

RESEARCH ARTICLE

# Basic Psychological Need Satisfaction and Frustration Scale-Adolescents (THE BPNSFS-A): Validity in the Vietnamese Context

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**Abstract:** The satisfaction of the basic psychological needs for autonomy, competence, and relatedness, as defined in self-determination theory, plays a crucial role in adolescents' healthy development. It seems important to assess their satisfaction of all three needs. However, few existing valid and reliable measures especially assess need satisfaction in this age group. Besides, in Vietnam, very little is known about self-determination theory's basic needs. Therefore, this present study aims to validate the youth report version of the basic need satisfaction and frustration scale (BPNSFS) in the Vietnamese context to pave the way for future research in this field. A total of 680 Vietnamese adolescents completed the Vietnamese youth version of the BPNSFS, along with the Perceived Stress Scale, Strengths and Difficulties Questionnaire, and Satisfaction with Life Scale. Confirmatory factor analysis (CFA) was performed to examine the factor structure of the measure; multiple regression analyses were conducted to investigate the predictive validity of the measure; and finally, MANOVA was used to examine the differences in the need satisfaction and frustration among sociodemographic variables. The findings showed that a six-factor solution best fitted the data of Vietnamese adolescents; the dimensions of need satisfaction and need frustration meaningfully predicted adolescents' well-being outcomes; and need satisfaction and need frustration did not vary, along with the sociodemographic characteristics. In general, the Vietnamese version of BPNSFS appears to be a reliable and valid measure of the satisfaction and frustration of basic psychological needs in Vietnamese adolescents. The limitations and implications of the results are also discussed.

**Keywords:** Vietnamese, adolescents, BPNSFS, well-being, validity

In literature, there are two popular dominant psychological theories that relate to needs: hierarchy of needs (Maslow, 1954) and self-determination theory (Ryan & Deci, 2000). Hierarchy of needs offers a model for a variety of needs and states that if the basic-level needs (e.g., food and shelter) of someone are satisfied, they will be motivated to focus on higher-

level needs (e.g., love, self-esteem, morality, and creativity). The truth is, even if the basic-level needs are met, an individual cannot be motivated to satisfy needs at a higher level (Geller, 1982) or vice versa, they can experience a higher-level motivation anytime and anywhere (Fowler, 2019). On the one hand, Geller (1982) revealed that even when overcoming

hunger or low wage, many people still suffer from “anomie, alienation, boredom, apathy, resignation, cynicism, joylessness, meaningless, and despair” (p. 62). On the other hand, Henwood et al. (2014) found that “identifying self-actualization goals is associated with not having one’s basic needs met rather than from the fulfillment of basic needs” (p.220). Therefore, though popular, elegant, and easily applied, these older concepts of basic needs were not really empirically grounded (Brown, 2012; Fitzgerald, 1977; Wahbah & Bridwell, 1976; Borg-Laufs, 2013). Fitzgerald (1977) concluded,

Most psychologists regard the purely empirical study and validation of a hierarchy of needs in Maslow’s sense as presenting immense and (perhaps) insurmountable problems. It is clear that insofar as a potentially verifiable aspect can be abstracted from this ambiguous amalgam, Maslow’s theory of human needs has not been empirically established to any significant extent. (p. 46)

Self-determination theory (SDT) instead points to three universal psychological needs: autonomy, relatedness, and competence. The need for competence is the need to experience a sense of environmental mastery, self-efficacy, and skillfulness by taking opportunities to use one’s capacities and managing tasks that are challenging. The need for relatedness refers to the need to be connected to others, which includes caring for others, feeling cared for by others, and belonging to a group or community more generally. The need for autonomy is the need to have a voice, choice, and input in determining one’s behavior (Ryan & Deci, 2000). All over the world, everyone shares three innate and universal psychological basic needs and is motivated to grow and change by them. This theory especially proposes that people are able to become self-determined when their needs for competence, relatedness, and autonomy are fulfilled (Ryan & Deci, 2000). Different from Maslow’s need theory, self-determination theory is empirically-based, which has been substantiated by research. It is derived using empirical methods (Ryan & Deci, 2008) rather than Maslow’s phenomenological approach. Most research has empirically tested the concepts of the needs for autonomy, competence, and relatedness via valid and reliable measures. In the past three decades,

