

Adaptation of the Coping Inventory for Stressful Situations (Short Form) for Pakistani Adolescents

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ABSTRACT

Objectives: Adaptive coping varies across cultures, underscoring the need to validate this construct cross-culturally. However, there is a lack of psychometrically sound measures of coping adapted for use with adolescents in South Asian countries, such as Pakistan.

Method: The current study translated the Coping Inventory for Stressful Situations 21 (CISS-21) from English to Urdu using back-translation method and examined its scale structure, Cronbach's alpha reliability and construct validity in a sample of 405 Pakistani adolescents (12-18 years; 50.5% male; Mean age=14.3 years; SD=1.62). Confirmatory factor analysis (CFA) was conducted and CISS-21 subscales' (task focused, emotion focused and avoidant coping) correlations with the Rosenberg's Self-Esteem Scale (RSES) and the Hospital Anxiety and Depression Scale (HADS) were assessed.

Results: CFA results demonstrated a similar good fit to both 2-factor and 3-factor structures. High Cronbach's alphas (.87-.91) supported the internal consistency of the CISS-21. CISS-21 subscales scores were significantly correlated with the HADS and the RSES scores in the expected direction, supporting its construct validity.

Conclusion: This study has provided a new psychometrically robust coping measure for future research with Pakistani adolescents or other Urdu speaking settings. This contribution to methodological development is an important step in advancing adolescent mental health research in South Asian countries such as Pakistan, which have limited research and clinical resources.

Keywords: Coping; Adolescence; Well - being; Translation; Validation; Culture

INTRODUCTION

Adolescent wellbeing is a worldwide problem due to the high prevalence of mental disorders in adolescence [1]. Notably, depression and anxiety symptoms, are frequently occurring emotional problems during adolescence [2], and are major risk factors for suicide in this age group [3]. Therefore, research into protective factors such as coping is important to improve intervention design and initiatives to augment wellbeing at this developmental stage [4,5]. Adaptive coping varies across cultures, which emphasises the need to validate this construct cross-culturally [5]. Importantly, Pakistani adolescents make up 38% of its population but there is scarce of sound psychometric measures to use with them thereby validation studies are needed to eliminate measurement bias [6].

Coping refers to responses that aim to minimize, control or

encounter challenges (perceived as stress) from the internal/external environment [7]. In adolescents, suboptimal coping can lead to anxiety [8], depression and poor psychological wellbeing [4,9,10]. Coping measures have been operationalized according to various dimensions. For example, the Coping Orientations to Problems Experienced Scale [11] suggested 14 types of coping, whereas Folkman and Lazarus' [12] Ways of Coping reported eight factors. Despite a variety of coping measures with varying factors, there is a consensus that coping strategies collapse into two broad categories (task focused versus emotion focused) in line with Lazarus and Folkman's theoretical model [7]. Task focused coping aims at encountering problem and emotion focused coping aims at modulation of negative emotions. Endler and Parker developed the 48-item Coping Inventory for Stressful Situations (CISS) with three factors: task focused, emotion focused and avoidant coping; highlighting the separate function of avoidant coping [13]. Research has indicated positive psychological outcomes for task

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focused coping, contrasting with negative psychological outcomes for emotion focused and avoidant coping [14]. Endler and Parker [13] further suggested that avoidant coping can be manifested in two different ways:

- Distraction such as treating oneself with favorite food, and
- Social diversion such as meeting friends.

A number of studies suggested that CISS may be underpinned by a 4-factor model (task focused, emotion focused, distraction and social diversion) rather than the original 3-factor model [15]. Some studies such as Rafnsson et al. [16] confirmed both 4-factor and 3-factor structure. CISS has demonstrated several methodological advantages including high reliability and stability across studies as well as the fact that it could be used to measure coping as both a personality trait and response to the stressful situations [17]. Its shortened version, (CISS-21: Endler & Parker) has well-established psychometric properties across studies from the USA [15], the Netherlands [18] and Turkey [19]. For establishing CISS construct validity, the use of significant correlations between CISS subscales and mental health and wellbeing scales is well-supported [18].

Taken together, the current investigation aimed to evaluate the psychometric properties, namely reliability, scale structure and construct validity of Urdu CISS-21 with Pakistani adolescents.

RESEARCH METHODOLOGY

Ethical approval

Ethical approval for the current study was obtained from the research ethics committee of the University of Edinburgh, Fatima Jinnah Women University and the local education authority in Rawalpindi, Pakistan.

