The Turkish Language Adaptation of the Wellness Self-Perceptions Scale: A Validity and Reliability Study

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Abstract

Purpose*: The aim of this study is to examine the validity and reliability of the Turkish version of Wellness Self-Perceptions Scale (WSPS).*
Methods*: Five hundred fifty-five university students voluntarily participated in this study. WSPS consists of 15 items and 5 factors (Emotional, Intellectual, Physical, Social and Spiritual Wellness). For each factors and for the general of the scale, total scores of the items were evaluated. Exploratory factor analysis (EFA) and confirmatory factor analysis were applied to evaluate the validity of the scale.*
Results*: After the EFA, Kaiser-Meyer-Olkin was found 0.86; and Cronbach Alpha internal consistency of total scale was found 0.86.*
Conclusion*: WSPS, which was translated into Turkish, was proved to be a scale that can be used to evaluate "wellness" with five dimensions (emotional, intellectual, physical, social, and spiritual). We think that our study contributes to the literature on health behavior in the workplace by providing a theory-based approach to analyzing personal and attitude variables of WSPS.*

Keywords*: Wellness Self-Perceptions Scale, Questionnaire, Validity, Reliability*

Introduction

Although health is described as the state of being physically, socially, and spiritually well by the World Health Organization (WHO), the health concept has started to be mentioned together with wellness, recently [1]. The idea of wellness first coined in the USA as an integrated health concept. However, this concept is constantly changing. The word ''wellness'' comes from a combination of "well-being" and "fitness" [2]. Wellness is considered as constructing a lifestyle aiming to keep and promote the physical, mental and spiritual health in balance [2]. The definition of health as the state of being "completely well" was heavily criticized by many scientists, because they say that nobody can be in such a state at a given time. It was emphasized that a person can be considered as ''healthy'' as long as he is productive. The state of being well is evaluated as a concept which means being well in every aspect of life and that is explained with many models [3]. The studies on the state of being well described as wellness in today's world started in 1961 with Dr. Halbert Dunn's works. Other researchers, such as Ardeu (1977, 1982), Hettler (1980, 1984), Hind (1983), Jourard (1963, 1971), Maslow (1968), Travis (1981) and Travis and Ryan (1988), formed a theoretic frame of the state of being well [4]. The common concept which is shared by all researchers is that the state of being well is a lifestyle where the individual plays an active role in determining the level of his own well-being. Myers, Sweeney and Witmer [5] described wellness as "the state of being well and a lifestyle in which there is a tendency for optimum health both mentally and spiritually so as to lead a fully-functional life in the social and natural environment". Myers et al. [6] define wellness in-depth as feeling valuable, controlling his feelings, thinking realistically, feeling psychologically well, having a good sense of humor, balanced nutrition, doing exercise, self-care skills, stress management, and being good at gender-identity and cultural-identity. Wellness is the state when the person feels well so as to perform his aims and goals in his life. It can also be defined in another way as the person's efforts to improve his emotional, intellectual, social, and physical skills to lead a more qualified life [1]. Emotional wellness is the effort to overcome daily feelings and environmental challenges. To be able to do this, one needs to have a strong psychological background.

Being psychologically strong implies the person's skill to overcome very harsh conditions in daily life and be able to adapt to these situations. This also requires having some talents like problem solving and good communication skills. Intellectual wellness, on the other hand, is regarded as having skills like reasoning and thinking, which would be consistent with the population for her/his age, and using them, like problem solving or reasoning, at an optimum level. It can also be defined as having an overall group of information that is learned to promote the quality of daily life [1]. In terms of health, wellness means taking precautions so as to promote the quality of life by taking their own responsibilities, and at the same time, making this highly-qualified life-style sustainable. Mayers et al. [5] stated that wellness was also necessary for the protection from the diseases as well as supporting the treatment of physical or mental illnesses. Wellness, in terms of social life, means showing effort to have a good communication with others for a more qualified life. The expression "wellness is being fully well in terms of social life" defined by WHO is based on the individual's being healthy in his social environment [7].

