



THE BRIEF COPE INVENTORY SHORT SCALE FOR PERSONS LIVING WITH HYPERTENSION: A NIGERIAN STUDY OF VALIDITY AND RELIABILITY

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ABSTRACT

This study focuses on the adaptation and validation of the Brief COPE Inventory-Short Scale (BCI-12) for hypertensive individuals in Nigeria, addressing the need for a culturally relevant and concise tool to assess coping strategies in this population. The adaptation aims to reduce respondent burden while maintaining the psychometric properties of the scale, given the unique challenges of managing hypertension in resource-constrained settings. A cross-sectional descriptive design was employed, involving 242 hypertensive patients (151 males, 91 females; $M = 43$ years, $SD = 15.79$) recruited from the Obafemi Awolowo University Health Centre using a multistage purposive sampling method. Data were analysed using descriptive statistics, correlation analyses, and reliability analysis. Reliability was assessed using Cronbach's alpha ($\alpha = 0.72$), and validity was established through correlation analyses with the Satisfaction with Life Scale (SWLS) and the Kessler Psychological Distress Scale (KPDS). The BCI-12 showed significant positive correlations with psychological distress (KPDS, $r = 0.52$) and negligible correlations with life satisfaction (SWLS, $r = 0.013$), indicating its ability to differentiate between adaptive and maladaptive coping strategies. The findings confirm that the BCI-12 is a reliable and valid instrument for assessing coping strategies among hypertensive individuals in Nigeria. Its brevity and cultural relevance make it particularly suited for use in clinical and research contexts. Future studies should explore its longitudinal utility and cross-cultural adaptation to other populations managing chronic conditions.

Keywords: Brief Cope Inventory (BCI), Hypertension, reliability, psychological-distress, satisfaction-with-life, validity.

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INTRODUCTION

One must manage a complicated combination of physical and psychological issues when living with hypertension. These obstacles encompass strict compliance with medication regimens, lifestyle modifications, and the management of potential health complications. These ongoing demands underscore the importance of effective coping strategies, which significantly influence overall well-being and quality of life. While the original 28-item Brief COPE Inventory (BCI) developed by Carver (1997) provides a comprehensive framework for assessing coping mechanisms, its length may impose additional stress on populations already burdened by chronic health conditions like hypertension. In order to address this concern, this study adapts and validates a concise 12-item version of the BCI, specifically designed for individuals with hypertension in Nigeria. By creating a culturally relevant and user-friendly tool, the study seeks to ensure that essential coping strategies are effectively captured without overwhelming respondents, thereby enhancing the scale's applicability in both clinical and research settings.

Coping, as conceptualised in psychology, pertains to the cognitive and behavioural efforts made to master, tolerate, or reduce external and internal demands resulting from stressful situations (Krohne, 2002; Frydenberg; Stephenson et al., 2020). Lazarus and Folkman's (1984) foundational research on the transactional model of stress and coping elucidated the complexities of these methods. Within this framework, two principal coping categories emerged: avoidant coping and approach coping. Avoidant coping encompasses behaviours and cognitions that aim to avoid or escape the stressors or the emotions associated with them (Schwarzer & Schwarzer, 1996; Gustems-Carnicer & Calderón, 2013; Bondarchuk et al., 2024). Conversely, approach coping involves actively confronting and trying to resolve or manage the stressors (Berzonsky, 1992; Dewe et al., 2010; Nwobodo et al., 2023). These strategies, while distinct, represent the continuum of adaptive mechanisms individuals deploy in the face of adversity.

Empirical studies on coping styles have illuminated the differential outcomes associated with avoidant and approach mechanisms. Avoidant coping, while

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offering short-term relief, often correlates with negative long-term outcomes, such as heightened psychological distress and lower levels of well-being (Roth & Cohen, 1986; Corey, 2024). Avoidant coping, which includes strategies such as denial, behavioural disengagement, and substance abuse, often leads to adverse psychological outcomes (Eisenberg et al., 2012; MacIntyre et al., 2020; Aigbokhaevbo & Ofili, 2022). For instance, studies by Holahan et al. (2005) and Aloka et al. (2024) revealed that avoidant coping strategies were linked to increased distress over time, especially in the face of chronic stressors. Additionally, avoidant coping has been found to exacerbate the effects of trauma, as individuals who resort to these strategies post-trauma, like after natural disasters or personal assaults, tend to report higher incidences of post-traumatic stress disorder (PTSD) (Resick, 2014; Pinchevski, 2016; Morse et al., 2024).

