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Psychometric Properties of Instruments Assessing Psychosocial Predictors of Coronary Heart Disease

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This study was designed to translate the instrument used to assess the risk and protective predictors of Coronary Heart Disease (CHD) into the Urdu language and to determine their psychometric properties. The majority of the Pakistani population lacks fluency in English and that reprimands a toll that must be used in the indigenous local language. The investigation included 42 participants while the entire process of translation carried 10 sequential stages. The study sample included 20 bilingual cases, ages ranging from 35 to 55 years, who were matched on gender and obtained from the community controls group. Psychosocial measures proposed on the basis of literature review to assess risk and protective predictors of CHD included: The Perceived Stress Scale

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(Cohen, Kamarck, & Mermelstein, 1983); Center for Epidemiological Studies Short Depression Scale (Radloff, 1977); State-Trait Anxiety Inventory (Spielberger, 1983); State-Trait Anger Expression Inventory (Spielberger, 1988); Personality Deviance Scale-Revised (Bedford & Foulds, 1978); Revised Life Orientation Test (Scheier, Carver, & Bridges,1994); Perceived Locus of Control Scale and Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988). To ensure a rigorous process of translation and to achieve equivalence between the original version and translated versions of scales, Vallerand's (1989) steps for instrument translation with slight modification were employed. The results showed that there were no significant differences in the mean scores of English and Urdu versions on any of the scales, suggesting similar dissemination of the content of the scales in Urdu and English. Pearson correlation analysis between pre (English) and post-administration (Urdu) revealed a significant positive correlation demonstrating reasonably high validity for all the scales. The alpha coefficients revealed moderate to high level of internal consistency of all scales for both administrations respectively. The translated instruments can be used in the routine medical assessment to assess the risk and protective predictors of CHD.

Keywords: Coronary heart disease, perceived stress, perceived locus of control

Recent advancements in research on CHD have evolved by integrating multiple psychosocial and behavioural factors, besides biological factors that have been responsible for the progression and onset of CHD. There has been a large volume of clinically impressive research evidence that confirms the role of psychosocial risk factors that are involved in the etiology of CHD (Strike & Steptoe, 2004; Rosengren et al., 2004). Researchers have demonstrated that the risk of psychosocial factors in the onset of CHD is greater than clinical or demographic factors in some cases of CHD (Kubzansky & Kawachi, 2000).

Research evidence shows that many psychosocial factors have been extensively studied in relation to CHD. Negative emotional states (State-Trait Anxiety) and traits have been extensively studied in relation

to CHD (Kubzansky & Kawachi, 2000). Researchers investigating anger and hostility have predominantly preferred Spielberger State-Trait Anxiety (STAI) and Spielberger's Anger Scales (STAXI) as measure instruments (Raikkonen, Matthews, Sutton-Tyrrell, & Kuller, 2004). Hostility and dominance both have also been measured by subscales of

Bedford-Foulds Personality Deviance Scales (Whiteman, Deary, & Fowkes, 2000). The Revised Life Orientation Test (LOT-R) has been extensively used to measure optimism in cardiovascular research (Robbins et al., 1991). Diverse measures to assess depression and its association with cardiovascular diseases have been employed namely the Center for Epidemiological Studies Depression Scale (CES-D) (Blumenthal et al., 2003), Beck Depression Inventory (BDI) (Lauzon et al., 2003), Hospital Anxiety and Depression Scale (HADS) (Mayou et al., 2000) and Depression Anxiety and Stress Scale (DASS) (Baker, Andrew, Schrader, & Knight, 2001).

Likewise, many measures have been employed to measure perceived stress in cardiovascular research like The Reeder Stress Inventory (Macleod et al., 2002) and 50 item Life Inventory (Sweeting & West, 1994), Hassles Scale (Reich, Parrella, & Filstead, 1988), and Stress Reaction Scale (Robbins et al., 1991).

Perceived Control/locus of control in relation to health and particularly CHD have been measured by questions adapted from the Whitehall II Study (Marmot et al., 1991). Since then, many studies have utilized these questions to address issues relating to CHD (Yusuf et al., 2004). Perceived Social Support has been measured by a subscale of the Interpersonal Support Evaluation List (Chen, Gilligan, Coups, & Contrada, 2005) and the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988).