Industrialization and technological developments have decreased the need for man power and this has led to having much more leisure time. As a result of this, man has become inactive and therefore the frequency of health problems due to this immobile life style has increased. Leisure time activities have become a business, especially in developed countries, so as to stay fit and healthy and to decrease illnesses caused by immobility. The fitness centers, nature activities, active life events in hotels in tourism business have become frequently-used places in order to support the physical, social and mental developments of people. Determining the emotional, intellectual, physical, social and spiritual wellness level of the people in the society will have a positive effect on organizing activities for the need. The determination of the wellness level, which is performed in developed countries, has become a must for our country, too. Academic papers on the subject of health, wellness, well-being and quality of life reveals confusion, as researchers frequently describe each of these different, yet in a similar manner. In addition to personal differences, it was argued that elements such as the context and target population in which the term wellness is used are critical for our understanding of the construct. While it is inevitable that cross-over exists between similar constructs, wellness does have distinctly identifiable features. These include feeling psychologically well, having a good sense of humor, balanced nutrition, doing exercise, self-care skills, stress management, and being good at gender-identity and cultural-identity [6].

Cultural identity is not only identified who the person is, but it also affects all the aforementioned characteristics of wellness. Even the term wellness cause confusion; the aim to measure to that concept is complicated. In the literature there are many scales that tried to measure all the features of wellness. Each of these scales are predominantly focus on different characteristics of wellness rather than measure it as a whole. Wellness is commonly conceptualized as having many dimensions, but little effort has been made to evaluate how physiological and psychological dimensions are related to overall wellness. That is why Corbin et al wellness scale was found to be integrated all the features of wellness that college students feel for [8]. In addition, that scales has been widely used in Exercise and Sports Science.

Objectives

Only a limited number of scales are available to evaluate the multi-dimensional wellness in the fitness and wellness business. However, it takes too much time to reply all the questions in such scales, and it makes the participant bothered because of the numerous questions both in sub-dimensions and in total. Within this context, the aim of this study was to assess both validity and reliability of the Wellness Self-Perceptions Scale (WSPS) developed by Corbin et al. [8]. It is a scale consisting of 15 items and 5 factors; and can be carried out easily by the university students studying sport sciences as well as people in fitness and wellness business.

Materials and Methods

Participants

Prior to the study, an approval was obtained from the local ethical committee. The experimental group consists of 555 university students (74.4% male, 25.6% female) from School of Physical Education and Sports of Halic University (n=379) and Istanbul University (n=176). The participants were from the departments of Sport Management (39.6%), Coaching Education (47.2%), and Recreation (13.2%). The students were at 1st (25.9%), 2nd (27, 6%), 3rd (24.7%) and final year (21.8 %) grades. The mean age of participants was 22.5 ± 2.4 years. Prior to the study, an approval from the local ethical committee has been obtained. All the participants were given written instructions about the study, and only the ones who accepted to participate were included.

Measures

The data was collected by Wellness Self Perceptions Scale (WSPS) which was developed by Corbin et al. (2006). This is a 4-point Likert-type scale which in the response choices consisted (1) I do not agree at all, (2) I do not agree, (3) I agree, (4) I definitely agree, to each question. The original scale has 15 items and 5 factors. The complete scale was presented in Table 1. Importing a scale for use in another language or culture often requires considerable effort by researchers to maintain the quality of translation [9]. The items in the scale were translated into Turkish by a lecturer, who is a native Turkish speaker and an authority in his field, but at the same time using English at the professional level. Then, an adaptation form on which Turkish-English statements together was created. One of the most commonly used methods for determining the content validity of scales is to take the opinions of experts [10]. For this purpose, the draft scale items were sent to three experts to be assessed in terms of content. These academicians were asked to confirm the translation by evaluating every English item and its Turkish version in this form as 1 (it is not appropriate) and 10 (it is completely appropriate). The experts scored the items of the translation into Turkish by looking at the English statement which was written right below. When these scores by the experts were examined, it was observed that the lowest appropriateness score was 8; and the statement which has the lowest score average among other statements was determined to be 8.7±1.2. The scale was applied only after the statements with the score 8 were changed by replacing with more appropriate words suggested by the experts.

Some factors formed by combining the consecutive triple items in the scale as follows: The first 3 items in the scale is (1-3) the factor for Emotional Wellness; the next 3 items (4-6) is the factor for Intellectual Wellness, the next 3 items (7-9) is the factor for Psychical Wellness, the following 3 items (10-12) is the factor for Social Wellness; and the final 3 items formed the factor for Spiritual Wellness (Table 1). All the items in the scale have positive meanings and a high score is interpreted as a high level of wellness. Total scores of the items were evaluated for each factor as well as for the scale, in general.

