

## Construction of Burnout Scale for Adults: A Reliable Measure



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**Abstract:** *The main goal of this research was to develop a Burnout Scale for Adults (BSA) in Urdu and evaluate its reliability. Initially, a pool of items was established following Kristensen's definition. After undergoing expert evaluation and item analysis, this pool was narrowed down to 76 items. Exploratory Factor Analysis (EFA) was performed afterward on a 54-item scale administered to 496 adults (181 men, 315 women) aged over 18 in Gujrat, Pakistan, resulting in a 22-item, five-factor solution. Confirmatory Factor Analysis (CFA) validated this structure on another sample of 496 adults from the same area. The final 22-item BS-A exhibited strong reliability and construct validity, making it suitable for measuring burnout in Pakistani adults for further research and counseling purposes.*

**Keywords:** Development, Burnout Scale, Adults, Validity, Reliability.

### Introduction

The term "burnout" emerged in the psychosocial literature around the mid-1970s, independently introduced by Freudenberg (1974) and Maslach (1976). Both researchers observed similar reactions among volunteers involved in aiding underprivileged individuals, leading them to develop the concept separately. Initially, burnout wasn't a theoretical construct but rather a practical term reflecting various psychosocial issues among individuals engaged in professions involving direct interaction with people. During the 1970s, occupational health psychology primarily concentrated on industrial workers, overlooking professionals like social workers, nurses, teachers, and others in the human service sector (Kristensen et al., 2005).

As per the original description by Maslach and Jackson (1986), burnout represents a combination of emotional fatigue, depersonalization, and decreased personal fulfillment experienced by individuals engaged in professions involving interactions with others.

Kristensen et al. (2005) has described the delineation of burnout involves two dimensions physical and psychological exhaustion encompassing three areas: personal, work-related, and client-related burnout revolve around fatigue and exhaustion, which are central to the concept. This corresponds to the historical development of burnout and is consistent with a recent definition proposed by Schaufeli and Greenglass (2001). Their definition

characterizes burnout as a state involving physical, emotional, and mental fatigue due to prolonged involvement in emotionally taxing work situations (Schaufeli & Greenglass, 2001). Curiously, this definition closely resembles the one proposed by Pines and Aronson (1988), referring to a condition marked by both physical and emotional fatigue resulting from extended participation in emotionally demanding circumstances (Pines & Aronson, 1988). Furthermore, it underscores the significance of fatigue and exhaustion as integral aspects the concept involves a combination of physical tiredness, emotional fatigue, and mental exhaustion.

Buunk and Schaufeli's (1993) social exchange model differentiates between emotional and cognitive origins of burnout within nursing staff. They identified three stress-related factors (uncertainty, perceived justice, and loss of control) arising from interactions with patients. In their view, nursing as a profession involves considerable uncertainty, and the pursuit of fairness and compensation often leads to frustration (Cummings et al., 2005; Segura et al., 2006). These authors claim that since they are afraid of being judged, depressed nurses avoid asking their peers for social help. They also emphasize how the propagation of the burnout syndrome is a result of social affiliation. According to Buunk and Schaufeli (1993), self-esteem, level of responsiveness, and direction in the exchange all influence the relationship between background variables and symptoms of burnout at work. The foundation of Winnubst's (1993) model is the assumption that burnout is a condition of mental and physical weariness brought on by persistent emotional stress due to occupational stress, which affects all employees. The link between culture, organizational structure, social support and organizational climate is the main focus of this approach. Conflict with others is a common symptom of burnout syndrome and can cause interpersonal difficulties as well as role failure.

### **Literature Review**

The Copenhagen inventory for assessing burnout (Kristensen, 2005) has been adjusted for different populations. Papaefstathiou et al.

(2019) translated and customized the Copenhagen inventory for use with Greek doctors, while Ogunsuji et al. (2022) examined the Copenhagen inventory's psychometric characteristics, comparing it against the Maslach Burnout inventory specifically for Nigerian doctors.

Chin et al. (2018) conducted research to validate the Copenhagen inventory and translated it into the Malay language. The face validity index of the CBI-M surpassed 0.8. All three dimensions of the CBI-M exhibited positive goodness-of-fit indicators ( $C_{min}/df = 2.99$ ,  $RMSEA = 0.066$ ,  $GFI = 0.906$ ,  $CFI = 0.938$ ,  $NFI = 0.910$ ,  $TLI = 0.925$ ). The composite reliability scores for these dimensions fell within the range of 0.84 to 0.87. Furthermore, Cronbach's alpha coefficients for the three dimensions ranged between 0.83 and 0.87.

The Burnout Assessment Tool (BAT) was devised by Schaufeli et al. (2020). In an earlier qualitative inquiry, 49 professionals participated in interviews concerning their understanding of burnout. Using a dialectical approach, four core aspects exhaustion, mental detachment, impaired emotional and cognitive functions alongside three supplementary elements depressed mood, psychological distress, and psychosomatic complaints were established as the key components of the Burnout Assessment Tool (BAT). In a subsequent investigation, the BAT underwent evaluation of its psychometric characteristics, including factorial validity, reliability, and construct validity, in a diverse cohort of 1500 Flemish workers.

Maslach and Jackson formulated a scale to evaluate different facets of the burnout syndrome among a diverse group of human services professionals. Through the analysis of the gathered data, three subscales were identified: emotional exhaustion, depersonalization, and personal accomplishment. Diverse psychometric evaluations demonstrated that the scale possesses strong reliability and validity in gauging burnout.