Ischemic Heart Disease (CHD) occurs to a greater extent in developed than developing countries like Pakistan. Our understanding of risk factors leading to this disease thus is largely derived from studies carried out on samples obtained from developed countries. As the instruments used to assess the risk and protective psychosocial factors associated with CHD are not in the indigenous language, most of the

research carried out in Pakistan has focused on biological and behavioral predictors of CHD (Rosengren & Wilhelmsen, 1997).

Since the prevalence of CHD in Pakistan is growing, it seems pertinent to infer psychosocial factors of CHD besides the traditional factors within the Pakistani population. This goal can be achieved if we can translate these psychosocial measures into Urdu language and establish psychometric properties.

So this study was designed with a primary purpose to ensure the rigorous process of forwarding and backward translation and to achieve equivalence between the original version and translated versions of scales. The purpose was to decrease the risks of errors and improve the precision of translations through the process of forward and backward translation. A secondary objective was to determine the psychometric properties of the translated instruments through the process of validation.

Method

This study was designed to translate all the original scales into Urdu language and determine their psychometric properties, through the process of content validation. The forward-translations and back-translations were the methods employed.

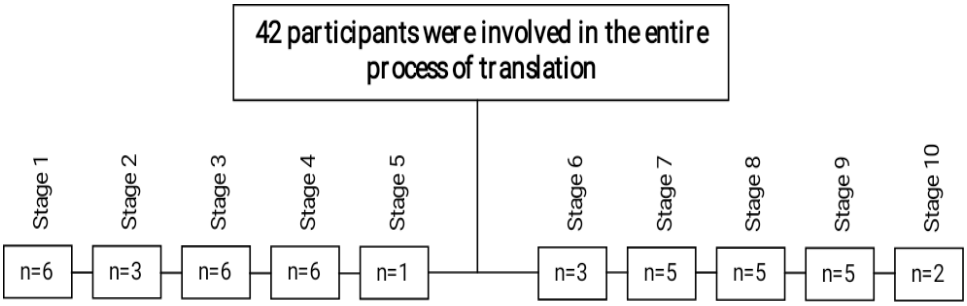


Figure 2.1. Flow chart depicting the total number of individuals involved at different stages of the process of tool translation.

Determination of Psychometric Properties of the Scales

Sample

The study sample included 20 bilingual cases, both men and women, age ranging between 35 to 55 years, taken from two leading Cardiac hospitals of Lahore. The research participants were systematically matched on gender and were recruited through a non-probability purposive sampling strategy.

Inclusion Criteria

Cases were recruited only if they had Angina with chest pain, or chest pain established as Angina or patients with the first onset of acute myocardial infarction (AMI), whose diagnoses had been confirmed by the cardiologists on the basis of clinical symptoms or changes in the electrocardiogram, or raised concentration of troponin levels. Angina and AMI patients experiencing the clinical conditions for the first time were included in the study.

Exclusion Criteria

Patients experiencing the following sign and symptoms were not included in the study sample: patients who had undergone cardiogenic shock or chest pain due to non-cardiac reasons; patients suffering from a significant chronic medical illness, pregnant females, as well as patients with a prior psychiatric history; Patients, having a previous history of treatment for heart disease like Coronary artery bypass graft (CABG) surgery; participants failing to provide informed consent and patients who were unable to read or write exclusively Urdu or English language.

Community-based controls recruited in the study were attendants, visitors or relatives of the cardiac patient, unrelated (not first-degree blood relatives) having no previous diagnosis of heart disease or history of exertional chest pain. Exclusion criteria followed for community controls were the same as that set up for the cases.

Instruments

The instruments listed below were translated into Urdu and semi-standardized.

The Perceived Stress Scale (PSS). Cohen, Kamarck, and Mermelstein (1983) developed The Perceived Stress Scale (PSS)

comprising of 10 item scale. Each item is measured on a 5-point Likert-type scale (0 = never, 4 = very often). The PSS has four positively worded items (4, 5, 7 & 8) that are reversed scored. A total score on the scale is obtained by adding all scores across the 10 items. The internal reliability of the scale has been found to be 0.78 (Cohen & Williamson, 1988).