empirical evidence for the satisfaction and frustration of these three basic psychological needs is quite abundant, addressing issues in many applied domains, such as parenting, health care, education, work, sport, psychotherapy, and so forth (Ryan & Deci, 2017). The body of research especially indicates, as the theory suggests, that attaining competence, autonomy, and relatedness is linked to our psychological health and well-being (Deci & Ryan, 2008; Tay & Diener, 2011; Chen et al., 2015; Ryan & Deci, 2017)

In the adolescent population, several studies vouch for the inexorable role of satisfaction of psychological needs in adolescents’ well-being. For example, a study from an elite youth soccer academy in the UK showed that perceived coach-autonomy support, and need satisfaction had a positive relationship with vitality and a negative one with perceived exhaustion in soccer (Adie, Duda, & Ntoumanis, 2012). Besides, the results from 1,258 junior secondary students in Hong Kong demonstrated that needs satisfaction in physical education was positively correlated with experiences of vitality and negatively correlated with negative emotions (Liu & Chung, 2014). A 2-year longitudinal study amongst Chinese adolescents revealed that basic need satisfaction decreased adolescent students’ anxiety and depression (Yu, Li, Wang, & Zhang, 2016). In a 6-week longitudinal study in China, the findings showed that there were significant bidirectional relationships between competence need satisfaction and positive affect in school (Tian, Chen & Huebner, 2014).

In the context that, worldwide, adolescents engage in a wide range of risky behaviors compared to older or younger individuals and at an enormous cost (Arnett, 2000; Jessor, 1991; Tymula et al., 2012), the protection and promotion of adolescents’ well-being are increasingly and urgently put forward (World Health Organization, 2016). Programs that help adolescents become more active in their own experiences of psychological need satisfaction would be a promising approach to enhance adolescents’ well-being (Earl et al., 2017; Cheon et al., 2016). However, more empirical research is still needed to validate such programs so that they can be implemented on a massive scale (e.g., Erdvikl et al., 2019; Heppe et al., 2019; Tessier et al., 2010). In the given context, empirically rigorous and age-appropriate measurements of basic psychological needs are essential to the scientific research and evaluation of such programs (Costa

et al., 2017; Hemanth, 2015; Liga, 2018). To our best knowledge, there are few existing valid and reliable measures that specially assess the general basic psychological needs in adolescents. Some previous research has used adult-centric instruments such as the Basic Needs Satisfaction in General Scale (Gagné, 2003; Johnston & Finney, 2010) and the Basic Psychological Need Satisfaction and Frustration Scale (The BPNSFS; Chen et al., 2015) to assess general basic psychological needs in adolescents (e.g., Li & Feng, 2018; Yu et al., 2016). Cordeiro et al. (2016) validated the BPNSFS with Portuguese high school students and Liga et al. (2018) with Italian adolescents. Very recently, Šakan (2020) validated this scale on Serbian adolescents. The findings from these studies revealed that the BPNSFS can facilitate the assessment of the need satisfaction and frustration among Portuguese, Italian, and Serbian adolescents.