In Pakistan, the Emotional Burnout Scale (EBS) was devised by Shaheen and Mahmood in 2018.

This scale is employed to evaluate the degree of minimal personal engagement experienced by teachers in their professional roles. However, there remain additional aspects of burnout that require further exploration.

Hence, the objective of this research is to fill the existing gap in scholarly work by developing a culturally appropriate and dependable measure for evaluating moral disengagement among adults in Pakistan. This scale is specifically designed in Urdu to cater to this need.

The current circumstances necessitate a valid and dependable method for measuring burnout, yet there is a lack of a native scale tailored to assess burnout in adults within the context of Pakistan. There is an urgent need to create a psychologically reliable scale for gauging burnout among adults. An adult is someone who has reached maturity and assumes roles such as a spouse, parent, taxpayer, caregiver, and responsible member of society. Moreover, adults constitute a significant portion of the global population; in 2017, individuals aged around 74.56% of the global population is aged 15 and above, according to the World Demographic Profile (April 20, 2018). In Pakistan, adults make up 46.22% of the entire population. Among them, individuals aged 20-39 account for 27.33%, those aged 40-64 comprise 15.37%, ages 65-74 constitute 2.29%, and individuals aged 75 and above make up 1.21% (Pakistan Bureau of Statistics, 2017). Consequently, a significant portion of the population falls into the adult age bracket. This phase is crucial as adults not only bear responsibility for their actions but also play a central role in fostering ethical conduct and instilling ethical values in their dependents. (Lama, 2016). There is a lack of existing research in the literature that specifically examines the impact of burnout on young individuals and its influence on their performance. This study aims to fulfill this critical gap by creating a native, reliable, and concise scale to assess burnout among adults in Pakistan using the Urdu language.

## Method

The study comprised two phases. The initial

phase involved the comprehensive creation of an original Burnout Scale intended for adults (BS-A), followed by subsequent efforts phase focused on evaluating the reliability of the newly developed BS-A.

### Phase I: Creation of the BS-A

This stage encompassed five key steps: conceptualization testing, generating an item pool, seeking expert opinions, conducting a trial, and analyzing the items.

**Stage 1: Test conceptualization.** Burnout was operationally described based on Kristensen's (2005) definition as a multidimensional concept involving mental, physical, and emotional exhaustion. The questionnaire is tailored for adults aged 18 and older, regardless of gender. It operates as a self-administered survey employing a 5-point Likert scale to measure agreement with statements concerning the theoretical aspects of burnout.

**Stage 2: Creation of an item pool.** A set of 100 items was developed using a deductive approach. New items relevant to the culture were formulated based on Kristensen's (2005) definition of burnout, as well as insights from previous burnout scales (Kristensen et al., 2005; Shaheen & Mahmood, 2018). A review of prior theories and existing research on burnout was conducted. Collaborative sessions were held with researchers to translate the physical and psychological dimensions of burnout into behaviors that are culturally relevant. Additionally, semi-structured interviews were carried out with five adults (one male and four females) aged above 18, all of whom had attained at least a graduate level of education. The participants were requested to express how the physical and psychological aspects of burnout manifest behaviorally within our indigenous culture.

This resulted in the creation of 50 items corresponding to physical burnout and an additional 50 items relating to psychological burnout.

**Stage 3: Assessment by specialists.** The set of items formed in Urdu was subjected to content validation by a panel consisting of six experts

knowledgeable in scale creation and well-versed in the burnout concept. This expert panel comprised three PhD scholars affiliated with the University of Gujrat, Pakistan, alongside three PhD students currently studying at the same institution.

The experts meticulously assessed each item, considering its overall relevance to the burnout construct, its alignment with specific mechanisms, and its suitability within the context of Pakistani culture. Additionally, they scrutinized items for clarity, cultural appropriateness, comprehension, importance, coherence, precision, content, and relevance to adults in Pakistan. Based on the expert panel's evaluations, redundant, complex, ambiguous, or inconsistent items were either removed or modified, resulting in a more refined 76-item scale that was deemed more pertinent and suitable in terms of quality. The final response format, employing a 5-point Likert scale to measure agreement, was determined following the expert panel's endorsement.

**Stage 4: Pilot testing.** The batch of 76 items designed to evaluate burnout underwent testing on a group of 50 adults, equally comprising 25 men and 25 women, selected from the adult population in Gujrat, Pakistan. The selection of participants was done through convenient sampling methods. Eligible participants for this sample were individuals who aged 18 years and above, possessing adequate literacy to comprehend and interpret the test items. The sample encompassed adults residing in the Gujrat district who exhibited mental stability and expressed willingness to take part in the study.

The aim was to examine how well the test items were understood by the participants concerning the participants understood the concepts and terminology in their native language, Urdu. They showed a strong understanding of the test's terms and ideas because the content was delivered in Urdu, their primary language, which they easily comprehended.

Participants took around 30 to 35 minutes to complete the scale.

**Stage 5: Item evaluation.** Item-total correlation was conducted with a group of 496 adults (comprising 181 males and 315 females), aged 18 years and older, encompassing diverse roles including students, professionals, and personnel from different educational institutions throughout the Gujrat district.