Center for Epidemiological Studies Short Depression Scale (CES-D 10). Radloff, (1977) developed this 10-item scale to measure self-reported depressive symptoms Items on the CES-D 10 use a 4-point Likert-type scale (0 = rarely or none of the time and 3 = all of the time). Two items (5 & 8) are reverse scored, and the total score is obtained by summation of scores of these 10 items. The scale has high reliability (α = .85) for general population (Fisher & Corcoran, 1994). The scale has good concurrent validity, known- group validity, and discriminant validity (Fisher & Corcoran, 1994).

State-Trait Anxiety Inventory (STAI). In 1983, Spielberger developed 20-items State-Trait Anxiety Inventory (STAI) to measure the general tendency to respond to perceived threats in the environment with anxiety. Each item is measured on a 4-point Likert-type scale (1= not at all and 4 = very much so). There are seven items (21, 26, 27, 30, 33, 36 & 39) that are reversed scored. The higher scores represent greater trait anxiety. The reliability coefficients ranged from α = .65 to .86 (Spielberger, Gorsuch, & Lushene, 1970).

State-Trait Anger Expression Inventory (STAXI). Spielberger developed this inventory in (1999). It consists of 10-items that measure state and trait anger on a 4-point Likert type scale (1 = almost never and 4 = almost always). Trait anger temperament (T- Ang/T) score is obtained by a composite score of four items (16, 17, 18 & 21), and the total score on items (19, 20, 22, 23, 24 & 25) gives a score of trait anger reaction (T- Ang/R). The total score on trait anger is obtained by adding the score obtained on all 10 items. Scores on this scale can range from 10-40, with a higher score representing greater trait anger. The internal reliability of the scale is α = .82 (Spielberger, 1999).

Personality Deviance Scale-Revised (PDS-R). Bedford and Foulds, developed Personality Deviance Scale-Revised (PDS-R) in 1978. The original scale consisted of 36 items that measured Hostile Thoughts (HT), Denigration of Others (DO), Lack of Self-Confidence (LSC), Dependency (DEP), Hostile Acts (HA), and Dominance-Submissiveness (DOM-SBM). Two subscales: Hostility and Dominance/Submissiveness were employed in this study.

Eight items of the hostility subscale were incorporated in the current study (Bedford & Foulds, 1978). This hostility scale has four possible responses on each item (4 = very often and 1 = never). A possible score on PDS-R hostility scale ranges from 8 to 32, with higher scores representing greater hostility. High reliability of .72 has been reported for this scale (Bedford & Deary, 2003).

To measure DOM-SBM, a subscale of PDS comprising of 6 items (Bedford & Foulds, 1978) with four possible responses on each item (4 = very often and 1 = never) was used. All six items were reversely scored to measure dominance, the possible score on this subscale ranges from 6 to 24 with a higher score representing greater dominance. The reliability of PDS-R was found to be .75 (Bedford & Deary, 2003).

Revised Life Orientation Test (LOT-R). Scheier, Carver, and Bridges (1994) developed a 10-item scale with a 5-point Likert-type scale (0 = strongly disagree and 4= strongly agree) to measure generalized optimism (versus pessimism). Each item is measured on the scale has four filter items (2, 5, 6 & 8), that measure generalized expectancies for positive versus negative outcomes and four items (3, 6, 7 & 9) are reversed scored. The total score on optimism versus pessimism was obtained by adding scores on items (1, 3, 4, 7, 9, & 10). The score on this scale can range from 0 to 32, higher scores representing greater optimism, and the internal reliability of the scale is α = .82 (Scheier et al., 1994).

Perceived Locus of Control Scale (PLCS). Rosengren et al., 2004 developed these six items to assess locus of control in cardiac patients. These six items have been used expansively in studies

