

of RFL-YA-II and the scores related to suicide risk factors (BHS and SBQ-R) and protective factors (RSP-WB and OHQ-SF) provided evidence for discriminant and convergent validity.

The independent samples t test was run to compare the scores of RFL-YA-II subscales between men and women. The results demonstrated no significant difference between the subscales of the Persian version of RFL-YA-II between the two groups (Table 6).

4. Discussion

The present study evaluated the psychometric properties of the translated Persian version of RFL-YA-II administered to Iranian university students. The results confirmed the content validity, as well as the face validity of the Persian version of RFL-YA-II, translated from the original language. The results indicated that the translated version appropriately assesses the reasons for living in students and has features such as clarity, relevance, and simplicity. The assessment of the CFA model also confirmed a 4-factor structure reported in the original version (Osman et al., 2015) (unpublished manuscript) as well as in a recent related study (original study) (Pirani et al., 2021). These factors were FRS, FSS, PAS, and PPS. The factor loads of items for all 4 factors varied from 0.41 to 0.91. The findings also provided evidence for the discriminant validity as well as the convergent validity of the Persian version of RFL-YA-II. The Cronbach alpha and CR values also showed that all 4 factors of the Persian version of RFL-YA-II have high internal consistency.

The factor loads from the CFA model confirmed that the 4 factors should be mentioned. However, the values reported in the original study (Pirani et al., 2021) were slightly different from the values estimated in the present study (i.e., values ≥41 in the present study vs values ≥82 in the original study). Nevertheless, the estimated values were generally acceptable. It should also be noted that in the Persian version, only two items (v1 and v3) had values smaller than 0.60 and the values of the remaining 22 items were higher than 0.60. However, the present study was different from the original study (Pirani et al., 2021) in terms of administration of the instrument (online administration versus face-to-face administration), sample size (n=250 vs N=778), and the age range of the participants (18 to 29 vs 18 to 51 years). These differences may account for the differences in the values of the factor loads. However, the values estimated in this study were closer to the values reported in a recent study of RFL-YA (Gutierrez et al., 2002) (i.e., values ≥63).

Like other studies, CFA was run in the present study to evaluate the fit of 4-factor and 1-factor models. Comparing the two models revealed that the 4-factor model was significantly more efficient than the 1-factor model. All the GOF indices in the 4-factor model matched the parameters estimated in the literature. Although the original study (Pirani et al., 2021) partially supported the 1-factor model, this study and other studies on students (Gutierrez et al., 2002; Westefeld et al., 1992) and even adolescents (Ventosa Brás et al., 2021) reported stronger evidence for the 4-factor model. Overall, the values of the factor loads and the correlations between them (Table 4) confirmed the superiority of the 4-factor model to the 1-factor model. Although each factor represents a discrete meta-construct of the reasons for life, one common construct, reasons for life, is represented by all factors. The correlations between each factor are rooted in the content of RFL-YA-II items, which focus on protective and adaptive properties (Pirani et al., 2021).

Similar findings have been reported for other versions of RFL-YA-II (Gutierrez et al., 2002; Westefeld et al., 1992). However, the multifactorial features of the RFL-YA-II have some advantages, such as the identification of low-scored factors that can become the primary goals of clinical interventions, as well as providing a better assessment of suicidal ideation (Gutierrez et al., 2002).

The internal consistency of all 4 factors of the Persian version of RFL-YA-II was excellent. The Cronbach alpha coefficients ranged from 0.86 to 0.91 for PAS and FRS factors, respectively. These coefficients in older versions of the reason for living for young adults ranged from 0.88 to 0.94 for the RFL-YA version (Gutierrez et al., 2002), from 0.45 to 0.87 for the CS-RFL version (Westefeld et al., 1992), and from 0.92 to 0.98 for the REL-YA-II (Pirani et al., 2021). Similarly, the present and the main study (Pirani et al., 2021) reported the highest Cronbach alpha coefficient with slight superiority for the FRS factor. The assessment of the content validity of the tool in the present study indicated that all factors of the Persian version of RFL-YA-II had negative and positive correlations with the suicide risk factors (BHS and SBQ-R) and protective factors (RSPWB and OHQ-SF), respectively. Similar results were report-

ed in other studies (Gutierrez et al., 2002; Pirani et al., 2021; Westefeld et al., 1992). These findings were consistent with theoretical arguments about the influence of protective factors and risk in suicidal behaviors and their interactions (Gutierrez et al., 2002).

Additional analyses, such as comparing the mean scores of the Persian version of RFL-YA-II by gender, were performed in the present study. The results revealed no significant gender differences in the RFL-YA-II scores. Although some similar studies (Pirani et al., 2021; Westefeld et al., 1992) have not addressed gender in their analyses, there were no similar findings in the literature, especially in students. Nevertheless, the evaluation of the psychometric properties of the previous version of the RFL-YA showed gender significant differences, at least for some but not all factors. Besides, a recent study (Osman, Jones, & Osman, 1991) on the 48-item version of the RFL-YA-II showed no significant gender differences either in the factors or in the total score. Even a replication study on another group of students (Osman et al., 1993) showed significant gender differences for only one subscale (fear of suicide). In addition, the present study found no difference in the severity of the reasons for living between the sexes. However, these limited differences in the number of subscales in these studies may highlight the need for gender-based interpretations of RFL-YA-II scores and factors. This issue needs to be further explored in future studies.

