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AVALIAÇÃO PSICOLÓGICA

Validity evidence of the work-related quality of working life 2 (WRQOL-2) instrument in Brazilian context

Evidências de validade do instrumento qualidade de vida no trabalho 2 (WRQOL-2) no contexto brasileiro

Evidencia de validez del instrumento calidad de vida en el trabajo (WRQOL-2) en contexto brasileño

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Abstract: This study offered validity evidence for the Work-Related Quality of Life (WRQoL-2) scale in the Brazilian context. A sample of 209 economically active Brazilian workers was analyzed. Confirmatory factor analysis confirmed the seven-factor structure [Control at Work (CAW), Employee Engagement (EEN), General Well-Being (GWB), Home-Work Interface (HWI), Job Career Satisfaction (JCS), Stress at Work (SAW), and Working Conditions (WCS)], while high internal consistency values indicated reliability. Significant correlations with the Battery for Assessing Mental Health – Pandemic Version (BASM-P) underscored criterion validity, linking lower work-related quality of life to higher mental health distress. Findings support WRQoL-2's use in assessing and improving workplace conditions in a Brazilian workers' sample.

Keywords: Working Conditions; Psychometrics; Ergonomics.

Resumo: Este estudo ofereceu evidências de validade da escala de Qualidade de Vida no Trabalho (WRQoL-2) no contexto brasileiro. Uma amostra de 209 trabalhadores brasileiros economicamente ativos foi analisada. A análise fatorial confirmatória confirmou a estrutura de sete fatores [Controle no Trabalho (CAW), Engajamento dos Empregados (EEN), Bem-Estar Geral (GWB), Interface Trabalho-Casa (HWI), Satisfação na Carreira (JCS), Estresse no Trabalho (SAW) e Condições de Trabalho (WCS)], enquanto altos valores de consistência interna indicaram confiabilidade. Correlações significativas com a Bateria de Avaliação da Saúde Mental – Versão Pandemia (BASM-P) destacaram a validade de critério, ligando menor qualidade de vida no trabalho a maior sofrimento mental. Os achados apoiam o uso do WRQoL-2 na avaliação e melhoria das condições de trabalho em uma amostra de trabalhadores brasileiros.

Palavras-chave: Condições de Trabalho; Psicometria; Ergonomia.

Resumen: Este estudio ofrecido evidencias de validez de la escala de Calidad de Vida Laboral (WRQoL-2) en el contexto brasileño. Se analizó una muestra de 209 trabajadores brasileños económicamente activos. El análisis factorial confirmatorio confirmó la estructura de siete factores [Control en el Trabajo (CAW), Compromiso de los Empleados (EEN), Bienestar General (GWB), Interfaz Trabajo-Hogar (HWI), Satisfacción en la Carrera (JCS), Estrés en el Trabajo (SAW) y Condiciones Laborales (WCS)], mientras que los altos valores de consistencia interna indicaron fiabilidad. Las correlaciones significativas con la Batería de Evaluación de Salud Mental – Versión Pandemia (BASM-P) subrayaron la validez de criterio, vinculando una menor calidad de vida laboral con una mayor angustia mental. Los hallazgos apoyan el uso del WRQoL-2 para evaluar y mejorar las condiciones laborales en una muestra de trabajadores brasileños.

Palabras clave: Condiciones de Trabajo; Psicometría; Ergonomía.

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Work Quality of Life (WQL) is essential to employee well-being, productivity, and organizational effectiveness (Duyan et al., 2013; Garzaro et al., 2020; Sezer et al., 2024). Understanding and improving the quality of working life has gained considerable attention in occupational health and organizational psychology due to its benefits for workers mental health and well-being (Antunes et al., 2023; Veiga & Cortez, 2020). For this focus to be practical, it is essential to develop adequate strategies for diagnosis and measurement, ensuring that interventions are both targeted and impactful (Silarova et al., 2021; Van Laar et al., 2007).