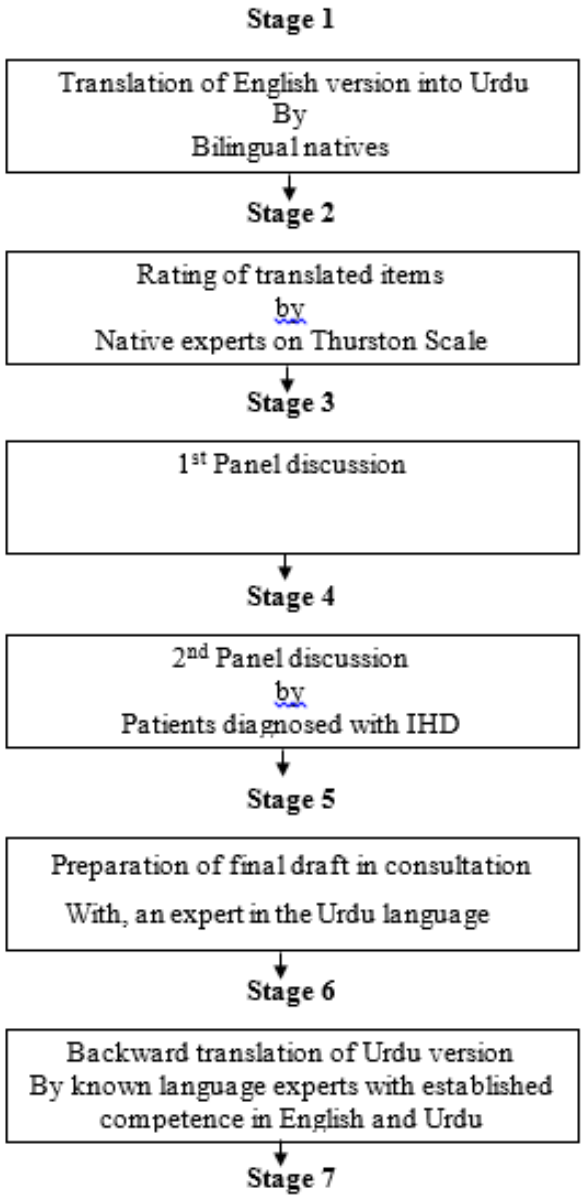
conducted in Eastern Europe (Marmot et al., 1991; Rosengren et al., 2004; Yusuf et al., 2004). Research participants were asked to which extent they agreed or disagreed with the statements. Two items (1 & 3) were coded as (0 = strongly disagree and 4 = strongly agree) and the rest of the 4 items (2, 4, 5 & 6) were reverse scored as they were negatively worded and revealed less perceived control.

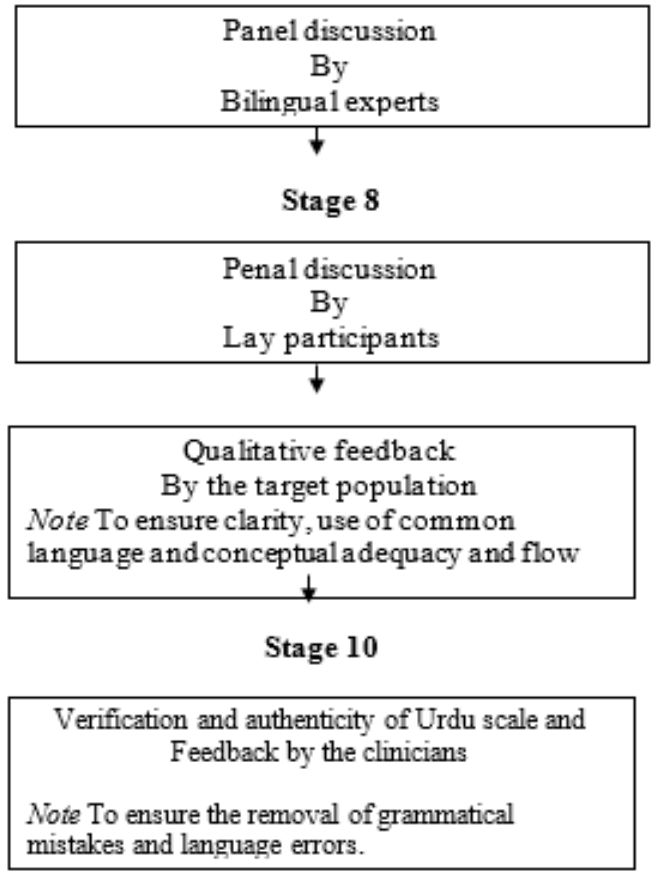
Multidimensional Scale of Perceived Social Support (MSPSS). Zimet et al., (1988) authored this 12-item scale with 7 points Likert-type response (1 = very strongly disagree and 7 = very strongly agree). A composite score is obtained by adding the scores on all 12 items and dividing it by 12 wherein a higher average score means greater perceived social support. Cronbach's alpha for the scale is .78 (Zimet, Powell, Farley, Werkman, & Berkoff, 1990).