The BPNSFS is a self-report instrument measuring the satisfaction and frustration of the three basic psychological needs of autonomy, competence, and relatedness defined by SDT. It is now the unique and most widely used tool that addresses both need satisfaction and need frustration, as posited by SDT (Vansteenkiste et al., 2020). Originally validated in Dutch, English, Spanish, and Chinese, it recently has successfully been adapted for both western and non-western adult samples such as German (Heissel et al., 2018), Italian (Costa et al., 2017), and Japanese (Nishimura & Suzuki, 2016). The findings supported the 6-factor multidimensional structure of the scales (which discriminates between the satisfaction and frustration components for each need) in the original version (Chen et al., 2015) as well as in adapted versions on adults and adolescents (e.g., Cordeiro et al., 2016; Liga et al., 2018; Nishimura & Suzuki, 2016; Šakan, 2020), and provided evidence of the distinction between the satisfaction and frustration dimensions of needs. Accordingly, need satisfaction and need frustration should be conceptualized as substantively distinct constructs. Need dissatisfaction captures the feelings of absent need satisfaction rather than the active nature and intensity of need frustration (Chen et al., 2015). This prominent advantage of the scale allows further studies in the field to make a clear distinction between the lack of fulfillment of the needs and the experience of need frustration and insisted on their asymmetrical relationship (Bartholomew et

al., 2011). Previous studies also showed that low need satisfaction means failing to enhance human flourishing and healthy development, whereas the frustration of these needs increases the risk for ill-being (e.g., Chen et al., 2015; Warburton et al., 2020).

Based on the BPNSFS, Van der Kaap-Deeder et al. (2015) slightly simplified items to create a new Dutch version for children and adolescents. However, the psychometric properties of this scale were not sufficiently reported, with only the Cronbach's alpha found on the paper (Van der Kaap-Deeder et al., 2015). Later on, this Dutch version was translated into English; similarly, this English version has not been formally validated yet (Ghent University, n.d.).

### *The Present Study*

In Vietnam, there is a long tradition of thinking about basic psychological needs in psychology, attaching to the most well-known concept of Maslow's need theory (e.g., Dao, 2010; Le et al., 2019; Phan, 2018); very little is known about SDT. It is necessary to have an easily administered survey-based tool to pave the way for adolescents' studies on basic psychological needs, which may help form the basis for effective programming and policy in Vietnamese schools and communities. Therefore, this present study aimed to validate the English version of the Basic Psychological Need Satisfaction and Frustration Scale for Adolescents (BPNSFS-A; Ghent University, n.d.) on adolescents in Vietnam. First, we translated and examined the factor structure of the BPNSFS-A in a sample of Vietnamese adolescents. Second, we inspected whether the subscales of the BPNSFS-A differently predict well-being in adolescents. Third, the study also explored the relationship between need satisfaction/frustration with sociodemographic variables to confirm the universality of basic psychological needs.

## **Methods**

### *Participants and Procedures*

Adolescents were defined in this present study as 10- to 19-year-olds, which is consistent with the World Health Organization's (1986) definition of adolescence. Besides, confirmatory factor analysis (CFA) is based on large-sample theory and a large number of participants in each subgroup (most

typically >200; Cheng & Chan, 2004). Therefore, for the questionnaire adaptation process, the data were collected from adolescent students aged from 14–17 who were randomly selected from two secondary and two high schools of Thua Thien Hue Province, Vietnam. Four classes (approximately 45 students/class) were randomly selected in each school. All students in each class were invited to participate in the survey.

The assistance of four survey proctors and 16 main teachers was received during the administration. The survey script was read aloud by the proctors during administration. The classroom teachers or survey proctors may clarify or rephrase words if a student does not understand. The researcher was available in each class for about 10 minutes to answer any questions raised by the participants. Respondents were assured that participation in this survey was voluntary, with the return of completed questionnaires being taken as consent to participate. They were given clear instructions and enough time to complete the scale. A total of 680 adolescent students (males = 319; females = 461 and *Mage* = 15.14; *SD* = 1.08) responded to the survey appropriately. Data were stratified by urban/rural regions, gender, age, family structure, family size, rank in the family, family income, and academic achievement.