Work-Related Quality of Life (WRQoL) is a multidimensional construct that plays a crucial role across various professions (Levine et al., 1984). By understanding and enhancing WRQoL, organisations can create a more supportive work environment, improve employee retention, reduce stress, and boost productivity (McFadden et al., 2021; Li et al., 2022). These factors are essential for both the success of the organisation and the satisfaction and effectiveness of its workforce (Silarova et al., 2021; Van Laar et al., 2007).Work-Related Quality of Life (WRQoL) represented a significant advancement in broadly assessing the quality of working life, providing a comprehensive evaluation of various factors impacting stress at work, job satisfaction and general employee well-being (Edwards et al., 2009; Fontinha et al., 2018). The original WRQoL scale, often referred to as WRQoL-1 (Easton & Van Laar, 2013), provided valuable insights; the need for a more refined and comprehensive tool prompted the development of WRQoL-2. The Work-Related Quality of Working Life (WRQoL-2) scale is a widely used to measure multiple aspects of employees' work-related quality of life (Easton & Van Laar, 2018).

Work-Related Quality of Life (WRQoL) represented a significant advancement in broadly assessing the quality of working life, providing a comprehensive evaluation of various factors impacting stress at work, job satisfaction and general employee well-being (Edwards et al., 2009; Fontinha et al., 2018). The original WRQoL scale, often referred to as WRQoL-1 (Easton & Van Laar, 2013), provided valuable insights; the need for a more refined and comprehensive tool prompted the development of WRQoL-2. The Work-Related Quality of Working Life (WRQoL-2) scale is a widely used to measure multiple aspects of employees' work-related quality of life (Easton & Van Laar, 2018).

The WRQoL-2 measure is an updated version of the original WRQoL, incorporating improvements based on feedback and research. While the first one covered broad aspects of quality of working life with general items and less refined psychometric validation, WRQoL-2 offers a more focused and detailed assessment (Easton & Van Laar, 2018). It includes revised factors and items that better capture work-related dimensions, such as work-life balance and job autonomy, with enhanced reliability and validity. WRQoL-2 is typically more precise, aiming to provide comprehensive insights into work quality with reduced respondent burden (Sakamoto et al., 2024).

The WRQoL-2 measures seven critical dimensions of work-related quality of life. Control at Work (CAW) reflects the extent to which employees feel they have a say in decisions affecting their work and can influence changes in their workplace (Abbasi et al., 2016; 2017). Employee Engagement (EEN) measures employees' commitment and pride towards their organization, including their willingness to recommend their workplace to others (De Jong et al., 2017). General Well-Being (GWB) assesses overall happiness, life satisfaction, and the extent to which employees feel their lives align with their ideal (Nawal et al., 2022). Home-Work Interface (HWI) evaluates the balance between work and personal life, considering how well the organization supports employees in managing their responsibilities outside of work (Van Laar et al., 2007). Job Career Satisfaction (JCS) measures satisfaction with job roles, career opportunities, skill utilization, and recognition received for good performance (Easton et al., 2012). Stress at Work (SAW) indicates the levels of stress and pressure

employees experience in their jobs, including issues related to workload, deadlines, and working hours (Anzola et al., 2022). Working Conditions (WCS) assesses satisfaction with the physical and organizational conditions of the workplace, including safety, resources, and overall work environment (Easton & Van Laar, 2018).

The high psychometric quality of WRQoL measurement model is supported by various empirical validation studies with different samples (Easton et al., 2012; Van Laar et al., 2007); Siralova et al., 2021; Edwards et al., 2009). Focusing on a transcultural study between Brazil and Portugal, the WRQoL-1 exhibited a robust six-factor structure, with the final structure demonstrating good reliability and convergent and discriminant validity, exhibiting invariance across gender and sector (Sinval et al., 2020). The measure also revealed significant associations with organizational performance, although these associations were of low intensity, especially concerning economic performance (Sabino et al., 2024). Furthermore, the instrument factorial structure has offered validity evidence in other countries, such as China (Li et al., 2022). The scale also presents consistent predictive and discriminant validity indexes with work-related variables (De Jong et al., 2017); work-related-attitudes (Wagenaar et al., 2012a; 2012b) validity evidence across different occupational groups (Abbasi et al., 2016; 2017; Edwards et al., 2009; Easton et al., 2012) and convergent validity with variables related to affect at work (Duyan et al., 2013).