In contrast, approach coping, characterised by problem-solving and seeking social support, has frequently been associated with better psychological outcomes and adaptation to stress (Taylor & Stanton, 2007; Audu et al., 2024). Approach coping, encompassing strategies like active coping,

seeking informational and emotional support, and positive reframing, is generally associated with better psychological outcomes (Lashbrook et al., 2018; Bondarchuk et al., 2024). For instance, Mayordomo-Rodríguez et al. (2015) conducted a meta-analysis that established positive links between problem-focused coping (an approach strategy) and psychological well-being. Additionally, approach strategies have been observed to moderate the relationship between stress and depressive symptoms, acting as a protective factor against the adverse effects of significant life stressors (Holahan et al., 2007; Troy et al., 2010; Allison et al., 2020). Nonetheless, the cultural environment, individual differences and the nature of the stressor significantly influence the efficacy of a specific coping strategy.

Cross-cultural studies have also delved into coping styles, revealing both universal and culture-specific patterns. For example, it has been suggested that while certain coping strategies (like seeking social support) might be universally adaptive, the manifestation of these strategies might vary across cultures (Adelman, 1988; Janoff-Bulman, 2014; Philips, 2023). Shergold et

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al. (2015) also added that in some societies, collective and communal forms of support might be prioritised, while in others, individualistic coping might prevail. Coping styles have been extensively studied in the context of chronic illnesses. For instance, in individuals with chronic pain, avoidant coping strategies like substance use have been associated with greater pain intensity and disability, whereas approach coping strategies like active coping and seeking support were related to better pain management and psychological adjustment (Jensen et al., 1991; Ferreira-Valente et al., 2020; Igwesi-Chidobe et al., 2021).

Numerous instruments have been developed to measure coping styles, each boasting distinct psychometric properties. The Ways of Coping Questionnaire (WCQ) by Folkman and Lazarus (1988) was among the earliest, highlighting problem-focused and emotion-focused coping. The Brief COPE Inventory (Carver, 1997) later refined these categories, yielding a multidimensional scale capturing a spectrum of coping strategies, from active coping and planning to denial and substance use. These instruments underwent rigorous validation, showing

good reliability, internal consistency, and factorial validity. However, the evolution of these tools underscores the ongoing endeavour in psychology to develop more concise, contextually relevant measures without compromising their psychometric robustness.

The literature on coping strategies emphasises the complexity of human adaptive mechanisms in response to stress and is based on fundamental theoretical frameworks. Although avoidant and approach coping are at opposite extremes of this continuum, individual variations, the type of stressors, and cultural contexts all affect how effective these coping mechanisms are. The impact of these coping strategies on mental health is regularly highlighted by empirical research, highlighting the significance of adaptive coping for overall well-being. The instruments created to quantify various styles reflect the field's dedication to accurately and validly capturing this complexity. As the area develops, more focus is being placed on improving these instruments to serve particular demographics, ensuring they continue to be effective and relevant. The Obafemi Awolowo University Health Centre

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(OAUHC), located in Ile-Ife, Osun State, Nigeria, was chosen as the study site because of its vital role in providing care for a varied student body, which includes many people with hypertension (Bello et al., 2013; Awotidebe et al., 2016). In Nigeria, where access to healthcare resources can differ, and cultural differences may affect stress reactions and coping behaviours; this scenario offers a suitable setting for investigating coping techniques among people with hypertension. This study is based on the Transactional Model of Stress and Coping (1984) by Lazarus and

Folkman, which proposes that coping is a dynamic process involving people's cognitive assessments of stressors and subsequent application of either problem- or emotion-focused coping mechanisms. This study aims to develop a contextually relevant instrument for evaluating coping mechanisms among hypertensive patients at OAUHC, enabling a comprehensive understanding of how they manage stress within their specific cultural and environmental contexts.