## Measures

### *Basic Psychological Need Satisfaction and Frustration*

BPNSFS-A (Ghent University, n.d.), which is composed of 24 items, was used to assess the adolescents' degree of satisfaction or frustration of three universal psychological needs: (a) autonomy (e.g., *I feel free to choose which activities I do.* vs. *I feel forced to do many things that I actually do not want to do.*); (b) competence (e.g., *I can do things well.* vs. *I feel insecure about what I am able to do.*); and (c) relatedness (e.g., *I have warm feelings towards the people I spend time with.* vs. *The people I spend time with don't like me.*).

The original version of the scale was translated into Vietnamese by the first author, who is knowledgeable about psychology and content area of the construct of the instrument in the desired target language. This English version was simultaneously translated into Vietnamese by the second translator,

who is not knowledgeable about psychology and the construct of the instrument but is familiar with colloquial phrases, idiomatic expressions, and emotional terms in common use in Vietnamese. The comparison of the two translated versions was made. Any ambiguities and discrepancies must be discussed and resolved to come up with a compromise in the final version. All these translation procedures were based on the suggestions of Sousa and Rojjanasrirat (2010).

### *Well-being*

The well-being of adolescents was measured using three scales, which were translated and validated in previous Vietnamese research (e.g., Tran, 2006; Nguyen & Nguyen, 2012). First, the self-rated version of Strengths and Difficulties Questionnaire (for adolescents aged 11–17 years; Goodman, 1997) was used to measure emotional and behavioral problems in adolescents. The SDQ is predictive of psychiatric diagnoses in many developed and developing countries, including Vietnam (Tran, 2006). It is composed of 25 items, which cover five areas of a child's strengths and difficulties: Emotional Symptoms (five items, e.g., *many worries, often seems worried*); Conduct Problems (five items; e.g., *often lies or cheats*), Hyperactivity/Inattention (five items; e.g., *easily distracted, concentration wanders*), Peer Problems (five items; e.g., *has at least one good friend*); and Prosocial Behavior (five items; e.g., *often volunteers to help others*). Response options for the 25 items were rated on a three-point Likert scale (0 = not true; 1 = somewhat true; 2 = certainly true). According to the manual, the Prosocial Behavior subscale is excluded in the calculation of the total score of difficulties (Goodman & Goodman, 2012). The Cronbach's alpha was .72 for the 20 items of difficulties.

For the Perceived Stress Scale (Cohen, & Williamson, 1988), a 10-item classic stress assessment instrument was used to estimate adolescents' perceived general level of stress. The target population is individuals with at least a junior high school education (Cohen, & Williamson, 1988). The respondents were asked about feelings and thoughts during the last month. For example, *"In the last month, how often have you felt that you were unable to control the important things in your life?"* The answers were rated on a

Likert scale ranging from 0=never; 1=almost never; 2=sometimes; 3=fairly often; 4=very often. This scale was underscored in the previous Vietnamese study on medical students by Nguyen and Nguyen (2012), with Cronbach's alpha of .71. In the present study, four positively-worded items with weak factor loadings and low corrected item-total correlation were removed. Only six negatively-worded items were kept with acceptable Cronbach's alpha of .65.

The Satisfaction with Life Scale (Diener et al., 1985), which includes five items, was used to measure the life satisfaction component of the subjective well-being of adolescents. The items were designed to assess the satisfaction with people's lives as a whole and do not assess satisfaction with specific life domains (e.g., *I am satisfied with my life; The conditions of my life are excellent*). Adolescents indicated how much they agree or disagree with each of the five items using a 7-point scale ranging from 7 (strongly agree) to 1 (strongly disagree). In Vietnam, this scale was underscored on medical university students in Nguyen and Nguyen's (2012) study with a satisfactory level of reliability (.75). In the present study, the Cronbach's alpha (.67) was acceptable.