5. Conclusion

As one of the limitations of the present study, it was focused only on a sample of normal students, and thus its findings have limited generalizability to other student samples (such as clinical samples). Moreover, the study was carried out during the COVID-19 pandemic, and the questionnaires had to be completed online by the participants. Thus, the results could be subject to response bias. To this end, the Persian version of RFL-YA-II needs to be examined on clinical samples in Iran. To the best of our knowledge, this is the first study that addressed the psychometric properties of RFL-YA-II in a non-Western culture. As pointed out by some authors (Kreuze & Lamis, 2018), it is necessary to develop non-English versions of suicide risk assessment tools to improve the sensitivity of tools and their generalizability. The data on the 4-factor structure, construct validity, internal consistency, and concurrent validity of the Persian version of RFL-YA-II that are almost similar to the findings of previous studies confirmed the strong psychometric properties of this tool.

Ethical Considerations

Compliance with ethical guidelines

All ethical principles are considered in this article. The participants were informed of the purpose of the research and its implementation stages. They were also assured about the confidentiality of their information and were free to leave the study whenever they wished, and if desired, the research results would be available to them. A written consent has been obtained from the subjects. Principles of the Helsinki Convention was also observed.

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Authors' contributions

All authors equally contributed to preparing this article.

Conflict of interest

The authors declared no conflict of interest.

References

Amini-Tehrani, M., Nasiri, M., Jalali, T., Sadeghi, R., Ghotbi, A., & Zamanian, H. (2020). Validation and psychometric properties of suicide behaviors questionnaire-revised (SBQ-R) in Iran. *Asian Journal of Psychiatry, 47*, 101856. [PMID]

American College Health Association (2006). American College Health Association National College Health Assessment (ACHA-NCHA) Spring 2005 Reference Group Data Report (Abridged). *Journal of American College Health : J of ACH, 55*(1), 5-16. [DOI:10.3200/JACH.55.1.5-16] [PMID]

Bakhiyi, C. L., Calati, R., Guillaume, S., & Courtet, P. (2016). Do reasons for living protect against suicidal thoughts and behaviors? A systematic review of the literature. *Journal of Psychiatric Research, 77*, 92-108. [DOI:10.1016/j.jpsychires.2016.02.019] [PMID]

Beck, A. T., Weissman, A., Lester, D., & Trexler, L. (1974). The measurement of pessimism: The hopelessness scale. *Journal of Consulting and Clinical Psychology, 42*(6), 861-865. [PMID]

Byrne, B. M. (2011). S*tructural equation modeling with Mplus: Basic concepts, applications, and programming*. New York: Routledge. [DOI:10.4324/9780203807644]

Costa, P. T., Jr, & McCrae, R. R. (1988). Personality in adulthood: A six-year longitudinal study of self-reports and spouse ratings on the NEO Personality Inventory. *Journal of Personality and Social Psychology, 54*(5), 853-863. [PMID]

Cruise, S. M., Lewis, C. A., & Guckin, C. M. (2006). Internal consistency, reliability, and temporal stability of the Oxford happiness questionnaire short-form: Test-retest data over two weeks. *Social Behavior and Personality: An International Journal, 34*(2), 123-126. [DOI:10.2224/sbp.2006.34.2.123]

Dehshiri, G., Akbari Balootbangan, A., Najafi, M., & Moghadamzadeh, A. (2016). Psychometric properties of the oxford happiness questionnaire short form in university students. *Journal of Educational Measurement and Evaluation Studies, 5*(12), 9-26. [Link]

Edelstein, B. A., Heisel, M. J., McKee, D. R., Martin, R. R., Koven, L. P., & Duberstein, P. R., et al. (2009). Development and psychometric evaluation of the reasons for living-older adults scale: A suicide risk assessment inventory. *The Gerontologist, 49*(6), 736-745. [PMID]

Gutierrez, P. M., Osman, A., Barrios, F. X., Kopper, B. A., Baker, M. T., & Haraburda, C. M. (2002). Development of the reasons for living inventory for young adults. *Journal of Clinical Psychology, 58*(4), 339-357. [PMID]

Gutierrez, P. M., Osman, A., Kopper, B. A., & Barrios, F. X. (2000). Why young people do not kill themselves: The reasons for living inventory for adolescents. *Journal of Clinical Child Psychology, 29*(2), 177-187. [PMID]

Hills, P., & Argyle, M. (2002). The Oxford Happiness Questionnaire: A compact scale for the measurement of psychological well-being. *Personality and Individual Differences, 33*(7), 1073-1082. [DOI:10.1016/S0191-8869(01)00213-6]