Following the item analysis, 22 items were eliminated from the initial 76 due to item-total correlation values below .70. Consequently, the scrutiny led to the selection of 54 items for BS-A, each exhibiting notable Correlation values between individual items and the total score spanning from .70 to .90 ( $p < .05$ ).

## **Phase II: Verification via Factor Analysis**

The process of validating and evaluating the psychometric properties of BS-A involved various steps. These included confirming the construct validity through factor analyses and assessing the correlation between the subscales and the total score. Furthermore, the reliability of the test over time and its internal consistency were examined using test-retest reliability and Cronbach's alpha.

### **Exploratory Factor Analysis (EFA).**

**Sample.** Exploratory Factor Analysis (EFA) was conducted on a cohort of 496 adults, comprising 181 males and 315 females, aged 18 years and older. These individuals were selected using a convenient sampling method from Gujrat district in Pakistan. This diverse group included individuals from different walks of life, including students, educators, professionals, and community members across various adult life stages. The test was administered using a convenient sampling method.

To be part of the sample, individuals needed to be over 18 years old and possess sufficient literacy to comprehend the items for the test were assessed among participants from all stages of adulthood within Gujrat district, specifically focusing on mentally healthy individuals who voluntarily participated in the process. The Table 1 illustrates the demographic details.

**Table 1**

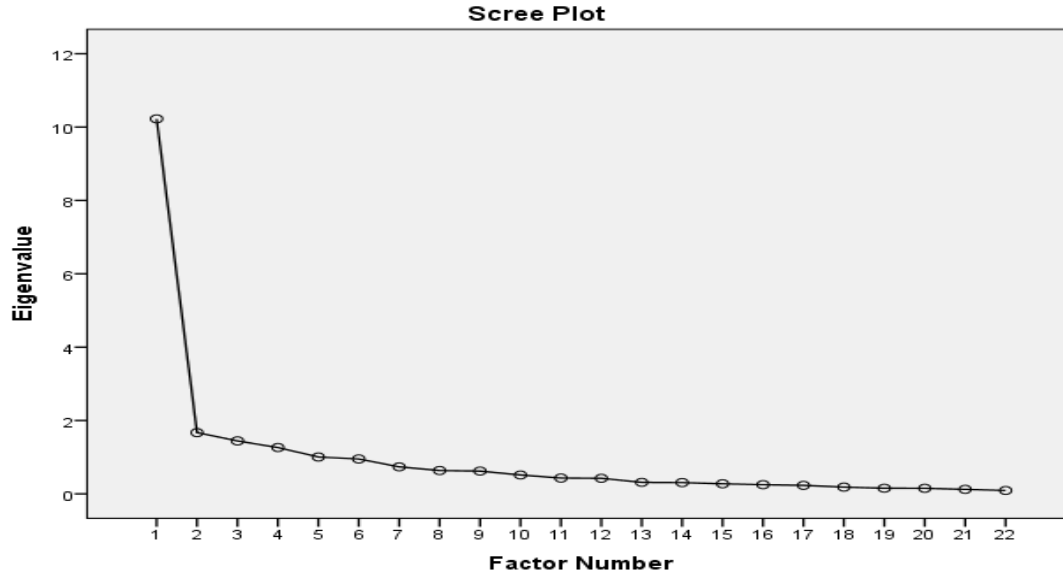
The demographic details of the sample used for the Exploratory Factor Analysis (N = 496)

Variable	Category	<i>n</i>	%
Gender	Men	181	36.5%
	Women	315	63.5%
Age	18 – 25	470	94.8%
	26 – 35	24	4.8%
	36 – 45	2	.4%

**Procedure.** Official authorization was obtained from the educational institutions' higher authorities to collect data. The participants were personally approached using a convenient sampling method. Clear explanations were given about the test's purpose and instructions. Confidentiality was guaranteed to ensure genuine responses, and participants were appreciated for their involvement.

**Results.** The factor arrangement of the first 54-item edition of BS-A was investigated using IBM SPSS Statistics-21 software. To determine suitability for EFA, the sample size and Kaiser-Meyer-Olkin sampling adequacy measure were assessed. The sampling adequacy, surpassing

the suggested threshold of .60, indicated readiness for analysis (Pallant, 2013). Bartlett's test of sphericity revealed a notably significant chi-square value of 8098.56(231) ( $p = .000$ ). Furthermore, in preparation for EFA, other assessments were conducted, including identifying missing values and outliers using data screening techniques and reviewing boxplots (Hair, Black, Babin, & Anderson, 2013). The mean and median values (230) displayed near-equality, while the score distribution exhibited a skewness of 0.28 and a kurtosis of 0.32, both falling within the permissible normal bracket of  $\pm 2$  (George & Mallery, 2016; Ghasemi & Zahediasl, 2012).



Graph 1. Scree Chart Depicting Factor Extraction from 22 Items in BS-A

Principal Factor Analysis, employing Varimax Orthogonal Rotation, was utilized to reveal the fundamental factor arrangement among the 54 items initially. In the first iteration, 12 factors emerged, each with Eigen values exceeding 1, explaining 67.71% of the variance. To align with

the burnout model by Kristensen (2005), items with lower communalities were excluded, and a subsequent analysis was performed on 22 items. This refined five-factor structure captured 63.22% of the overall variance, falling within the acceptable range of 40 to 60% (Ozen &

Turan, 2017). The assignment of these items to specific factors was based on their content and the higher values of factor loading. The scree plot also indicated support for a five-factor solution (see Figure 1).