Procedure

Permission for translation and use of instruments for conducting the present study was appropriately sought from authors of all the scales. To ensure a rigorous process of translation as well as to achieve equivalence between the original version and translated versions of scales, Vallerand's (1989) steps for instrument translation with slight modification were employed (see also Banville, Desrosiers, & Genet-Volet, 2000; Wongsri, Cantwell, & Archer, 2003). In order to get an overview of stages followed for the process of translation in this study (see Figure 1) To determine the psychometric properties of the scales, a permission letter explaining the nature of the study and requesting cooperation for the collection of data was sought from hospital authorities. Cases and controls have explained the nature of the study and requested to sign the informed consent form. Study participants were then administered the English version of the scales, with the commitment that they would return to the hospital again after one month to complete the Urdu version of the same scales. After one month, the same study participants were requested to fill in the translated Urdu version of the scales by avoiding recall of how they had responded to these scales previously in English.

Figure 1. Flow chart depicting stages followed for the process of translation, adopted from Vallerand's methodology (1989).





Description of translation stages.

Stage1. Translation (English version into Urdu). Translation of all English versions of scales into Urdu was carried out by six bilingual native expert speakers living in Pakistan. All translators had prior experience in translation. The translators were instructed to translate all of the items of the scales, keeping in mind conceptual rather than the literal meaning of the items by considering the population with at least a primary level of education. Translators were also asked to identify items as well as response options which they found difficult to translate, by providing feedback on a scale ranging from (0 = not at all difficult, to 4 = extremely difficult). All the translators involved in forward translation at

this stage rated nine items to be extremely difficult (I feel blue and I could not “get going”), three items to be very difficult (I feel like crying and It's important for me to relax) whereas six items were found to be slightly difficult (I try to avoid facing a crisis or difficulty and I feel infuriated when doing a good job and get poor evaluation) by these translators.

Stage 2. Rating of translated scale items by native experts. All translations obtained after the forward translation procedure were rated by three bilingual native speakers, (see Figure 1) on a Thurston scale (4 = Excellent, 3 = Very good, 2 = Good, 1 = Fair, and 0 = Poor) to facilitate the selection of response choices that had similar value as that of the original English translation. The average rating given by all three translators was (3= Very good).

Stage 3. Panel discussion. The next stage involved an item by item review of all six translations in a panel discussion comprising of six members (see Figure 1). The final target version of the translation was produced after comprehensive discussion keeping in view the individual differences in all the six translations, length of items, differences in the use of words and expressions, redundancy of words in items, comprehension ability by the layperson, and cultural as well as regional connotations.

Stage 4. Second-panel discussion for reaching on mutual consensus for items identified as being problematic. Problematic items, for which a mutual consensus was not reached by the members of the previous panel discussion, were taken up by another voluntary panel that comprised of six members (see Figure 1), all of whom were patients diagnosed with CHD. This second panel gave feedback regarding the elicitation of expressions that conveyed the concept under study. Three members of this panel had attained education up to the primary level and the remaining three members of the panel were college graduates. Eight items that were found to be problematic and for which a mutual consensus could not be achieved were excluded.

After the second panel discussion, a final draft of comprehensive target translation: the forward translation based on mutual agreement on item wise review was produced.

Stage 5. Proofreading by an expert in the Urdu language. This final draft was given to an expert in the Urdu language for proofreading as well as the elimination of any language expression or grammatical errors, and thus a final draft was prepared by the researcher in consultation with the expert in the Urdu language.

Stage 6. Backward translation. The proof-read draft, thus finalized, was then backward translated by three (blind review-translators) who were known language experts with established competence in English as well as the Urdu Language (see Figure 1) and were not familiar with the original scales. All three translators were given the same instructions as previously given to the six translators who were involved in the forward translation procedure.

Stage 7. Panel discussion (Bilingual experts). A panel of five bilingual experts was formulated to review similarities and differences between the original English version of the scales and the back-translated version. This panel provided a qualitative review for every translated item to ensure clarity in language, use of common language as well as conceptual adequacy of items. Some of the items that were found to reveal a discrepancy in meaning between the original English version and the back-translated version were highlighted and alternatives were proposed for these items. Ten items (10, 16, 20, 23, 25, 27, 31, 35, 40, and 64) out of 97 were found not to reflect the original intent (in grammar and context) and hence, were re-reviewed by the panel accurately. After a lengthy panel discussion, a mutual agreement was reached on the most appropriate translation and a final draft of the consensus translation was produced following 100% agreement by all the members of the designated panel on all items.