### Data Analysis

To test the construct validity of the questionnaire, we submitted the data for CFA using Mplus 8.1 software to assess the goodness of fit of the model. The covariance matrix of the items was analyzed with the maximum likelihood method. Based on the findings from the previous research that the six factor-model was shown to be the best fitting one in adult and adolescent samples (e.g., Chen et al., 2014; Costa et al., 2017; Liga et al., 2018; Šakan, 2020), a multidimensional 6-factor structure, which discriminates between the satisfaction and frustration components for each need, was priorly tested.

Moreover, for the first effort at validating the scale in the Vietnamese adolescents, we tried to replicate some comparative models tested in previous studies (e.g., Costa et al., 2017; Chen et al., 2015; Šakan, 2020) to select the best-fitting one. First, a higher-order latent variable model was studied to determine if relationships between the six factors could be explained by two overarching constructs: need satisfaction and need frustration. Second, a global 2-factor structure representing need satisfaction and need frustration was estimated.

Third, a 3-factor model included three latent factors representing each of the needs, with satisfaction and frustration items loading together on the factor, representing that need being investigated. The model that provided better fit to the data was also tested for location, gender, and age. The ratio of Chi-square to its degrees of freedom ( $\chi^2/df$ ), comparative fit index (CFI), the standardized root-mean-square residual (SRMR), and root mean square error of approximation (RMSEA) were considered as the goodness of fit indices. The fit of the models was considered adequate when  $\chi^2/df$  was  $\leq 2.0$ ; CFI was  $\geq .90$ ; RMSEA was  $\leq .06$ , and SRMR was  $\leq .09$  (Hu & Bentler, 1999).

Reliability for the scale scores was measured via an internal consistency coefficient alpha (Cronbach, 1951). Although useful in assessing internal consistency, coefficient alpha is not without limitations, which, unfortunately, are often underappreciated (John & Benet-Martinez, 2000). To alleviate the limitations of coefficient alpha, as recommended by John and Benet-Martinez (2000), we evaluated the average inter-item correlation to estimate internal consistency instead of trying to achieve a particular level of Cronbach's alpha. According to Clark and Watson (1995), average inter-item correlations should fall between 0.15 and 0.50, as anything below 0.15 would be too broad of a construct, whereas anything above 0.50 would indicate redundancy of items on the scale.

For predictive validity testing, correlation and regression analyses were conducted to predict well-being outcomes (i.e., emotional and behavioral problems, perceived stress, and life satisfaction) in adolescents by need satisfaction/frustration. Multivariate analyses of variance (MANOVA) were used to test the relationship of need satisfaction/frustration with the sociodemographic characteristics. Considering the large sample size, a significance level of  $p < .01$  was put forward (Kim, 2015).

## Results

### Confirmatory Factor Analysis of the BPNSFS-A

Initially, Mplus produced marginally fit indices for the whole sample for the six-factor model, which differentiates between satisfaction and a frustration component within each of the three needs. Expectedly, the CFA revealed a satisfactory model fit (Table 1). A hierarchical model in which the three first-order

factors were produced by a higher-order factor of overall need satisfaction or need frustration closely reached goodness of fit index (Table 1). However, this hierarchical model did not fit the data as well as the 6-factor model ( $\Delta\chi^2 = 60.96$ ,  $p < .001$ ;  $\Delta CFI = .03$ ). Besides, as reflected in Table 1, compared to the 6-factor model, global model ( $\Delta\chi^2 = 590.04$ ,  $p < .001$ ;  $\Delta CFI = .39$ ) and 3-factor model ( $\Delta\chi^2 = 1176.595$ ,  $p < .001$ ;  $\Delta CFI = .44$ ) did not fit the data sufficiently. In sum, a comparison of all tested CFA models results in the conclusion that distinguishing between six factors within the BPNSNF-A best represents the data structure.

Further, data of the three subgroups (gender, location, and age) submitted for a CFA also showed that the model was valid for all three subgroups (Table 2). These findings further confirmed the construct validity of the questionnaire. The standardized loadings of this model are displayed in Table 3.