Therefore, the Exploratory Factor Analysis (EFA) discovered 22 items distributed among five factors, accounting for a total variance of 63.22%. Items with factor loading values below .40 were excluded. The first factor, Mental Exhaustion, includes 8 items with factor

loadings between .4 to .7. The second factor, Physical Exhaustion, comprises 6 items with factor loadings from .4 to .8. The third factor, Perception of Incapability, consists of 3 items with factor loadings ranging from .42 to .64. The fourth factor, Emotional Exhaustion, encompasses 3 items with factor loadings between .5 to .6. Lastly, the fifth factor, Motivation Deficit, involves 2 items with factor loadings from .5 to .8.

**Table 2**

Factor Loadings Resulting from Varimax Rotated Exploratory Factor Analysis of 22 Items on BS-A (N=496)

Sr. No	Item No.	Factors				
		Mental Exhaustion	Physical Exhaustion	Perception of incapability	Emotional Exhaustion	Motivation deficit
1	33	<b>.771</b>	.124	.285	.193	.092
2	45	<b>.602</b>	.092	.527	.125	.075
3	55	<b>.662</b>	.281	.053	.232	.199
4	56	<b>.726</b>	.214	.337	.127	.141
5	59	<b>.631</b>	.256	.327	.198	.267
6	60	<b>.473</b>	.307	.075	.239	.445
7	61	<b>.670</b>	.110	.040	.486	.202
8	62	<b>.511</b>	.276	.237	.484	.050
9	38	.317	<b>.406</b>	.049	.170	.074
10	43	.223	<b>.455</b>	.289	.163	.285
11	54	.422	<b>.613</b>	-.228	.119	.219
12	66	.114	<b>.554</b>	.462	.352	.080
13	68	.041	<b>.829</b>	.284	.116	.055
14	72	.238	<b>.644</b>	.333	.212	.095
15	27	.277	.314	<b>.409</b>	.104	.332
16	34	.211	.167	<b>.669</b>	.213	.171
17	71	.367	.269	<b>.619</b>	.192	.072
18	24	.306	.231	.226	<b>.595</b>	.280
19	41	.266	.287	.230	<b>.664</b>	.190
20	46	.418	.179	.332	<b>.514</b>	.029
21	49	.014	.139	.489	.326	<b>.529</b>
22	52	.221	.099	.114	.096	<b>.850</b>
Eigen Values		10.22	1.67	1.44	1.26	1.00
Values of Variance		46.47%	7.58%	6.56%	5.74%	4.56%

Note. Factor loadings > .40

#### Confirmatory Factor Analysis (CFA).

**Sample.** CFA was conducted on a sample of 496 adults, consisting of 181 men and 315 women, aged 18 years and older. The sample was collected through convenient sampling from a

range of educational institutions, such as the University of Gujrat, schools, and colleges located in Gujrat, Kharian, Lalamusa, and Jalalpur Jattan cities. It also involved individuals from various local communities residing across

different areas within the Gujrat district. The selection criteria remained consistent with those

applied in the EFA's sample. The demographic specifics of this sample can be found in Table 3.

**Table 3**

Demographic Attributes of the Study Participants (N = 496)

Variable	Category	<i>f</i>	%
Gender	Men	181	36.5%
	Women	315	63.5%
Age	18 – 25	470	94.8%
	26 – 35	24	4.8%
	36 – 45	2	.4%

**Procedure.** Authorization was sought from the administrative bodies of various public and private Learning centers such as schools, colleges, and the university, along with the neighboring community members from diverse regions within the Gujrat district were approached directly. Clear instructions regarding the test were provided to the participants, assuring them of confidentiality and obtaining their informed consent. Subsequently, the 22-item burnout scale was administered.

**Results.** Confirmatory Factor Analysis (CFA) was performed utilizing AMOS Graphics (version 21) to validate the previously established five-factor structure of the BS-A derived from in the initial phase, the Exploratory Factor Analysis (EFA) was conducted. Subsequently, the preliminary results of the Confirmatory Factor Analysis (CFA) displayed positive indicators such as Comparative Fit Index (CFI), CMIN/DF, RMSEA, GFI, AGFI, TLI, and IFI.

**Table 4**

Summary of Model Suitability for BS-A via Confirmatory Factor Analysis (N=413)