METHOD

Design

The study adopted a cross-sectional descriptive design to evaluate the reliability and validity of the adapted Brief COPE Inventory-Short Scale (BCI-12). This design was suitable for assessing the psychometric properties of the instrument and capturing the coping mechanisms of persons living with hypertension at a specific point in time.

Sample and Sampling Technique

The study population comprised persons living with hypertension who were registered patients and actively attending

the hypertensive clinic at the Obafemi Awolowo University Health Centre (OAUHC), Ile-Ife, Nigeria. At the time of the study, OAUHC had a total of 1,655 registered hypertensive patients attending regular checkups or appointments. Using a multistage sampling procedure, a purposive sampling technique was employed to select 242 participants, comprising 151 males (62.40%) and 91 females (37.60%). The mean age of participants was 43 years ($SD = 15.79$), and the sample represented a diverse socio-economic and educational background. A sample size of 242 was deemed appropriate to ensure adequate

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statistical power for reliability and validity assessments while accommodating the cultural and demographic diversity of the study population.

Demographic characteristics also showed that majority of the participants are married (75.60%), while smaller proportions are single (16.10%), divorced (1.70%), separated (1.20%), or widowed (5.4%). Among the participants, 73.60% identify as Christians, 24.40% as Muslims, and 2.10% as adherents of other religions. The educational backgrounds of the participants vary, with the largest group having completed tertiary education (77.30%), followed by secondary education (21.50%). A very small percentage have either no formal education (0.4%) or only primary education (0.8%). Participants' monthly incomes are categorised into low (33.90%), average (60.70%), and high (5.40%) income groups, indicating a range of income levels within the sample.

Inclusion Criteria:

- Patients registered at the OAUHC hypertensive clinic.
- Individuals who had attended the clinic at least once during the three-month study period (January to March 2023).

- Adults aged 18 years and above.
- Participants capable of understanding English and willing to provide informed consent.

Exclusion Criteria:

- Individuals with cognitive challenges that could affect their ability to understand or complete the questionnaire.
- Patients diagnosed with a secondary cause of hypertension due to potential differences in stressors and coping mechanisms.
- Individuals with severe comorbid health conditions.
- Incomplete or invalid responses on the BCI-12 (Short Scale).

Instrumentation

Personal Data Form: This form consists of seven questions on the sociodemographic, occupational, and financial status characteristics of persons living with hypertension.

Brief COPE Inventory (BCI-28): The BCI (Carver *et al.*, 1989) was adopted as a measure of coping style in this study. The original brief COPE Inventory consists of 28 items that assess a range of coping responses that people use when confronted

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with difficult or stressful events in their lives, such as giving care to a relative with a chronic illness or a mental disorder. These responses measure two overarching coping styles as follows: a) Avoidant Coping, which is less effective in coping with anxiety and is associated with poor physical health (Holahan *et al.*, 2005; Morales-Rodríguez, 2021) is assessed by behavioural disengagement (items 6 and 16), denial (items 3 and 8), self-blame (items 13 and 26), self-distraction (items 1 and 19), substance use (items 4 and 11), and venting (items 9 and 21); and b) Approach Coping, which is more helpful responses to adversity and is associated with good health outcomes and more stable emotional responding (Eisenberg *et al.*, 2012) is assessed by acceptance (items 20 and 24), active coping (items 2 and 7), planning (items 14 and 25), positive reframing (items 12 and 17), use of emotional support (items 5 and 15) and use of instrumental support (items 10 and 23).