Ivanoff, A., Jang, S. J., Smyth, N. J., & Linehan, M. M. (1994). Fewer reasons for staying alive when you are thinking of killing yourself: The brief reasons for living inventory. *Journal of Psychopathology and Behavioral Assessment, 16*(1), 1-13. [DOI:10.1007/BF02229062]

Khanjani, M., Shahidi, S., Fathabadi, J., Mazaheri, M. A., & Shokri, O. (2014). [Factor structure and psychometric properties of the Ryff's scale of psychological well-being, short form (18-item) among male and female students (Persian)]. *Thoughts and Behavior in Clinical Psychology, 9*(32), 27-36. [Link]

Kline, R. B. (2015). *Principles and practice of structural equation modeling*. New York: Guilford publications. [Link]

Kopacz, M. S., Crean, H. F., L. Park, C., & Hoff, R. A. (2017). Religious coping and suicide risk in a sample of recently returned veterans. *Archives of Suicide Research, 22*(4), 615-627. [PMID]

Kreuze, E., & Lamis, D. A. (2018). A review of psychometrically tested instruments assessing suicide risk in adults. *Omega, 77*(1), 36–90. [DOI:10.1177/0030222816688151] [PMID]

Lawshe, C. H. (1975). A quantitative approach to content validity. *Personnel Psychology, 28*(4), 563-575. [DOI:10.1111/j.1744-6570.1975.tb01393.x]

Lester, D. (2012). The cultural meaning of suicide: What does that mean? *Omega, 64*(1), 83-94. [PMID]

Lester, D. (2017). Does religiosity predict suicidal behavior? *Religions, 8*(11), 238. [DOI:10.3390/rel8110238]

Linehan, M. M., Goodstein, J. L., Nielsen, S. L., & Chiles, J. A. (1983). Reasons for staying alive when you are thinking of killing yourself: The reasons for living inventory. *Journal of Consulting and Clinical Psychology, 51*(2), 276-286. [PMID]

Mesbah, N., & Abedian, A. (2006). [The relationship of stress and hopelessness among students residing in dormitories (Persian)]. *Iranian Journal of Psychiatry and Clinical Psychology, 12*(2), 154-159. [Link]

Pirani, S., Kulhanek, C., Wainwright, K., & Osman, A. (2021). The reasons for living inventory for young adults (RFL-YA-II). *Assessment, 28*(3), 942-954. [PMID]

Osman, A., Bagge, C. L., Gutierrez, P. M., Konick, L. C., Kopper, B. A., & Barrios, F. X. (2001). The Suicidal Behaviors Questionnaire-Revised (SBQ-R): Validation with clinical and nonclinical samples. *Assessment, 8*(4), 443-454. [PMID]

Osman, A., Downs, W. R., Kopper, B. A., Barrios, F. X., Baker, M. T., & Osman, J. R., et al. (1998). The reasons for living inventory for adolescents (RFL-A): Development and psychometric properties. *Journal of Clinical Psychology, 54*(8), 1063-1078. [PMID]

Osman, A., Gifford, J., Jones, T., Lickiss, L., Osman, J., & Wenzel, R. (1993). Psychometric evaluation of the reasons for living inventory. *Psychological Assessment, 5*(2), 154-158. [DOI:10.1037/1040-3590.5.2.154]

Osman, A., Gutierrez, P. M., Bagge, C. L., Freedenthal, S., & Pirani, S. (2015). *The reasons for living inventory for young adults-II (RFL-YA-II) [Unpublished manuscript]*. San Antonio: University of Texas.

Osman, A., Jones, K., & Osman, J. R. (1991). The reasons for living inventory: Psychometric properties. *Psychological Reports, 69*(1), 271-278. [PMID]

Qaderi, S., & Nazari, H. (2019). [Sociological analysis of suicide in Iran Based on analysis of available statistics during 2010-2015 (Persian)]. *Journal of Social Problems of Iran, 10*(1), 195-215. [Link]

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*(6), 1069. [DOI:10.1037/0022-3514.57.6.1069]

Ryff, C. D., & Singer, B. H. (2006). Best news yet on the six-factor model of well-being. *Social Science Research, 35*(4), 1103-1119. [DOI:10.1016/j.ssresearch.2006.01.002]

Tabachnick, B. G., & Fidell, L. S. (2012). *A practical approach to using multivariate analyses.* Boston: Pearson. [Link]

Ventosa Brás, M. S., Guerreiro Carmo, C. I., & de Jesus, S. N. (2021). Reasons for living inventory for adolescents: Psychometric properties among Portuguese adolescents. *Omega, 82*(4), 527-547. [PMID]

Westefeld, J. S., Cardin, D., & Deaton, W. L. (1992). Development of the college student reasons for living inventory. *Suicide and Life-Threatening Behavior, 22*(4), 442-452. [PMID]

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