Statistical Analysis

SPSS 15.0 (Statistical Package Program for Social Science) program and Lisrel 8.71 [11] programs were used for the analysis of the data. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were carried out for the validity analysis of the scale (See Step 1 and Step 2 below). EFA is a type of multivariate statistics which aims to find out conceptually new variables (new factors, sub-dimensions) by gathering P variables connected with each other. A process which is intended to find factors from the connections among the variables is carried out in the EFA. While analyzing the factor, the researcher minded about excluding the item that doesn't measure the same structure, caring the factor loads to be high (even though 0,45 or above is desirable, it can be lowered to 0.30); and it was also cared that the items had high factor loads in one factor, on the contrary, they had low factor loads in other factors (Factor difference should be the least 0.10 with the factors except the factor which had the highest factor load of every item) [10].

In Confirmatory Factor Analysis (CFA), the following adaptation indexes were used for the evaluation of the model adaption: K-square statistics (X^2), the rate of K-square statistics over the degree of freedom (X^2/sd), statistical significance of the estimated parameters (t value),"based on residuals"(SRMR-standardized root mean residuals, GFI-goodness of fit), "based on independent model" (NFI, NNFI, CFI) and "root mean square of error of approximation (RMSEA)" [12].

In the reliability work, total item correlation, one of the item analysis methods, Cronbach Alpha were applied. Total-item correlation, one of the item analysis methods, explains the relation between the scores that are taken from the test items and the total score of the test. If the total-item correlation is positive and high, it means that items exemplify similar attitudes and this shows that the internal consistency is high. So, it can be said that the items whose total-item scores were higher than 0.40 distinguishes the participants effectively. However, if the scores of the items stay between 0.20-0.30, they can be tested if necessary [10]. Cronbach's test was applied in the reliability analysis of this method. Cronbach's alpha test was expected to be above 0.70 [10].

Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA):

In Step 1, the Turkish adaptation of the WSPS is used and tested with a principal component analysis. In Step 2, on the other hand, the structural validity of the WSPS was tested with confirmatory factor analysis.

Step 1: Structural Validation of the WSPS by EFA

Participants: Participants in this study were 379 volunteer students (55 women, 324 men) at the Haliç University. Their ages ranged from 18 to 30 years old (M = 22.5; SD = 2.4). 25.4% of the students were in the first grade, 28.2% were in the second grade, 26.2% were in the second grade and 20.2% were in the fourth grade. The subjects were recruited with face to face interviews.

Procedure: Participants provided their age and gender. Then, they filled out the 15-item version of the WSPS. The instruction given to the subjects was: "Assess your reactions to each proposition by using the scale (scale was shown to the participants). Tick the number that best fits to you, in general. For each item, please answer about your wellness." So, for each item, they answered a 4-point Likert scale (1 = strongly disagree; 2 = agree; 4 = strongly agree).

Step 2: Factorial Confirmation of the WSPS by CFA

Participants: Participants in this study were 176 volunteer students (87 women, 89 men) at the Istanbul University. Their ages ranged from 18 to 28 years (M = 22.4; SD = 2.5). 26.6% of the students were in the first grade, 27.2% were in the second grade, 20.8% were in the second grade and 25.4% were in the fourth grade. The subjects were recruited with face to face interviews.