Participants

The sample comprised of 405 adolescents (12-18 years; 50.5% male) recruited from three randomly selected government schools in Rawalpindi with 98% overall response rate. The current study sample size exceeded the minimum sample size of 315 determined by a priori power calculation, which was based on subjects to variables ratio, considering 15 cases for each item [20]. Mean age was 14.3 years (SD=1.62). The majority (93%) of participants self-identified as Muslims and of Punjabi (79%) ethnicity. The majority (64.5%) participants were from the middle family affluence, 21.0% from the low and 14.5% were from the high affluence families. All adolescents were from intact families (such as both parents alive and living together).

Study design

A cross-sectional survey was conducted.

Measures

A booklet containing a demographic questionnaire and the Urdu versions of the measures (mentioned below) was administered. The demographic questionnaire included questions about gender, age, ethnicity, religion and living arrangement. Family Affluence Scale (FAS II; Currie et al. [21]; α .57, Boyce et al. [22]) was also included to assess adolescent socio-economic status based on objective and subjective measures of family wealth. It has four items:

- Does your family own a car, van or truck? (No=0; Yes, one=1; Yes, two=2),
- Do you have your own bedroom for yourself? (No=0; Yes=1),
- During the past 12 months, how many times did you travel away on holiday with your family? (Never=0; Once=1; Twice=2; More than twice=3),
- How many computers (including laptops and tablets, not including game consoles and smartphones) does your family own? (None=0, One=1; Two=2; More than two=3).

Based on the composite FAS II score, a score of 0-3 indicates low affluence, a score of 4-6 indicates middle affluence, and a score of 7-9 represents high affluence.

The Hospital Anxiety and Depression Scale (HADS) by Zigmond and Snaith [23] was used to measure depression and anxiety symptoms. It is a 14-item scale with two subscales: depression and anxiety (7-item each), with participants rating each item based on how they feel generally using a 4-point Likert scale. The Cronbach's α for depression and anxiety subscales were reported to be .83 and .82, respectively [24]. It has been validated for 12-17 year-olds [25]. In this study, we used a validated Urdu version of HADS by Mumford et al. [26].

The Rosenberg's Self-Esteem Scale (RSES) [27] was used to measure self-esteem. It has 10 items and participants rate each statement on a 4-point Likert scale. Higher scores indicate higher self-esteem. Schmitt and Allik [28] established RSES psychometric properties across 28 languages and 53 nations (α =.79-.81). The current study used Urdu RSES by Rizwan et al. [29], which has been validated with Pakistani adolescents (α =.77).

The Coping Inventory for Stressful Situations-21 by Endler and Parker [13] was used to measure coping strategies. It is a shortened version of CISS-48 and has 21 items with three subscales: task focused, emotion focused and avoidant coping (7 items each). Participants rate each question on a 5-point Likert scale. Higher scores indicate more use of coping strategies [13]. It is a sound psychometric instrument with Cronbach's α : task focused=.78-.87, emotion focused=.78-.87, and avoidant coping=.70-.80. It has been validated for adolescents [30].

After getting permission from the corresponding author, Brislin's back-translation method [31] was followed to translate CISS-21 from English to Urdu (details of the translation procedure are provided in another paper available on request).

PROCEDURE

A letter outlining the broad aim and scope of study was sent out to the principals of three secondary schools in Rawalpindi, Pakistan. Then, a detailed information sheet and a parental opt-out consent form were sent to parents of all adolescent students (12-18 years) of the participating schools. On the day of data collection, adolescents with a signed opt-out parental consent form were not included. Data were collected in a library hall in each school. Adolescent participants were also asked to complete a consent form prior to participation. Completion of the questionnaires took approximately 25-30 minutes and the respondents were debriefed orally in the end.

DATA ANALYSIS

Descriptive, reliability and correlation analyses were conducted using Statistical Packages for Social Sciences version 21 (SPSS). Confirmatory Factor Analysis (CFA) was tested using Mplus version 6.2 [32]. Prior to CFA analysis, data were screened for multivariate normality and overall no significant violation was detected. Incomplete questionnaires (20) were excluded before the data entry to avoid missing values. Reliability was assessed using Cronbach's alphas with the following criteria: 0.7-0.8 acceptable, 0.8-0.9 good and > 0.90 excellent [33]. For good construct validity, CISS-21 task focused subscale was hypothesised to be negatively correlated with HADS total and subscales' scores and positively correlated with RSES total score; by contrast, CISS-21 emotion focused and avoidant coping subscales' scores were hypothesised to be positively correlated with HADS total and subscales' scores but negatively correlated with RSES total score. For CFA, good model fit was indicated by

- The chi-square statistic (χ^2),
- The comparative fit index (CFI) (values of .90 or greater),
- The Tucker Lewis index (TLI) (values of .90 or greater),
- The root mean squared error of approximation (RMSEA) (values of .06 or less), and
- The standardized root mean square residual (SRMR) (values of .08 or less) [34].