Stage 8. Lay Men community representative panel discussion. The final draft of translated and corrected items was reviewed by five lay

people from the general community, aged between 35 to 55 years. This panel comprised of three men and two women; among them, 1 male member of the panel discussion had completed 12 years of education while the remaining others have ten or fewer years of education. This variation in education was deliberated to maintain community representation features. The panel was instructed to identify difficult items and propose alternatives by writing them on the draft directly. All the members of the lay panel discussion were asked to write down any suggestions regarding these items if they had any, however, none of the items were identified as difficult or troublesome and the final draft was thus approved.

Stage 9. Qualitative feedback by the target population (a group of patients with CHD). Later five patients admitted to the hospital (see Figure 1), fulfilling the study exclusion/inclusion criteria were sought to provide qualitative feedback regarding the translated scales. This step was carried out to ensure clarity as well as the use of common language, and conceptual adequacy and flow of the scales. Furthermore, this group gave feedback regarding the font size, formatting, line spacing, page layout, and readability of the items in its final drafted form. All the patients gave feedback that the questionnaire was easy to comprehend as it used common everyday language.

Stage 10. Verification and authenticity of the Urdu scale. For seeking verification and authenticity of the translated instrument, a copy of the scale in English and Urdu was mailed to the National Language Authority (NLA), Cabinet Division Islamabad, Pakistan. Minor grammatical changes were recommended by two Urdu experts of NLA (see Figure 1) that were incorporated accordingly.

Results

Descriptive and inferential statistical analyses were carried out using means, paired *t*-tests, and correlations between English and Urdu scale scores. In addition, reliability coefficients were calculated for the study sample.

Figure 2.
Demographic Characteristics of the Study Sample

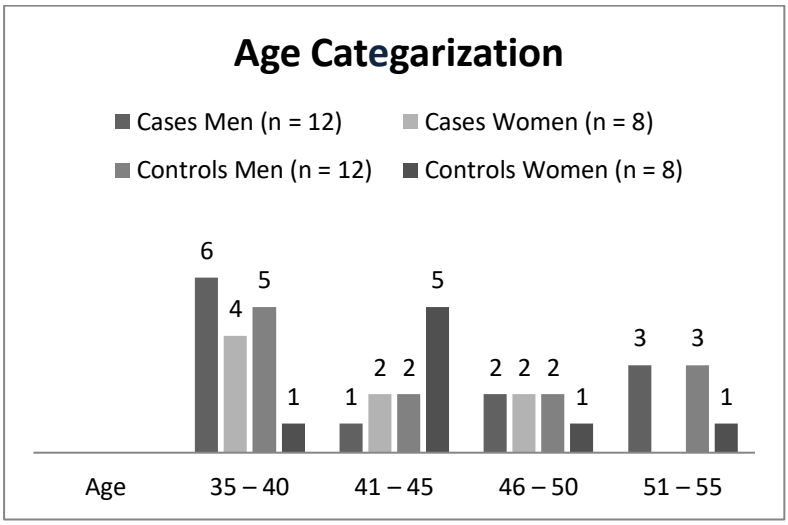


Table 1.

Demographic Characteristics of the Study Sample

	Cases		**Controls**	
	Men (*n* = 12)	Women (*n* = 8)	Men (*n* = 12)	Women (*n* = 8)
Demographic Characteristics	*f* (%)	*f* (%)	*f* (%)	*f* (%)
12 to 14 years	6(50)	2(25)	5(41.7)	3(37.5)
16 or more years			3(25)	
Occupation				
Business			2(16.7)	
Government	4(33.3)	1(12.5)	3(25)	
Private	3(25)		5(41.7)	
Self-employed	4(33.3)			
Agriculture				
Not working		1(12.5)	1(8.3)	1(12.5)
Retired	1(8.3)		1(8.3)	
Housewife		6(75)		7(87.5)
Monthly income				
12000 & less	4(33.3)	2(25)	5(41.7)	1(12.5)