Procedure: Participants provided their age and gender. Then, they completed the 15-item version of the WSPS. The instruction given to the subjects was: "Assess your reactions to each proposition by using the scale (scale was shown to the participants). Tick the number that best fits to you. For each item, please answer about your wellness. We used AMOS 22 software to run the confirmatory factor analysis in order to test the factorial validity of the WSPS. The standard method of estimation in structural equation modeling is maximum likelihood, which is based on an assumption of multivariate normality of the manifest variables. However, not taken into account to the multivariate normality is an error that is frequently made when performing confirmatory factor analysis. In our case, multivariate kurtosis was high, with a Mardia's coefficient of 26.6, which clearly indicates a lack of multivariate normality. This gives us a non-optimal data distribution. Because of this, categorization problems are likely to be expected. If we are going to use a non-standard data set, we need to use the appropriate formula(s), which aim to correct the lack of multivariate normality when performing confirmatory factor analysis. For the present case, the most appropriate approach is to use an estimation method that makes no distributional assumptions, such as the un weighted least squares (ULS) estimation method. Items referring to emotional behaviors with varying frequency make multivariate non-normality problems highly likely. The covariance matrix might not be as asymptotically distributed as chi-square with the ULS method. Therefore, we used the following fit indexes to verify the tested models: (a) Goodness of Fit Index (GFI), (b) Adjusted Goodness of Fit (AGFI), (c) Parsimony Goodness-of-Fit Index (PGFI), and (d) Parsimony Ratio (PRATIO). GFI is an absolute fit index developed by Jöreskog and Sörbom [11] with a corresponding adjusted version, the AGFI, developed to incorporate a penalty function for the addition of free parameters in the model. Both GFI and AGFI have values between 0 and 1, with 1 indicating a perfect fit. A value of 0.80 has usually been considered as the minimum for model acceptance. PGFI and PRATIO are parsimony-based fit measures. Absolute fit measures assess the fit of a model per se without reference to other models that could be relevant in the situation. Parsimony-adjusted measures introduce a penalty for complicating the model by increasing the number of parameters in order to increase the fit. Usually, parsimony fit indices are much lower than other fit measures. Values larger than 0.60 are generally considered satisfactory.

Results

Step 1:

Analysis of Data: To investigate the factor structure of the data, we conducted a principal component analysis, including a promax rotation with Kaiser normalization on the 15 items. We choose promax rotation as we have expected correlations among the factors. Before performing the analysis, we examined the skewness and kurtosis of the data. All parameters were between -1 and +1, indicating that the data are univariately normally distributed.

Principal component analysis: The Kaiser–Meyer–Olkin (KMO) showed that the measure of sampling adequacy was 0.83. Five factors, which accounted for 67.5% of the total variance, were extracted from the analysis. We kept items that loaded only on one factor (>0.40) [11]. Moreover, an Eigen value-plot indicated a five-factor solution with decreased trend. We thus examined a five-factor solution, that accounted for 67.5% of the total variance and that allowed for the removal of 15 items (see Table 1).

Descriptive statistics (Table 2 and Table 3): Table 2 displays the descriptive statistics and scale score reliability coefficients of the WSPS components. With a value of Cronbach's alpha higher than 0.70 for all five factors, the scale demonstrates good scale score reliability for the Emotional Wellness (3 items), Intellectual Wellness (3 items), Physical Wellness (3 items), Social Wellness (3 items) and Spiritual Wellness (3 items) [8]. Higher scores on these dimensions refer and interpreted to greater feelings of wellness. The Cronbach's Alpha (if item deleted) are reported and showed satisfactory reliability. Table 3 shows the positive intercorrelations among all the factors.

Interpretation:

Step 1 revealed a five-factor structure, which corresponds to the Emotional, Intellectual, Physical, Social and Spiritual Wellness. The analyses also revealed good scale score reliability.

Finally, the intercorrelations showed that social wellness is associated with higher physical wellness and spiritual wellness.

Table 1: Principal Component Analysis of 15-Item WSPS (n=379)

	F1	F2	F3	F4	F5
Emotional Wellness					
1. I am happy most of the time.	**.81**	.30	.29	.26	.42
2. I have a full self-esteem.	**.78**	.32	.38	.35	.24
3. I do not generally feel stressed.	**.81**	.15	.07	.21	.16
Intellectual Wellness					
4. I am well informed about current events.	.16	**.75**	.05	.18	.29
5. I am comfortable expressing my views and opinions.	.29	**.82**	.37	.37	.17
6. I am interested in my career development.	.29	**.79**	.54	.38	.40
Physical Wellness					
7. I am physically fit.	.29	.36	**.77**	.27	.34
8. I am able to perform the physical tasks of my work.	.21	.25	**.89**	.39	.29
9. I am physically able to perform leisure activities.	.20	.26	**.83**	.51	.34
Social Wellness					
10. I have many friends and am involved socially.	.38	.35	.41	**.83**	.30
11. I have close ties with my family.	.23	.18	.32	**.76**	.46
12. I am confident in social situations.	.24	.45	.42	**.82**	.32
Spiritual Wellness					
13. I am fulfilled spiritually.	.35	.38	.39	.47	**.68**
14. I feel connected to the world around me.	.25	.22	.23	.35	**.83**
15. I have a sense of my purpose in my life.	.24	.35	.48	.28	**.74**