Model	$\chi^2$	df	NFI	CFI	RMSEA
BS-A	2132.774***	179	.724	.740	.148

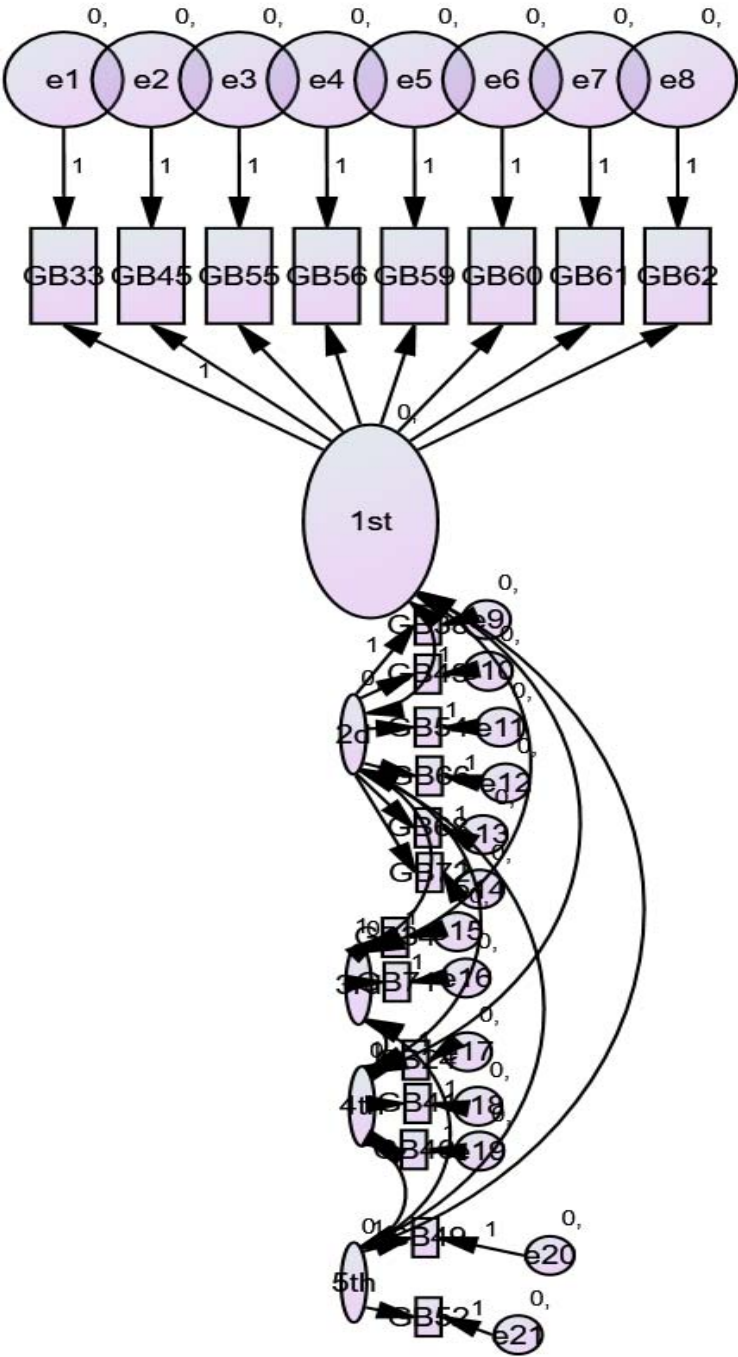
Remark: Structural equation modeling was employed to conduct the analysis. NFI represents the normed fit index, CFI stands for the comparative fit index, and RMSEA denotes the root-mean-square error of approximation.

The CMIN value refers to the chi-square value, and its significance indicates an unsatisfactory fit. CMIN/DF, which signifies the discrepancy divided by the degree of freedom, stands at 11.91 for the default model. An acceptable fit is indicated when the CMIN/DF value is  $\leq 3$  (Kline, 1998). Therefore, our model does not meet the criteria for an acceptable fit. NFI, known as the Normed Fit Index or Delta 1, is also indicative of this (Bollen, 1898), the NFI values range between the independence model

(representing a poor fit) and the saturated model (representing a perfect fit). A value of 1 signifies a perfect fit, whereas models with values less than 0.9 generally have room for significant improvement (Bentler & Bonett, 1980). With our model's NFI value at .72, there is room for improvement. The Comparative Fit Index (CFI), which varies from 0 to 1, indicates a strong fit when it approaches the value of 1, while a value of 1 represents a perfect fit (Hu & Bentler, 1999). The crucial value to focus on is the CFI for the default model. An excellent fit for the model is recognized when the CFI value is  $\geq 0.95$  (West et al., 2012). Our value stands at .740, which is near .95, indicating a good fit. RMSEA, short for Root Mean Square Error of Approximation,

evaluates the dissimilarity between the observed covariance matrix per degree of freedom and the predicted covariance matrix. (Chen, 2007). RMSEA values exceeding 0.1 are considered subpar, while those ranging from 0.08 to 0.1 are regarded as on the brink, values from 0.05 to

0.08 are seen as satisfactory, and values less than or equal to 0.05 are deemed highly effective (MacCallum et al, 1996). Therefore, the value derived from our model stands at the borderline, which is .148.





**Table 5**

Standardized estimates of parameters for the CFA model of BS-A (N=496)

<b>Scale</b>	<b>B(SE)</b>
<b>ME</b>	
Item 1	1.00
Item 2	0.88 (.04) ***
Item 3	.83 (.45) ***
	.98 (.04) ***
	.87 (.04) ***
	.80 (.05) ***
	.88 (.04) ***
	.95 (.04) ***
<b>PE</b>	
Item 5	1.00
Item 4	.88 (.08) ***
Item 6	.91 (.09) ***
	1.22 (.10) ***
	1.57 (.13) ***
	1.42 (.12) ***
<b>PI</b>	
Item 9	1.00
Item 7	1.21 (.07) ***
<b>EE</b>	
Item 12	1.00
Item 10	.94 (.04) ***
Item 11	.86 (.05) ***
<b>DM</b>	
Item 14	1.00
Item 13	.43 (.04) ***

*Remark: The standard errors are presented within parentheses. Factors are highlighted in bold type.*

ME = Mental exhaustion; PE = Physical Exhaustion; PI = Perception of incapability; EE = Emotional Exhaustion; DM= Deficit of Motivation

#### **Construct validity and reliability for BS-A.**

Reliability assessments were performed using SPSS-21 software to gauge the consistency and reliability of the recently created BS-A and its five individual subscales, examining both internal consistency and stability over time.