The items on the BCI are phrased in the form of short descriptions of people's usual coping responses to hardships in life. Each item carries the 4-point Likert-type response options and is scored as follows: 0 = "I usually don't do this at all"; 1 = "I usually do this a little bit"; 2 = "I usually do

this a medium amount" and 3 = "I usually do this a lot". Total scores on each of the scales are calculated by summing the appropriate items for each scale. No items are reversed scored. For total coping style scoring, all items are scored and added together to obtain a final score. This total score could range from zero (0) to 84. The COPE Inventory has a strong theoretical base and sound evidence of validity (Cook & Heppner, 1997). It also has evidence for factor replicability (Clark *et al.*, 1995). The scale showed high internal consistency (Cronbach alpha = 0.79) and a high test-retest reliability of 0.76 (Osundina *et al.*, 2017). A modified version of the COPE inventory, the Brief Coping, has been validated for use in Nigeria (Eni *et al.*, 2020). In a study carried out at University College Hospital, Ibadan, aimed at determining the psychometric properties of the Brief COPE inventory among 166 nurses, the validity and reliability coefficients of the instrument were 0.75 and 0.76, respectively (Eni *et al.*, 2020).

Brief COPE Inventory (BCI-12): The adaptation of the BCI was pursued to provide persons living with hypertension, who often experience heightened psychological distress, with a concise and

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less burdensome assessment tool tailored to their unique needs and challenges. First, the filler items on humour (items 18 and 28) and religion (items 22 and 27) were removed since they neither represent the approach nor avoidant coping styles. The remaining 24 items were then listed in the order shown in the appendix, and one item each was selected from each pair by drawn lots (**Avoidant:** Items 1, 3, 6, 11, 13, 21; **Approach:** 7, 12, 15, 23, 24, 25). The original and the resulting 12-item versions of the BCI are attached as Appendix Ia and b. The items on the BCI are phrased in the form of short descriptions of people's usual coping responses to hardships in life. Each item carries the 4-point Likert-type response options and is scored as follows: 0 = "I usually don't do this at all"; 1 = "I usually do this a little bit"; 2 = "I usually do this a medium amount" and 3 = "I usually do this a lot". Total scores on each of the scales are calculated by summing the appropriate items for each scale. No items are reversed scored. For total coping style scoring, all items are scored and added together to obtain a final score. This total score could range from zero (0) to 36.

The adapted version of the BCI was then subjected to a pilot study with 30 respondents, during which the two versions

correlated. The results obtained (BCI-28 = 0.88, BCI-12 = 0.94) justified the use of the 12-item version in this study. The results from the pilot study justify their use in this study. Written permission to explore the psychometric properties of the scale was obtained from the authors.

Satisfaction with Life Scale: The Satisfaction with Life scale (SWLS) was developed by Diener et al. (1985). The SWLS is a 5-item scale that conceptualises life satisfaction as a subjective appraisal of how close one's living conditions are to their ideal situation (Diener *et al.*, 1985). Questions are worded so that participants evaluate their lives based on their individual beliefs as to what constitutes the ideal (for example, "the condition of my life is excellent"). Each item is based on a seven-point Likert-type scale, ranging from one (1) strongly disagree to seven (7) strongly agree. A total score was calculated from the 5 items, the range being 5 to 35. A score of 20 is the middle point, so a higher score on the scale indicates elevated levels of life satisfaction. The scale has been reported to consistently show good psychometric properties and has been used in a number of studies. For example, Abolghasemi and Varaniyab (2010)

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reported an alpha reliability co-efficient of .82. The SWLS has been used in Nigeria by Oladipo and Balogun (2012) among adolescents and the study reported that a Cronbach alpha of .79 was obtained for the scale. The results of the pilot study indicated that the BCI had a convergent validity of 0.52 as measured against the Satisfaction with Life Scale (SWLS). The current study found a reliability coefficient of 0.64 among persons living with hypertension.

The Kessler Psychological Distress Scale (KPDS): The scale consisted of 10 questions and was developed by Kessler and Mroczek (1992). The scales focus on non-specific psychological distress and are about the level of stress, anxiety and depressive symptoms a person may have experienced in the most recent four-week period. The response categories for each of the 10-items are “1 = All of the time”; “2 = Most of the time”; “3 = some of the time”; “4 = A little of the time”; “5 = none of the time”. The sample item includes: “Did you feel tired out for no good reasons?”; “Did you feel nervous?”; “Did you feel so nervous that nothing could calm you down?”. The values of the kappa and weighted kappa scores ranged from 0.42 to

0.74, indicating that K10 is a moderately reliable instrument. Also, the internal reliability of the scale was excellent (Cronbach's $\alpha = 0.89$). Akram and Khuwaja (2014) reported a reliability coefficient alpha of 0.80 using the Pakistan samples. Aber, Jones and Raver (2007) reported a reliability coefficient alpha of 0.70 in their study using a Nigerian sample. The results of the pilot study indicated that the BCI had a divergent validity of -0.26 as measured against the Kessler Psychological Distress Scale (KPDS). The current study found a reliability coefficient of 0.76 among persons living with hypertension.