Table 2: Descriptive Statistics, Reliability Measures of the Five Factors of the WSPS (n=379)

	Number of items	Range of Factor Loadings of items	α (%95 CI)	α (if item deleted)	Mean (SD)	Range (Min-Max)
Emotional Wellness	3	.78-.81	.71(.66-.76)	.59-.66	3.1(.6)	1-4
Intellectual Wellness	3	.75-.82	.71(.65-.86)	.54-.73	3.2(.6)	1-4
Physical Wellness	3	.77-.89	.81(.77-.84)	.66-.81	3.6(.5)	1-4
Social Wellness	3	.76-.83	.75(.70-.79)	.63-.70	3.4(.6)	1-4
Spiritual Wellness	3	.68-.74	.67(.60-.72)	.60-.72	3.2(.6)	1-4

Table 3: Interco relations Between Five Factors of WSPS (n=379)

	EW	IW	PW	SOW	SPW
Emotional Wellness		.30**	.27**	.35**	.37**
Intellectual Wellness			.35**	.41**	.40**
Physical Wellness				.47**	.44**
Social Wellness					.49**
Spiritual Wellness					
*p<.05 **p<.01					

Step 2:

The model with the five factors (Emotional, Intellectual, Physical, Social and Spiritual Wellness; Default Model), was tested in a confirmatory factor analysis (see Figure 1). We also assessed the fit indexes of two other models: default model, saturated model and independence model. Table 4 displays the fit indexes of the three models. It was found that the current (default) model is better than the independent model, because of having better fit indexes, though the independence model had good fit indexes, too. In addition, default model compliance indices were also acceptable.

Descriptive statistics: T

able 5 displays the descriptive statistics and scale score reliability coefficients of the WSPS components. With a value of Cronbach's alpha higher than 0.70 for all five factors, the scale demonstrates good scale score reliability for the Emotional Wellness (3 items), Intellectual Wellness (3 items), Physical Wellness (3 items), Social Wellness (3 items) and Spiritual Wellness (3 items) [8]. Higher scores on these dimensions refer, to greater feelings of wellness. The Cronbach's Alpha (if item deleted) are also reported and show satisfactory reliability.

Interpretation

With a confirmatory analysis, we tested the factorial structure of the WSPS. The findings showed that the five-factor structure fit indexes.

Table 4: Fit Index Values for the Models Tested (ULS) (n=176)

	GFI	AGFI	PGFI
Default Model	**.98**	**.97**	**.65**
Saturated Model	1.00		
Independence Model	.52	.45	.46
ULS: Unweighted Least Squares, GFI: Good Fit Index, AGFI: Adjusted Goodness of Fit, PGFI: Parsimony Goodness of Fit Index			