**Sample.** An assembly of 496 adults (comprising 181 men and 315 women) aged above 18 years was gathered through Conveniently selecting participants from the Gujrat district in Pakistan, the study conducted a thorough analysis of the

BS-A and its five subscales, utilizing Cronbach's alpha reliability, split-half reliability, and test-retest reliability measures for examination.

**Results.** BS-A's construct validity was confirmed using methods such as item-total correlation for the overall scale and subscale-to-total correlations. Reliability, on the other hand, was affirmed through test-retest, Cronbach's alpha, and split-half reliability assessments.

**Table 6**

Internal Consistency (Cronbach's Alpha) and Stability Over Time (Test-Retest Reliability) of BS-A and Its Subscales (N=496)

	Items	M	SD	$\alpha$	R
Mental Exhaustion	8	20.02	7.96	.91	.80**
Physical Exhaustion	6	15.31	5.54	.84	.76**
Perception of incapability	3	7.17	2.88	.77	.81**
Emotional Exhaustion	3	7.43	3.24	.82	.79**
Deficit in motivation	2	5.73	2.12	.74	.85**

Note. \*\*  $p < .01$ .

Table 6 showcases the Cronbach's alpha reliability of the BS-A scale, indicating an exceptionally high level of reliability, thus denoting the scale's excellent reliability (Sekeran, 2010; Gaur & Gaur, 2009; George & Mallery, 2003). The different sections within the Scale also demonstrate noteworthy internal consistency. The Cronbach's alpha reliability for the five subscales is deemed acceptable and fulfilling (Sekeran, 2010; Gaur & Gaur, 2009; George & Mallery, 2003). The scale displayed robust test-retest reliability, supported by a highly significant correlation between the initial test and the retest. This suggests the considerable

consistency of the new BS-A over an 8-day duration. Similarly, the individual sections within the BS-A also showcase significant stability ( $p < .01$ ) varying from moderate to high (Hinkle, Wiersma, & Jurs, 2003) with the exception of the correlation for the Advantageous Comparison Subscale is .48, with a significance level of  $p < .01$ .

The split half reliability for the initial portion stands at .85, while for the latter segment, it reaches .86, both falling within the acceptable range (Gaur & Gaur, 2009).

**Table 7**

Correlation between Individual Items and Total Score of BS-A (N=496)

Item No.	$r$	Item No.	$r$
1	.60**	11	.69**
2	.63**	12	.59**
3	.66**	13	.62**
4	.60**	14	.54**
5	.58**	15	.66**
6	.67**	16	.65**
7	.52**	17	.52**
8	.53**	18	.51**
9	.57**	19	.52**
10	.62**	20	.53**

Note. BS-A = Burnout Scale for Adults;  $r$  = Item-total correlation coefficient.

\*\*  $p < .01$ .

The BS-A also exhibits construct validity, indicated by notably strong ( $p < .01$ ) positive item-total correlations spanning from .5 to .6.

**Table 8**

Matrix of Correlations among BS-A and Its Subscales (N=496)

Scales & Subscales	1	2	3	4	5	6
Mental Exhaustion		.639***	.666***	.728***	.495***	.899**
Physical Exhaustion	—		.600***	.607***	.429***	.805***
Perception of incapability	—	—		.621***	.534***	.801***
Emotional Exhaustion	—	—	—		.489***	.826***
Deficit in motivation	—	—	—	—		.642***
Total BS-A	—	—	—	—	—	

Note. \* $p < .05$ . \*\* $p < .01$ .

The BS-A also showcases construct validity through subscale-to-total correlations across its five subscales exhibit stability at a considerable degree, ranging from moderate to high ([Hinkle et al., 2003](#)). It indicates each of the subscales is evaluating identical concept, which is burnout.

### Discussion

Developing a dependable measurement scale and verifying its psychometric traits are considered pivotal for advancements in the realms of social, health, and behavioral sciences ([Boateng, Neilands, Frongillo, Melgar-Quinonez, & Young, 2018](#)). Differences in culture play a vital role, much like individual differences, in shaping how we learn, adapt, and develop. They include aspects like personality, physical changes, and moral growth, all influenced by the environment we're in ([Habib, Saleem, & Mahmood, 2013](#)).

In recent years, the importance of the relatively new concept of burnout has notably risen due to its widespread occurrence in various settings like education, work, community, social interactions, and daily routines. Therefore, the main goal of this current study was to craft a concise, culturally relevant, and dependable instrument in Urdu, designed specifically for gauging burnout among adults in Pakistan. Additionally, the research sought to confirm the psychometric properties of this newly devised scale.

Initially, a comprehensive array of 100 items was formulated based on Kristensen's (2005) description of burnout. This extensive compilation aimed to ensure content duplication, aiming for a consistent and

dependable measure. Additionally, in line with suggestions by DeVellis (2017) and Streiner, Norman, and Cairney (2015), the generated item pool followed the guideline of being three to four times larger than the final scale. Following Morgado, Meireles, Neves, Amaral, and Ferreira's (2018) recommendation, a panel of six psychology experts, well-versed in crafting scales and relevant subjects, meticulously evaluated this item pool. Furthermore, it underwent testing on 50 adults to gauge the comprehensibility among prospective test takers. This thorough assessment resulted in a refined compilation of 100 items. The phase of item analysis remains pivotal in constructing theory-based scales ([Singh, Junnarkar, & Kaur, 2016](#)). In this research, the technique of item-total correlation was employed to recognize and choose assessment items highly linked with the creation of the moral disengagement gauge ([Dimitrov, 2012](#)). 76 items that displayed significant correlations exceeding .70 were incorporated into the scale, whereas those with item-total correlations below .30 were omitted ([Boateng et al., 2018](#)).