Procedure

Data were collected from hypertensive patients attending the OAUHC clinic on designated clinic days (Tuesdays and Wednesdays). The research team introduced the participants to the study during their clinic visits. After obtaining informed consent, participants were provided with the BCI-12 questionnaire and a brief demographic form. To ensure the accuracy and completeness of responses, the research team reviewed each completed questionnaire before participants left the clinic. This process ensured data quality and minimised missing

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or invalid responses, contributing to the reliability of the study outcomes.

Data Analysis

Data analysis was conducted using both descriptive and inferential statistics to evaluate the reliability and validity of the adapted Brief COPE Inventory-Short Scale (BCI-12). Descriptive statistics were used to summarise the demographic characteristics of the participants, including age, gender, marital status, religion, education level, and income categories. Measures such as means, standard deviations, and percentages were calculated to provide an overview of the sample distribution. In order to assess the internal consistency reliability of the BCI-12, Cronbach's alpha was calculated. A threshold of 0.70 was considered acceptable for reliability. Criterion validity was evaluated using Pearson's correlation to examine the relationships between the BCI-12 subscales and two external measures: the Satisfaction with Life Scale

RESULTS

Reliability Analysis

The reliability of the Brief COPE Inventory (BCI-12) was assessed to determine its internal consistency. The total scale exhibited acceptable reliability with a

(SWLS) and the Kessler Psychological Distress Scale (KPDS). Significant positive correlations with KPDS and negligible correlations with SWLS were expected, consistent with the theoretical framework of adaptive and maladaptive coping.

Ethical statement

Ethical approval was obtained from the Research Ethics Committee of Institute of Public Health (IPH) with HREC NO: IPH/OAU/12/2130 and from the Obafemi Awolowo University Health Centre. All participants were fully informed about the study's objectives and procedures and provided written consent before participation. Measures were taken to ensure confidentiality by anonymising responses and securely storing data. Participants were also informed of their right to withdraw at any point without repercussions. The study adhered to ethical guidelines outlined by the Declaration of Helsinki and local institutional standards.

Cronbach's alpha of **0.72**, indicating good internal consistency. Subscale reliability for Avoidant Coping and Approach Coping was **0.779** and **0.667**, respectively. These findings align with the theoretical structure

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of the BCI-12, with slightly lower reliability for Approach Coping likely due to item heterogeneity.

Table 1: Reliability Analysis of the BCI-12

Domain	No. of Items	Cronbach's Alpha
Brief COPE Inventory	12	0.72
Avoidant Coping	6	0.779
Approach Coping (6 items)	6	0.667

Validity Analysis

To evaluate the construct validity of the BCI-12, convergent and divergent validity was assessed by correlating the scale with established external measures.

Criterion-dependent Validity of the Scale

Table 2: Inter-correlation of Convergent and Divergent Validity of life satisfaction, Kessler psychological distress and brief cope inventory (N = 242)

Scales	SWLS	KPDS	BCI
SWLS	-		
KPDS	0.38	-	
BCI	0.013	0.52*	-

- Note *= Correlation Significant at the .05 level (2-tailed test)
- **= Correlation Significant at the .01 level (2-tailed test)
- SWLS = Life satisfaction scale
- KPDS = Kessler psychological distress scale

Convergent Validity

Convergent validity was evaluated by correlating the BCI-12 with the Kessler Psychological Distress Scale (KPDS-10). The Pearson correlation coefficient was **0.52**, significant at the **0.05 level** ($p < 0.05$). This result reflects a moderate positive relationship, suggesting that the BCI-12 appropriately captures constructs associated with psychological distress while maintaining its distinct focus on coping styles.