RESULTS

Descriptive statistics and reliability of all measures are presented in Table 1. All measures demonstrated high Cronbach's alphas (.82-.91), indicating internal consistency of the Urdu versions.

As hypothesised, CISS task focused subscale showed positive significant associations with RSES scores and a negative significant relationship with HADS scores. The CISS emotion focused subscale showed a positive significant relationship with the HADS scores but a negative significant association with the RSES scores. Unexpectedly, the CISS avoidant subscale was positively associated with RSES scores but negatively associated with the HADS total score and HADS depression subscale (Table 2).

A 3-factor structure (task focused, emotion focused and avoidant coping) proposed by Endler and Parker [13] and a 4-factor structure (task focused, emotion focused, distraction and social diversion) proposed by Rafnsson et al. [16] were tested. Each

indicator was fixed to load onto the factor it was hypothesised to measure. Residual terms for all indicators were not correlated in both models. All the factor loadings (Table 4) were significant and both three and four factor structures provided a good fit to the data as presented in Table 3.

DISCUSSION

This study provides evidence for the robust psychometric properties of Urdu CISS-21 with Pakistani adolescents. The Cronbach alphas of the Urdu CISS-21 subscales ranged from .87 to .91 comparable with previous western [15] and non-western [30] studies, extending the applicability of the CISS-21 to Urdu speaking samples. The results of CISS-21 CFA demonstrate both three and four factor structures replicating previous studies [30] as well as suggesting the multi-dimensional nature of coping [35].

For construct validity, the correlation patterns were in line with the Lazarus and Folkman [36] stress model, in that coping strategies aimed at problem solving are highly related to indicators of higher levels of self-esteem and lower levels of depression and anxiety, whilst emotion focused coping strategies negatively influence adolescents' wellbeing [4,37]. As similar results were found in CISS-21 validation studies in China [30] and Turkey [19], our study further supports the proposition that task focused and emotion focused coping orientations play a similar role in affecting mental health and psychological wellbeing consistently across cultures.

Unexpectedly, CISS-21 avoidant subscale indicated a positive significant relationship with the RSES scores and a negative significant association with the HADS total score and HADS depression subscale. This resonates with Persike and Seiffge-Krenke's cross-cultural [38] study, which suggested that culture has a bearing on stress perception and coping styles in adolescents. Another study indicated that avoidance in Asian and Indonesian adolescents was associated with positive psychological outcomes such as social adaptation [39]. Li and colleagues [30] similarly found a positive relationship between avoidant subscales and extraversion in a Chinese sample.

The current results suggest that avoidant coping can have different meanings and consequences in different cultures and may be further linked to culture specific outcomes. For example, in two studies with European Canadians, East Asian Canadians, and Japanese university students, East Asian participants were found to be less likely to engage in efforts to solve the problem [40]. In addition, Thai children were found to use more secondary control, such as adapting to the situation than American children [41]. Another

Table 1: Descriptive statistics of the CISS-21 subscales, HADS total and subscales and RSES total (N=405).

Variables	α	M	SD	Skewness	Kurtosis
CISS-21 Task focused	0.9	23.84	6.25	-0.22	-0.73
CISS-21 Emotion focused	0.91	20.17	7.12	0.4	-0.63
CISS-21 Avoidant	0.87	21.12	6.66	-0.08	-0.69
HADS total	0.9	26.38	7.25	0.71	0.45
HADS Depression	0.82	12.44	3.74	0.74	0.53
HADS Anxiety	0.83	13.9	3.98	0.53	-0.06
RSES total	0.91	22.83	5.32	-1.04	0.28

Note: N=Number of participants, α =Cronbach's alpha, M=Mean, SD=Standard Deviation, CISS-21=Coping Inventory for Stressful Situations-21, HADS=Hospital Anxiety and Depression Scale, RSES=Rosenberg's Self-Esteem Scale.

Table 2: Bivariate correlations between the CISS-21 subscales, HADS total, subscales and RSES total (N=405).