Exploratory Factor Analysis (EFA) was performed to streamline the process 54-item burnout scale and unveil the number of fundamental factors within it ([Pallant, 2013](#)). Morgado et al. (2018) recommends employing EFA to reveal underlying structures and patterns by reducing data. Prior to conducting EFA, various assumptions specific to the suitability of factor analysis, specifically EFA, was assessed. A sample comprising 496 adults was considered suitable for EFA, maintaining a minimum ratio of five respondents per item and considered as

adequate for this analysis (Costello & Osborne, 2005; Zhao, 2009). It surpassed the recommended criterion for factor analysis by Tabachnick and Fidell (2013), which suggests having a minimum of 300 respondents, as well as the guideline of a sample size exceeding 200 as suggested by Hoe (2008). Hence, according to Singh et al. (2016), a larger sample size is considered more favorable and acceptable.

In this study, Kaiser-Meyer-Olkin (KMO) measure of adequacy in sampling and Bartlett's sphericity test were conducted to evaluate if the data was appropriate for reduction (Tabachnick & Fidell, 2013). The KMO value obtained was 0.8, surpassing the acceptable threshold of 0.6, indicating that the sample is considered adequate for analysis (Pallant, 2013). As per Rovai, Bakar, and Ponton (2013), the current KMO value is exceptional, standing at 0.82, while Polit (2010) deemed this value as good since it surpassed the KMO threshold of 0.8. Additionally, the statistical significance of the chi-square value obtained through Bartlett's test of sphericity is notably high ( $p = .000$ ), as anticipated for producing a significant chi-square value ( $p < .05$ ) (Pallant, 2013; Polit, 2010) this indicates that the matrix of correlations doesn't meet the criteria for an identity matrix, making it appropriate for conducting Exploratory Factor Analysis (EFA) (Hair et al., 2013).

The data distribution for the 54-item burnout scale appeared to be close to normal since the mean and median values were nearly identical, and both the skewness and kurtosis values remained within the acceptable normal range of  $\pm 2$  (George & Mallery, 2016; Ghasemi & Zahediasl, 2012). The obtained value for  $\alpha$  (alpha) was .95, demonstrating a significantly high level of reliability, surpassing the minimum acceptable threshold of .70 (Hair et al., 2013; Pallant, 2013). Examination of the boxplot revealed that there were no extreme outliers in the data, which could potentially impact the findings of the EFA (Aguinis, Gottfredson, & Joo, 2013). Cases where data was incomplete or contained outliers as a result of incorrect data input were removed during the data screening process following data collection.

Consequently, the dataset was readied for factor analysis (Watkins, 2018). The Utilization of Principal Factor Analysis employing Varimax Rotation yielded a solution of five factors encompassing 22 items, each exhibiting factor loadings ranging from .40 to .72. Additionally, the scree plot corroborated the presence of the five-factor structure (Yong & Pearce, 2013).

The findings from the EFA did not entirely align with Kristensen's burnout definition. While it confirmed the presence of "mental exhaustion" and "physical exhaustion" as akin to Kristensen's personal burnout's physical and psychological mechanisms, it also uncovered additional burnout dimensions namely, incapability, emotional exhaustion, and a lack of motivation. Therefore, these forms of burnout are prevalent and common among the youth in our culture.

CFA affirmed the EFA-proposed five-factor structure post the removal of problematic items. The CFA revealed highly satisfactory model fit indices for the 22-item BS-A. Kline (2015) suggests that the ratio of CMIN to degrees of freedom equal to or lower than 3 denotes an adequate model fit, while Hooper, Coughlan, and Mullen (2008) emphasize an even stricter criterion, insisting on a  $CMIN/DF < 2$  for model fitness. The focus on the  $CMIN/DF$  ratio over the chi-square value is due to the latter's tendency to reject an adequate model, particularly in cases involving large sample sizes (Hooper et al. 2008). The  $CMIN/DF$  ratio in the present model fails to satisfy both standards, as it surpasses the threshold of 2 (Hooper et al., 2008; Kline, 2015). As per Kline's (2005) guidance, when the CFI value reaches or exceeds .95, it signifies a strong match with the model. In the current scenario, the CFI value is approaching this benchmark, indicating a positive alignment with the model. Similarly, the TLI value, coming close to the .95 mark, shows an acceptable correspondence with the model (Hooper et al., 2008, All, Mahdi, & Isaksson, 2013). The IFI value reached the specified benchmark of .95, signifying an acceptable level of fit for the model (Hu & Bentler, 1998). The RMSEA value at .1, combined with a significant PCLOSE, suggests

some limited evidence supporting the model's good fit (All et al., 2013; Hooper et al., 2008). The outcomes from various model fit indices indicated a favorable fit for the BS-A with its five subscales. This supports Kristensen's (2005) underlying theoretical model, albeit with some adjustments relevant to the current Pakistani cultural context.