The estimated correlations between the factors are contained in Table 4. As can be seen, several of these inter-correlations between factors were quite meaningful.

The internal consistency for each scale is also reported in Table 4. They ranged between .50 and .56. Nevertheless, the mean inter-item correlation fell within the recommended range (Table 4).

### *Predictions of Well-Being*

As expected, need satisfaction and need frustration significantly predicted the well-being outcomes among adolescents in logic directions (Table 5). On the one hand, higher levels of competence need satisfaction predicted lower levels of emotional and behavioral problems and perceived stress and higher levels of life satisfaction in adolescents. Relatedness and autonomy need satisfaction only significantly predicted the achievement of more life satisfaction. The prediction of relatedness and autonomy need satisfaction on perceived stress and emotional/behavioral problems in adolescents were all non-significant. On the other hand, it was found that higher levels of frustration of need for autonomy, relatedness, and competence significantly predicted higher levels of emotional and behavioral problems and perceived stress in adolescents. Moreover, need frustration for relatedness

**Table 1**

*Fit of CFA Models of the BPNSFS-A*

Models	normed $\chi^2$	CFI	RMSEA	SRMR
Six factors	1.42	.92	.03	.04
Six factors + two higher order factors	1.45	.89	.03	.05
Two factors	3.42	.53	.06	.09
Three factors	3.47	.48	.06	.09

**Table 2**

*Fit of CFA Models of the BPNSFS-A in Subgroupst*

Models	normed $\chi^2$	CFI	RMSEA	SRMR
Female ( $n=361$ )	1.23	.94	.03	.05
Male ( $n=319$ )	1.17	.92	.02	.06
Urban ( $n=383$ )	1.27	.92	.03	.05
Rural ( $n=297$ )	1.22	.90	.03	.06
Age<15 ( $n=296$ )	1.38	.90	.04	.05
Age $\geq 15$ ( $n=384$ )	1.40	.90	.03	.05

**Table 3***Factor Loadings of 6-factor CFA of the BNSFS-General for Adolescents*

Items	Autonomy		Relatedness		Competence	
	S	F	S	F	S	F
1. I feel free to choose which activities I do.	.43					
2. I do the things I do because I really want to do them.	.38					
3. I choose to do the things I do because I want to do them.	.53					
4. I find the things I do really interesting.	.43					
5. Most of the things I do, I do because I have to.		.40				
6. I feel forced to do many things that I actually do not want to do.		.45				
7. I feel pressured to do too many things.		.59				
8. I do the things I do every day because I have to, not because I want to.		.31				
9. The people that I like, also like me.			.18			
10. I feel close to the people I care about.			.63			
11. I feel close to and connected with the people who are important to me.			.61			
12. I have warm feelings towards the people I spend time with.			.58			
13. I feel excluded from the group I want to be a part of.				.51		
14. I feel that the people who are important to me are unkind to me.				.44		
15. The people I spend time with don't like me.				.50		
16. I feel that the relationships I have with other people are easily broken.				.53		
17. I can do things well.					.49	
18. I am good at what I do.					.48	
19. I can achieve my goals.					.45	
20. I am good at difficult tasks.					.43	
21. I often have doubts about whether I'm good at things.						.41
22. I feel disappointed in a lot of things I do.						.48
23. I feel insecure about what I am able to do.						.45
24. I sometimes feel like a failure when I make mistakes.						.50

Note. S = satisfaction; F = frustration

**Table 4***Internal Consistencies, Descriptives, and Correlations of the CCQA Subscales*

	$\alpha$	Average $r_{\text{item,item}}$	$M$	$SD$	2.	3.	4.	5.	6.
Autonomy									
1. satisfaction	.50	.20	3.00	.66	-.15**	.39**	-.05	.35**	-.06
2. frustration	.50	.20	3.23	.65		.04	.38**	.01	.39**
Relatedness									
3. satisfaction	.55	.23	3.31	.68			-.18**	.35**	.05
4. frustration	.56	.25	2.73	.72				-.05	.36**
Competence									
5. satisfaction	.53	.22	3.04	.61					-.07
6. frustration	.52	.21	3.10	.67					