Variables	HADS total	HADS-D	HADS-A	RSES total
CISS-Av	-.12*	-.14*	-0.06	.16**
CISS-E	.30**	.26**	.31**	-.21**
CISS-T	-.36**	-.36**	-.28**	.37**

Note: N=Number of participants, CISS=Coping Inventory for Stressful Situations-21, CISS-Av=Avoidant CISS, CISS-E=Emotion focused CISS, CISS-T=Task focused CISS, HADS=Hospital Anxiety and Depression Scale, HADS-D=Depression HADS, HADS-A=Anxiety HADS, RSES=Rosenberg's Self-Esteem Scale. Values not bold are non-significant.

*=p < .05; **=p < .01.

Table 3: Confirmatory factor analysis of CISS-21 (N=405)

Variables	χ^2	df	RMSEA (90% CI)	CFI	TLI	SRMR
Model 1	493.54***	188	0.06 (0.05-0.07)	0.91	0.9	0.07
Model 2	469.97***	185	0.06 (0.05-0.06)	0.92	0.91	0.07

Note: N = Number of participants, RMSEA = Root mean square error of approximation, CFI = Comparative fit index, TLI = Tucker-Lewis index, SRMR = Standardized root mean square residual, df = degree of freedom, CI= Confidence interval, X2 = Chi-square, *p < .001

Table 4: Model 2 factor loadings on avoidant coping, task focused coping and emotion focused coping subscales of CISS-21 (N=405).

Scale Items	Factor Loadings
Avoidant Subscale	
Take some time off and get away from the situation. D	.63**
Treat myself to a favourite food or snack. D	.73**
Visit a friend. SD	.69**
Buy myself something. D	.71**
Spend time with a special person. SD	.73**
Go out for a snack or meal. SD	.67**
Phone a friend. SD	.82**
Task focused Subscale	
Focus on a problem and see how can I solve it	.81**
Think about how I solved similar problems	.57**
Determine a course of action and follow it	.85**
Work to understand the situation	.81**
Take corrective action immediately	.81**
Think about the event and learn from my mistakes	.81**
Analyse my problem before reacting	.80**
Emotion focused Subscale	
Blame myself for having gotten into this situation	.81**
Feel anxious about not being able to cope	.84**
Blame myself for being too emotional about the situation	.83**
Become very upset	.81**
Blame myself for not knowing what to do	.79**
Wish that I could change what had happened or how I felt	.58**
Focus on my general inadequacies	.67**

Note: **=p < 0.01, SD=Social diversion, D=Distraction, N=Number of participants, CISS-21=Coping Inventory for Stressful Situations-21.

explanation specific to Pakistani context is that coping behavior is strongly influenced by religion and most people are likely to accept the presence of stressors as Allah's (God's) will. Correspondingly, prayers and meditation are considered preferred ways to cope with stress [42]. Behaviors such as "visit a friend; buy myself something; take some time off and get away from the situation" (avoidant coping items in CISS-21) are considered a sign of emotional maturity and contentment according to the religious teachings of Islam. Nevertheless, future research explicitly exploring how

avoidance is perceived in a Pakistani cultural context will provide a better understanding.

Further, these results also point to the suggestion that avoidant coping could be adaptive in that it may provide temporary relief and allows individuals to think and/or plan task focused coping in the long term [36]. Skinner and Zimmer-Gembeck [17] indicated a flexible approach towards stress management in adolescence, which is a combination of problem solving and avoidance. In a

longitudinal study, a shift from avoidant coping to approach coping was shown to be linked to less depression in adolescents [42]. On this note, future longitudinal studies exploring Pakistani adolescents' coping behaviors over time may help unpack this complex relationship between avoidant coping and psychological distress. Overall, these findings emphasise the investigation of task focused coping, emotion focused coping and avoidant coping as separate coping dimensions in order to capture their predominance and/or unique contribution towards adolescent mental health [43].

CONCLUSION AND LIMITATIONS

We note a number of limitations to the study. Data were collected using self-report measures, which may be prone to bias. Future research with multiple informants for data collection and wider representation of adolescents such as with clinical symptoms would help increase generalisability of the application of CISS-21. Only alpha reliability was tested, therefore future work on test-retest reliability would be desirable. These limitations notwithstanding, we provide robust evidence for the adaptability of CISS-21 in Urdu speaking samples, improving our armamentarium of measures of coping in South Asian settings contributing to the cross-cultural literature on adolescent wellbeing.

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