Additional reliability assessments were carried out using a sample of 496 adults, revealing an exceptionally high Cronbach's alpha reliability of .90 for the BS-A scale, indicating outstanding reliability (Sekaran, 2010; Gaur & Gaur, 2009). The first half's split-half reliability stood at .85, and for the second half, it recorded .86, both indicating reliability within the accepted good range (Gaur & Gaur, 2009). Additionally, the BS-A showed adequate test-retest reliability, signaling its consistency over an 8-day duration (Hinkle, et al., 2003).

BS-A further demonstrated construct validity, evidenced by notably significant ( $p < .01$ ) affirmative correlations between individual items and the overall scale, ranging from  $r = .53$  to  $r = .73$ . Additionally, moderate to high correlations between the total scores of each subscale and the overall scale were observed, corroborating the shared essence of all test items and subscales as they gauge the central construct of burnout. Therefore, the strong internal consistency observed through item-total and subscale-total correlations in BS-A supports its construct validity.

### **Limitations and Suggestions**

The current study utilized acceptable sample sizes for factor analysis with a ratio of respondents to variables of 5:1, but future investigations using the same BS-A scale might benefit from employing a larger sample size that aligns with the recommended ratios of 10:1 or 30:1, potentially offering a more robust factor structure. Moreover, in forthcoming research focusing on psychometric properties, larger sample sizes could allow for the establishment of discriminant and convergent validity. Additionally, while this study primarily explored burnout among Pakistani adults through a two-factor definition, it is suggested

that future researchers delve deeper into various dimensions of burnout in this demographic. The examination of diverse aspects of burnout among adults in Pakistani culture can be explored through models beyond the five-factor model confirmed in this study, as supported by existing literature. Furthermore, the current survey-based data collection method employing convenient sampling has limitations. It is recommended that future research adopts qualitative methods such as detailed interviews and focus group discussions involving adults from diverse backgrounds to comprehensively explore burnout, acknowledging that foreign definitions of burnout may not fully encapsulate burnout behavior within the Pakistani culture. Therefore, there is a necessity for the development of an indigenous burnout model that accurately encapsulates this construct within the Pakistani cultural context. Subsequent studies should aim to enhance the applicability of BS-A by extending its validation to other regions and provinces across Pakistan.

### **Implications**

The BS-A holds the potential to gauge burnout across a broad spectrum among individuals aged 18 years and older, encompassing diverse settings and environments because of its generalized nature. Moreover, it serves as a valuable tool for researchers seeking insight into the phenomenon, particularly within the Eastern and specifically Pakistani cultural contexts. This study lays the groundwork for future research endeavors within the Pakistani context by offering a well-validated measure of burnout in the national language, Urdu. It opens avenues for conducting prevalence studies, investigating correlations, and implementing interventions pertinent to the Pakistani setting using this scale. Furthermore, it offers an opportunity to create tailored burnout scales specific to diverse populations and contexts. Its applications extend to clinical, counseling, occupational, and higher education settings, facilitating identifying issues. Additionally, researchers can investigate its appropriateness in professional and military settings domains, potentially aiding in personnel recruitment.

## Conclusion

In summary, this study contributed to the creation of a concise, culturally relevant, trustworthy, and dependable BS-A specifically tailored for assessing burnout in adults within the Pakistani context.

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## APPENDIX

Burnout scale for Adults
Mental Exhaustion
مجھے لگتا ہے کہ میری زندگی بے معنی ہو کر رہ گئی ہے۔
میں اکثر شکست خورہ محسوس کرتا/کرتی ہوں۔
ایسا لگتا ہے کہ میری قوت مدافعت ختم ہو رہی ہے۔
مجھے لگتا ہے میری زندگی بے مقصد ہو گئی ہے۔
میں اپنے کسی بھی کام سے مطمئن نہیں ہوں۔
اکثر بہت زیادہ ذہنی دباؤ محسوس کرتا / کرتی ہوں۔
امید کی کوئی کرن نظر نہیں آتی۔
اندر سے خالی پن محسوس ہوتا ہے۔
Physical Exhaustion
سر میں اور گردن میں اکثر درد رہتا ہے۔
اکثر متلی یا کراہت کا احساس ہوتا ہے
مجھ میں کسی بھی کام کو لے کر جوش و خروش نہیں پایا جاتا۔
میں اکثر اور بار بار بیمار ہوتا / ہوتی ہوں۔
اکثر معدہ خراب رہتا ہے۔
اکثر جوڑوں میں درد رہتا ہے۔
Perception Incapability
مجھے اپنا کام غیر تسلی بخش لگتا ہے۔
مجھے لوگوں سے ملنا جاننا پسند نہیں۔
مجھے لگتا ہے کہ میں کوئی بھی کام ٹھیک سے نہیں کر سکتا / سکتی۔
Emotional Exhaustion
مجھے ہر چیز دھوکہ لگتی ہے۔
کسی بھی چیز سے لطف اندوز ہونا بہت مشکل لگتا ہے۔
ایسا لگتا ہے کہ مجھے کسی نے قید کیا ہوا ہے۔
Motivation Deficit
میں کسی بھی چیز کے بارے میں یقین سے کچھ نہیں کہہ سکتا/سکتی۔
اکثر منفی خیالات آتے رہتے ہیں۔

### Scoring

Summative scoring will be used for all the subscales. It will be rated on five point Likert scale.

1. بالکل غیر متفق
2. غیر متفق
3. غیر جانبدار
4. متفق
5. بالکل متفق