	Cases		**Controls**	
	Men (n = 12)	Women (n = 8)	Men (n = 12)	Women (n = 8)
Demographic Characteristics	*f* (%)	*f* (%)	*f* (%)	*f* (%)
12000 – 20000	3(25)	4(50)	1(8.3)	2(25)
20000 to 35000	3(25)	1(12.5)	3(25)	3(37.5)
35000 & above	2(16.7)	1(12.5)	3(25)	2(25)
Mean and Median monthly income	(26416.66) (18500.00)	(19625.00) (15000.00)	(26881.08) (17,061.50)	(35250.00) (27500.00)
Marital status				
Married	12(100)	8(100)	9(75)	5(62.5)
Not married			2(16.7)	1(12.5)
Engaged				
Divorced				
Widowed			1(8.3)	2(25)
Family system				
Nuclear	6(50)	5(62.5)	2(16.7)	2(25)
Joint	6(50)	3(37.5)	10(83.3)	6(75)
Living				
Rural	2(16.7)	1(12.5)	2(16.7)	
Urban	10(83.3)	7(87.5)	10(83.3)	8(100)
Family history of CHD				
Present	8(66.7)	4(50)	3(25)	2(25)
Absent	4(33.3)	4(50)	9(75)	6(75)

Note. Income is expressed in Pakistani Rupee.

Table 2.

Means, Standard Deviations, t values (paired), Correlation between English and Urdu Scale Scores and Reliability Coefficients

Variables		***M***	***SD***	***t***	***r***	***α***
Perceived Stress	Pre	18.37	7.20			.80
	Post	18.15	6.51	0.22	.56***	.79
Depression	Pre	11.17	6.38			.88
	Post	11.85	7.26	-0.60	.46**	.87
Trait anxiety	Pre	45.12	11.96			.87
	Post	48.07	12.98	-1.37	.41**	.85
Trait anger	Pre	20.95	6.69			.87
	Post	20.52	6.67	0.45	.60***	.88
Hostility	Pre	13.40	3.73			.88
	Post	12.90	3.61	0.81	.44**	.87
Dominance	Pre	15.00	3.71			.75
	Post	14.27	3.13	1.28	.46**	.71
Social support	Pre	58.60	16.78			.85
	Post	58.72	17.40	-0.4	.31*	.86
Optimism	Pre	20.32	6.21			.76
	Post	20.37	6.23	-0.09	.86***	.73
Locus of control	Pre	11.43	4.59			.76
	Post	11.63	4.46	-.33	.43***	.73

Note. $n = 40$, $df = 39$, * $p > .05$, ** $p > .01$, *** $p > .001$

There were no significant differences in the mean scores of pre (English) and post (Urdu) version on any of the scales, suggesting similar dissemination of the content of the scales in Urdu and English. Pearson correlation analysis between pre (English) and post-administration (Urdu) revealed a significant positive correlation demonstrating reasonably high validity for all the scales. The alpha coefficients revealed moderate to a high level of internal consistency of all scales for both administrations respectively. In short, all the Urdu scales indicated high test-retest reliability.

Discussion

The primary goal of this study was to translate the English Language instruments to Urdu in order to assess predictors of CHD another objective and to establish the psychometric properties of these translated instruments. Overall, the psychometric properties of all these instruments revealed significant positive inter-scales correlation demonstrating reasonably high content validity for all the scales. The alpha coefficients revealed moderate to a high level of internal consistency of all scales for both administrations respectively. In short, all the Urdu scales indicated high test-retest reliability. The PSS is a short and easy to use questionnaire established with acceptable psychometric properties. The Greek versions of the PSS-14 and PSS-10 exhibited satisfactory psychometric properties and their use for research and health care practice is warranted (Andreou et al., 2011). The European Spanish version PSS demonstrated adequate reliability (internal consistency, α = .82, test-retest, r = .77), validity (concurrent), and sensitivity (Remor, 2006). The findings confirmed the adequate psychometric properties in Chinese versions of PSS-10 (Wang, 2011). Internal consistency reliability coefficients of the CES-D 10 were satisfactory (Cronbach α=0.88). The CES-D 10 showed comparable accuracy to the original CES-D 20 in classifying participants with depressive symptoms. The sensitivity of CES-D 10 was 91%; specificity was 92%, and the positive predictive value was 92%. It is a comparable tool to measure depressive symptoms among HIV-positive research participants (Zhang et al., 2012).