Divergent Validity

Divergent validity was assessed by examining the correlation between the BCI-12 and the Satisfaction with Life Scale (SWLS-5). The correlation coefficient was **0.013**, indicating a negligible relationship. This finding aligns with the expectation that coping strategies, as measured by the BCI-12, are distinct from life satisfaction constructs.

Descriptive Statistics

The mean total score for the BCI-12 was **35.30** (SD = 5.39), with subscale means of **11.20** (SD = 4.10) for Avoidant Coping and **16.40** (SD = 3.80) for Approach Coping. Participants relied more heavily on approach-oriented coping strategies, reflecting an adaptive coping style

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prevalent in this sample. The means and standard deviations of the BCI-12 subscales are contextualised within the hypertensive population. For example, higher mean scores in the Avoidant Coping subscale suggest a potential tendency for maladaptive coping mechanisms within this group, warranting targeted interventions.

Table 4: Inter-correlation of the BCI version and the BCI-12 adapted version (N = 242)

Scales	BCI-28	BCI-12
BCI-28	-	
BCI-12	0.72**	-

Note *= Correlation Significant at the .05 level (2-tailed test)

**= Correlation Significant at the .01 level (2-tailed test)

BCI-28 = Brief Coping Inventory Original Version

BCI-12 = Brief Coping Inventory Adapted Version

The table demonstrates that the adapted BCI-12 version is highly correlated with the original BCI-28 version (Appendix 1), indicating that the shorter BCI-12 (Appendix II) can effectively capture and measure coping strategies in a manner that aligns well with the longer BCI-28. Depending on their needs, researchers and practitioners can have confidence in using either version, as both appear to provide consistent and reliable results. The table's

notation clarifies the significance levels of the correlation coefficients, further emphasising the robustness of the relationship between the two scales. Correlation coefficients with external measures, such as the KPDS and SWLS, were explained in relation to the theoretical foundations of coping strategies. Positive correlations with life satisfaction and negative correlations with psychological distress underscore the scale's utility in distinguishing adaptive and maladaptive coping patterns.

Descriptive statistics were linked to broader psychological outcomes. For example:

- **Approach Coping Subscale:** Moderate mean scores indicate a balance between active problem-solving and the need for improvement in adaptive coping mechanisms.
- **Avoidant Coping Subscale:** Higher variability in standard deviations suggests differing levels of maladaptive coping, which could reflect diverse socio-cultural stressors among hypertensive individuals.

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DISCUSSION

This study aimed to evaluate the psychometric properties of the Brief COPE Inventory (BCI-12) to assess coping styles among individuals living with hypertension in Nigeria. Specifically, the study sought to validate the scale's reliability and construct validity, as well as its suitability for capturing avoidant and approach coping strategies in a population experiencing heightened psychological distress. The findings demonstrate that the Brief Coping Inventory Short Scale (BCI-12) is a reliable and valid instrument for assessing coping strategies among individuals living with hypertension. The overall internal consistency of the scale ($\alpha=0.717$) indicates acceptable reliability, while its associations with external constructs like psychological distress and life satisfaction support its construct validity.

The reliability of the BCI-12 suggests that it retains sufficient internal coherence to effectively measure coping mechanisms in this specific population. Its strong association with psychological distress indicates that maladaptive coping strategies may amplify emotional challenges, while its positive correlation with life satisfaction

implies that adaptive coping fosters better psychological outcomes. These findings suggest that the BCI-12 strikes a balance between brevity and psychometric robustness, making it a practical tool in both clinical and research settings, particularly in resource-constrained environments.

Several studies support the reliability and validity of shortened coping scales. For instance, Eni et al. (2020) found that the full BCI achieved reliability coefficients of 0.75–0.76 in a Nigerian population, highlighting its cultural adaptability and internal consistency across diverse settings. Similarly, Carver et al. (1989), in their foundational work, argued that shorter versions of the COPE Inventory maintain strong psychometric properties while alleviating respondent burden, especially for populations dealing with chronic stress. Conversely, some authors express reservations about scale reduction. Clark et al. (1995) observed that shortened scales might compromise the internal consistency of specific subscales, such as Approach Coping, which aligns with this study's finding of a relatively lower reliability for this dimension

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($\alpha=0.667$ \alpha = 0.667). According to Morales-Rodríguez (2021), reducing items can weaken the conceptual depth of some coping aspects, which may impact their sensitivity to subtle behavioural responses. These critiques underscore the importance of ensuring that scale reductions do not undermine the theoretical constructs being measured.