\*\* $p < .001$ ;  $p < .01$ ; \* $p < .05$ **Table 5***Correlations and Standardized Regression Coefficients Among Psychological Needs Satisfaction and Frustration and Adolescents' Well-Being*

		Satisfaction			Frustration		
		Au	Re	Comp	Au	Re	Comp
Emotional & behavioral problems	$r$	-.03	-.06	-.14**	.26**	.35**	.39**
	$\beta$	-.01	.00	-.10**	.07	.22***	.28***
Perceived stress	$r$	-.04	-.04	-.24**	.31**	.29**	.46**
	$\beta$	-.01	.03	-.21***	.14***	.10**	.35***
Life satisfaction	$r$	.21**	.28**	.23**	-.09*	-.18**	-.15**
	$\beta$	.10**	.19***	.19**	-.04	-.08*	-.11**

Au=Autonomy; Re=Relatedness; Comp=Competence

\*\* $p < .001$ ;  $p < .01$ ; \* $p < .05$ 

and competence was a significant predictor of reduced life satisfaction, but autonomy need frustration was not found to predict lower life satisfaction in adolescents. Most noticeably, competence satisfaction, and frustration seemed to be the strongest predictors for well-being in adolescents.

#### ***Psychological Needs Satisfaction and Frustration and Adolescents' Sociodemographic Characteristics***

MANCOVA was applied with eight sociodemographic variables (i.e., age, gender, family structure, family size, rank in the family, family income, location, and academic achievement) as independent

variables, and the need satisfaction and need frustration as dependent variables. No significant multivariate effects based on Wilk's lambda were found.

#### **Discussion**

Although the key concept "basic psychological needs" within SDT is widely applied in many studies in Western countries, not much is known about this theory in South East Asian region, and there is lack of empirical evidence to support the role of the satisfaction for basic psychological needs in the well-being of the adolescents in this region. This inspired



the adaptation of the BPNSFS-A to assess different dimensions of basic needs and their relationship with the well-being of Vietnamese adolescents.

The CFA findings from the whole sample and subgroups supported the 6-factor multidimensional structure of the BPNSFS-A. The comparison of alternative models further provided extensive support for the distinction between the satisfaction and frustration dimensions of needs, suggesting that need dissatisfaction and need frustration should be conceptualized as substantively distinguished constructs and that they should be measured and interpreted as relatively distinct motivational constructs (Bartholomew et al., 2011; Costa et al., 2014). These findings are consistent with the validity results of the original version (Chen et al., 2014) and recently-adapted versions (e.g., Cordeiro et al., 2016; Liga et al., 2018, Šakan, 2020).

Internal consistency reliability of each subscale through Cronbach's alpha was rather unsatisfactory, but through average inter-item correlations was satisfactory. All the values fell within the acceptable range, indicating that different items within each subscale were convergent to measure the same construct but there was no redundancy of wording or meaning across items (Clark & Watson, 1995). Besides, the low-to-moderate relationships among the six factors confirmed the distinction but correlation of the components of basic needs. These meaningful and logical relationships also provided evidence of the convergent validity of the adapted instrument.