Figure 1. Confirmatory factor analysis for the five-factor model (with standardized factor loading).
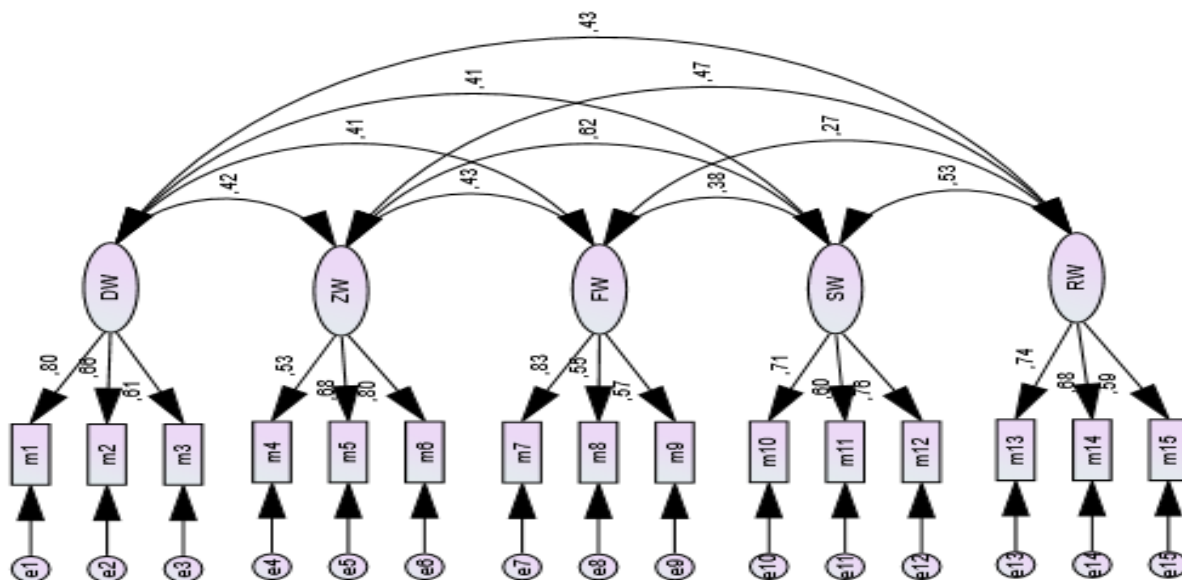
Table 5: Descriptive Statistics, Reliability Measures of the Five Factors of the WSPS (n=176)

	Number of items	α (%95 CI)	α (if item deleted)	Mean (SD)	Range (Min-Max)
Emotional Wellness	3	.72(.64-.78)	.60-.66	3.1(.6)	1-4
Intellectual Wellness	3	.72(.63-.78)	.51-.71	3.3(.6)	1-4
Physical Wellness	3	.70(.61-.76)	.50-.70	3.5(.5)	1-4
Social Wellness	3	.73(.65-.79)	.60-.68	3.4(.5)	1-4
Spiritual Wellness	3	.71(.63-.78)	.50-.58	3.2(.6)	1-4

Discussion

The validity and reliability analysis of the Turkish version of Wellness Self-Perception Scale (WSPS), which is used to evaluate the emotional, intellectual, physical, social, and spiritual dimensions, was conducted so as to be used in the Turkish population. When the EFA statistics of the WSPS scale was studied; EFA and CFA were used in the structure validity of these 5 factors of WSPS. For the structure validity works, this method (applying CFA after EFA) is the commonly accepted one [13]. In our study, it was observed that the EFA was suitable to be used to analyse the data gained from our sample. According to the EFA results, it was determined that all the items in the scale belonged to the factors and the total variance that was explained was found to be at a sufficient level. At the end of the EFA, WSPS was found to be coherent to its original English language structure. It was accepted that this 15-item scale had five factors whose eigenvalue was higher than 1. The total variance was sufficient (67.5%). In the CFA of the WSPS, the adaptation indexes were found to be either coherent or very coherent. According to Bayram [12], it can be concluded that the adaptation indexes, which were obtained related to the adaptation of the model established in the CFA, should be in the range of acceptable values and be very coherent. For the reliability work of the scale, item-total analysis, one of the item analysis methods. The Cronbach's Alpha (if item deleted) are reported and show satisfactory reliability. These results illustrate that the validities of the items in the scale were high enough and they can distinguish the individuals in accordance with their WSPS**,** and the items in the scale can be evaluated as the items to measure the same attitude. To conclude, the values of reliability and validity of the WSPS were found to be acceptable.

Conclusion

Principal Component Analysis revealed a five-factor structure, which corresponds to the Emotional, Intellectual, Physical, Social and Spiritual Wellness factors. The analyses also revealed a good scale score reliability. The inter-correlations showed that social wellness is associated with higher physical and spiritual wellness. With a confirmatory analysis, we tested the factorial structure of the WSPS. The findings showed that the five-factor structure fits the indexes.

Recommendations

We think that these results should also be taken into consideration for designing educational programs and interventions. Our study may contribute to the literature on health behavior in the workplace by providing a theory-based approach and analyzing personal and attitude variables of "wellness self-perceptions"**.** Future research studies, which should be conducted on larger student populations from different universities and departments, are needed to evaluate the reproducibility of our results.

Competing interests

The author has declared there is not any potential conflict of interests concerning this article.

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