Urdu translation of STAI has demonstrated adequate psychometric properties with satisfactory test-retest, internal consistency reliabilities, and convergent validity. The empirical findings show that the Urdu adaptation of the State-Trait Anxiety Inventory is a reliable and valid instrument to be used in Pakistan (Butt, 2010).

State-Trait Anger Expression Inventory (STAXI) was adapted into the Urdu language and used in the present research with overall α .91 (Mushtaq & Najam, 2014). The Portuguese version of STAXI presented an adequate factorial structure that permits the evaluation of anger dimensions among clinical patients (Azevedo, Wang, Goulart, Lotufo, & Benseñor, 2010).

The Greek life orientation test revised appears to be a valid tool in assessing dispositional optimism in Greek-speaking people and is expected to facilitate the examination of optimism in Greek-speaking populations (Lyrakos, Damigos, Mavreas, Georgia, & Dimoliatis, 2010). LOT-R has good internal consistency (Cronbach's alpha = 0.71 and item-total correlation coefficients from 0.27 to 0.73, a unitary structure, and stability over a 3-months period (r = 0.66). Moreover, the Greek version of the scale exhibited good convergent validity with a single-item optimism scale (r = 0.73). Principal components analysis revealed a two-factor structure representing the constructs of optimism and pessimism. The Greek life orientation test revised appears to be a valid tool in assessing dispositional optimism in Greek-speaking people and is expected to facilitate the examination of optimism in Greek-speaking populations (Lyrakos, Damigos, Mavreas, Georgia, & Dimoliatis, 2010).

The Japanese translation of the revised Life Orientation Test was completed by 223 Japanese college students. Factor analysis yielded two factors, namely, Optimism and Pessimism. These factor scales showed adequate reliability and construct validity (Sumi, 2004).

The research demonstrated that the MSPSS has good internal and test-retest reliability as well as moderate construct validity. The Urdu translation of the MSPSS was found to have good construct validity, and internal consistency (Akhtar et al., 2010). Thai MSPSS is a reliable and valid instrument to use (Wongpakaran, Wongpakaran, & Ruktrakul, 2011). The simple and short format makes it a useful tool for measuring perceived social support (Ekbäck, Benzein, Lindberg, & Årestedt, 2013).

Conclusion

In short, it can be safely concluded that evidence regarding psychosocial risk and protective factors of CHD has mostly been drawn from Western and European studies, and from studies conducted in South Asian countries. The evidence regarding psychosocial factors of CHD was lacking for the Pakistani population.

Limitations and Suggestions

This is acknowledged that there are certain limitations in the current research; for instance, some dimensional analysis of the instrument in terms of discriminant and divergent validity could strengthen its psychometric strength. The study participants were recruited from one hospital with limited demographic variations, which may compromise its wider generalization on the national sample as there are wider population-based specific characteristics across provincial affiliations of Pakistan. Likewise, this instrument must be put to further confirmation platforms by collating its data through test-retest reliability affirmations. Future studies in order to examine the stability of the instrument are recommended. A major strength of this study is that in the future well-designed studies can be carried out for endorsement of psychosocial risk factors for CHD in the Pakistani population. Realizing a limited number of scales and instruments in Urdu for assessing such pervasive challenging issues of coronary diseases in the Pakistani community is one of the most promising elements, yielded by this research. There have not been indigenous instruments in the domain of Coronary Heart Disease researches. Thus a comprehensive instrument of this sort can be used by Pakistani healthcare professionals as a valid and reliable disease-specific tool to assess the profound dimensions of Urdu-speaking Pakistani patients with CHD.

Implications

Efficacious utilization of this instrument across different health set-ups and social stratum is likely to be extremely beneficial for health care practitioners in the domain of heart disease management. This instrument is likely to cater simulative line of direction to future researchers and is likely to support health practitioners in collating data on heart diseases in Pakistan. In a way, the present study offers ground to carry out research to infer these factors of CHD prevalent within the Pakistani population. Upcoming efforts need to be directed at uncovering the risk and protective factors of CHD in the Pakistani population through the use of these translated scales in well-designed multi-center prospective cohort designs.

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