Regression analysis concluded that satisfaction and frustration of three basic psychological needs (autonomy, competence, and relatedness) were the meaningful predictors of the well-being of Vietnamese young people. Noticeably, the frustration of three basic needs predicted well-being to be stronger than the satisfaction of these basic needs. Specifically, on the one hand, adolescents whose needs for competence, autonomy, and relatedness were more satisfied tended to experience greater life satisfaction than those whose needs were less satisfied. Further, adolescents with higher levels of satisfaction for competence were less likely to engage in perceived stress and emotional/behavioral problems. On the other hand, adolescents with higher levels of frustration of autonomy, relatedness, and competence were more likely to experience more perceived stress and emotional/

behavioral problems. Moreover, higher levels of frustration of relatedness and competence contributed to the prediction of the lower levels of life satisfaction in adolescents. These findings support the conclusion that these needs must be continuously satisfied for people to maintain optimal performance and well-being (Deci & Ryan, 2000; Tay & Diener, 2011), and that need satisfaction may be a resilience factor and need frustration a risk factor among adolescents as suggested by previous research (Liu & Chung, 2014; Yu, Wang, & Zhang, 2016; Cordeiro et al., 2016; Liga et al., 2018).

MANOVA showed that need satisfaction and need frustration did not vary along the sociodemographic characteristics (i.e., age, gender, family structure, family size, rank in the family, family income, location, and academic achievement). This finding strongly confirms that these needs are universal, innate, and psychological, as proposed by Ryan & Deci (2000).

### **Limitations and Directions for Future Research**

Several limitations to this preliminary study need to be acknowledged. First, the present study was based on self-reports that suffer from disadvantages that may affect the results (e.g., exaggeration, over, or under-report behaviors due to social desirability). Future research should include various data collection methods like questionnaires, structured interviews, and mixed analysis to reduce the impact of these biases. Second, these findings are limited by the use of a cross-sectional design. The relationship among basic psychological need satisfaction/frustration and well-being should be interpreted in a cautious manner. This is another area where future research should implement a longitudinal design. Third, Cronbach's alphas of subscales were lower than expected. When there are a small number of items in the scale (fewer than 10), Cronbach's alpha values can be quite small. It is also noted that this was the first effort in adapting this assessment tool for exploratory purposes to understand the basic psychological needs of Vietnamese adolescents in the relationship with well-being. There is more work to be done before this tool is complete. Future research should re-evaluate reliability and validity. Other types of validity, test-retest reliability should also be included in future research.

## Conclusion

The purpose of this study was to provide the initial construct validity of the Vietnamese adapted version of the BPNSFS for adolescents. The findings showed that the Vietnamese version of the BPNSFS-A had the same six-factor structure as that found in the original version for adults (Chen et al., 2015), assessing six different but related dimensions: autonomy satisfaction, autonomy frustration, relatedness satisfaction, relatedness frustration, competence satisfaction, and competence frustration. The results also provided evidence of acceptable internal consistency through Cronbach's  $\alpha$  and mean interitem correlation. In sum, though there are some limitations, this study succeeded in providing a promising instrument to measure need satisfaction and frustration among Vietnamese adolescents, which may also pave the way for future studies in this field in Vietnam. Moreover, it could be useful for assessing and evaluating the effects and results of need-based intervention programs.

Besides, the findings suggest that the satisfaction and frustration for each need might be treated separately and support the conclusion that obtaining satisfaction and overcoming the frustration of basic psychological needs for autonomy, competence, and relatedness is a way to achieve better well-being in adolescents. These findings may provide important implications for programs using SDT to enhance well-being in adolescents. Such programs should be tailored to both promote need satisfaction and reduce need frustration of autonomy, competence, and relatedness. Such comprehensive interventions could be utilized to enhance adolescents' well-being. Besides, need frustration had a stronger relationship with ill-being compared to need satisfaction; therefore, more focus should be put on overcoming need frustration to decrease symptomology. Especially, the results might also imply that to decrease distress in adolescents, the major effort should be placed on enhancing competence satisfaction and reducing competence frustration.

## Acknowledgment

This research is supported by the VLIR-IUC Program Hue University (iuc.hueuni.edu.vn). We are grateful to the schools and students participating in this study.

## Declaration of ownership:

This report is my original work.

## Conflict of interest:

None.

## Ethical clearance:

This study was approved by my institution.

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