The acceptable reliability of the BCI-12 likely stems from its careful selection of items that adequately represent the core dimensions of coping while balancing brevity and comprehensiveness. However, the relatively lower reliability of the Approach Coping subscale may reflect the complexity of adaptive coping behaviours, which are influenced by diverse individual and contextual factors. It is plausible that the Nigerian cultural context, with its emphasis on collective resilience and communal support, might moderate the expression of coping behaviors, thereby affecting subscale reliability. Furthermore, the association of the BCI-12 with external constructs like psychological distress and life satisfaction validates its relevance in capturing coping strategies that influence

CONCLUSIONS

The study demonstrated that the BCI-12 is a reliable and valid instrument for assessing

well-being. The findings indicate that although the BCI-12 is a dependable and functional instrument, continuous assessments and possible enhancements are essential to maintain its sensitivity to subtle coping behaviours in varied populations.

Implications for Theory and Practice

This study marks the first time the BCI-12 has been adapted and validated in any cultural or clinical setting, demonstrating its potential for application in diverse populations. The moderate reliability of the Approach Coping subscale suggests that cultural factors, such as communal coping styles, may influence responses. Previous studies (Eni et al., 2020; Igwesi-Chidobe et al., 2021) have noted similar challenges in adapting psychometric tools for African contexts. Future refinements should consider qualitative methods to ensure theoretical coherence. The adapted BCI-12 shows promise for clinical use in assessing coping strategies among hypertensive individuals in Nigeria. However, its practical utility requires further validation through longitudinal studies and applications in diverse settings.

coping strategies among individuals living with hypertension in Nigeria. Avoidant

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Coping showed stronger reliability compared to Approach Coping, though the latter retained acceptable psychometric properties. The scale also exhibited distinct relationships with psychological distress and life satisfaction, confirming its construct validity. The adapted BCI-12 demonstrates acceptable reliability and validity as a tool for assessing coping strategies among hypertensive individuals in Nigeria. As the first study to adapt and validate this tool, it provides a foundation for future research. Findings highlight the importance of both approach and avoidant coping mechanisms in hypertension management, providing valuable insights for tailoring psychological interventions and counseling services. The BCI-12 addresses the need for concise and culturally relevant assessment tools, reducing respondent burden while maintaining strong psychometric properties. Its utility extends to resource-constrained settings, enhancing the effectiveness of clinical interventions and supporting advancements in stress and coping research. Beyond hypertension, the BCI-12 has the potential for broader application in other chronic conditions, paving the way for future studies on its predictive validity and theoretical

contributions. This development represents a significant step forward in mental health assessment, offering practical and impactful solutions for populations facing chronic stressors.

Despite its contributions, the current study has several limitations that must be acknowledged. First, the reliance on self-reported data introduces the potential for response biases such as social desirability or recall inaccuracies. Second, the sampling frame was restricted to urban clinics, which limits the applicability of the findings to rural or marginalized populations. This urban-centric focus may overlook coping dynamics unique to non-urban settings. Lastly, the study did not incorporate formal content validity measures such as CVI or CVR in its initial design. This omission limits the robustness of the conclusions regarding the relevance and clarity of specific items in the BCI-12.

To advance understanding and application of the BCI-12 and related coping frameworks, future research should consider several strategic enhancements. First, incorporating qualitative research methods is crucial to uncover the nuanced cultural tones embedded in individual coping strategies. Focus group discussions and in-depth interviews, especially within

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diverse cultural contexts, would offer richer insights than quantitative data alone. Additionally, pilot testing should be extended to rural and semi-urban populations. This will enhance the generalizability of findings and ensure that the coping constructs measured by the BCI-12 are relevant across different geographical and socio-economic groups. Another area requiring attention is the improvement of content and construct validity. Future studies should employ Content Validity Index (CVI) and Content Validity Ratio (CVR) to rigorously assess the relevance and clarity of each item on the BCI-12. To further strengthen construct validation, researchers should include instruments such as the Perceived Stress Scale (PSS) for assessing convergent and

divergent validity. This would allow for a more comprehensive evaluation of how well the BCI-12 captures distinct aspects of coping. Beyond immediate psychometric concerns, longitudinal research designs should be adopted to explore the predictive validity of the BCI-12 over time. This would be especially beneficial in understanding how coping styles evolve or remain stable in response to long-term stressors. Additionally, the influence of socio-economic and cultural variables on coping mechanisms warrants systematic investigation. These factors likely shape the way individuals interpret stress and choose adaptive or maladaptive responses..

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CONFLICT OF INTERESTS

The authors declare that there are no conflicts of interest.

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Appendix Ia
Brief Cope Inventory (28- Items)

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Instructions: The following questions ask how you have sought to cope with hardship in your life. Read the statements and indicate how much you have been using each coping style.

S/N	Items	I haven't been doing this at all	A little bit	A medium amount	I've been doing this a lot
1.	When I need a break from thinking about things, I distract myself with work or other hobbies.				
2.	I have been focusing the majority of my energy on taking action to improve the circumstances in which I find myself.				
3.	I had been repeatedly telling myself, "this can't be real."				
4.	I've been self-medicating with booze and other narcotics so that I can get through the day.				
5.	Others have been providing me with emotional assistance recently.				
6.	I have stopped making an effort to find a solution to this problem.				
7.	I've been making an effort to improve the issue by taking some concrete steps.				
8.	I have been stubbornly refusing to accept the fact that it has taken place.				
9.	I've been speaking stuff in order to get my uncomfortable sensations out of my system.				
10.	I have been relying on the assistance and guidance of other people.				
11.	I've been turning to drink and other substances as a coping mechanism in order to make it through this.				
12.	I've been making an effort to reframe my perspective on it so that it takes on a more optimistic tone.				
13.	I've been criticising myself.				
14.	I've been racking my brain for a solution to the conundrum of what to do next.				
15.	I've been receiving comfort and understanding from someone.				
16.	I've given up trying to deal with all that's going on.				
17.	I've been trying to find a silver lining in this cloud of darkness that we find ourselves in.				
18.	I've been making jokes about it.				
19.	I've been going to the movies, watching television, reading, daydreaming, sleeping, or shopping as a means of reducing the amount of time that I spend considering it.				
20.	I've come to terms with the fact that it already took place and have come to accept it as a given.				
21.	I have been venting my angry and frustrated sentiments.				
22.	I have been searching for solace in the practises and teachings of my faith and other spiritual practises.				
23.	Regarding what it is that I have been attempting to acquire advise or assistance from other individuals.				
24.	I've been working on being more accepting of the situation.				

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25.	I've given a lot of consideration to the next measures that need to be taken.				
26.	I have been putting the blame for what has transpired on my own shoulders.				
27.	I've been laughing at the circumstance while praying, meditating, or just making jokes about it.				
28.	Regarding what it is that I have been attempting to acquire advise or assistance from other individuals.				

Appendix Ib

Brief Coping Inventory (12 – Items)

Coping styles (rBCI-12)

Instructions: The following questions ask how you have sought to cope with hardship in your life. Read the statements and indicate how much you have been using each coping style.

S/N	Domain	Items	I haven't been doing this at all	A little bit	A medium amount	I've been doing this a lot
1.	Avoidant	I've been turning to work or other activities to take my mind off things.				
2.		I've been saying to myself "this isn't real".				
3.		I've been giving up trying to deal with it.				
4.		I've been using alcohol or other drugs to help me get through it.				
5.		I've been criticizing myself.				
6.		I've been expressing my negative feelings.				
7.	Approach	I've been taking action to try to make the situation better.				
8.		I've been trying to see it in a different light, to make it seem more positive.				
9.		I've been getting comfort and understanding from someone.				
10.		I've been trying to get advice or help from other people about what.				
11.		I've been learning to live with it.				
12.		I've been thinking hard about what steps to take.				