The WRQoL highlighted due to its psychometric robustness and reliability, the Work-Related Quality of Life measure is one of the most concise scales for evaluating Quality of Working Life in the literature (Easton & Van Laar, 2018; Van Laar et al., 2007). The robust psychometric properties of the WRQoL-2 make it a valuable tool for researchers and practitioners aiming to assess and improve workplace conditions. However, while it has demonstrated validity evidence in multiple contexts, including Brazil with WRQoL-1 (Sinval et al., 2020), its applicability in Brazil has not yet been thoroughly examined using WRQoL-2. Brazil presents a unique cultural and organizational landscape, making the study of the WRQoL-2 within this context crucial. In Brazil, dynamic economic and social changes significantly influence the work environment. Factors such as financial instability, labour market fluctuations, and cultural diversity contribute to the complexity of work-related experiences in Brazil (Antunes et al., 2023).

Therefore, ensuring that instruments like the WRQoL-2 are culturally relevant and psychometrically fit in this context is imperative (Veiga & Cortez, 2020). Previous studies have highlighted the importance of cultural adaptation and validity evidence generation of psychological instruments to maintain their reliability and validity across different populations (Cortez, 2019; Silarova et al., 2021). Understanding the quality of working life in Brazil is academically significant and has practical implications (Garzaro et al., 2020; Abbasi et al., 2016). Organizations can use the WRQoL-2 to identify areas needing improvement, plan interventions, and monitor work-related quality of life changes over time. It can lead to more targeted strategies to enhance employee well-being, satisfaction, and productivity, ultimately contributing to organizational success (Sinval et al., 2020; Sabino et al., 2024).

This study employed a comprehensive approach to evidence generation for the WRQoL-2 in Brazil, including confirmatory factor analysis (CFA) to examine its factorial structure and an internal consistency analysis to assess its reliability. Additionally, the study explored the criterion validity of the WRQoL-2 by examining its relationship with the Battery for Assessing Mental Health – Pandemic Version (BASM-P), a tool designed to measure the negative psychological impact of the COVID-19 pandemic on mental health (Cortez et al., 2022). By integrating these methodologies, the study aimed to provide evidence for its internal structure, internal consistency and criteria validity of the WRQoL-2 in a sample of Brazilian workers.

Method

This is a quantitative, cross-sectional study based on self-report data collected online. The research design aimed to investigate validity evidence of the Work-Related Quality of Life Scale – Second Version (WRQoL-2) in a sample of economically active Brazilian workers, using standardized instruments and statistical analyses for psychometric assessment.

Participants

The study included 209 economically active workers (at least 6 months on the current job activity) recruited based on self-reported personal and working records. The average age of participants was 37.1 years (SD = 13.0), ranging from 18 to 68 years. The sample consisted of 48 non-white Brazilians and 161 white Brazilian participants. Most participants were women, with 154 women and 55 men. Regarding educational attainment, 26 participants had not graduated, while 183 had obtained a degree. Concerning to relevant work-related experience during data collection, 52 of the participants described wage reduction during the pandemic, 157 participants did not experience a wage reduction.

Instruments

Work-Related Quality of Life Scale (WRQoL-2): The WRQoL-2 is a self-report tool designed to measure employees' quality of working life through 32 items. The scale assesses seven factors that contribute to an individual's quality of working life: Control at Work (CAW), Employee Engagement (EEN), General Well-Being (GWB), Home-Work Interface (HWI), Job Career Satisfaction (JCS), Stress at Work (SAW), and Working Conditions (WCS). Multiple items measure each dimension, and the responses are recorded on a five-point Likert scale ranging from '1 = Strongly Disagree' to '5 = Strongly Agree'. Higher scores indicate a better-perceived quality of working life. The WRQoL-2 is used widely by individuals, organizations, and researchers to assess and understand the quality of working life across various sectors. It provides critical information that can be used for planning interventions, monitoring workforce experience, and evaluating the impact of organizational changes. The scale has been translated into multiple languages and used globally, making it suitable for diverse populations. The content validity of the WRQoL-2 was established through comprehensive literature reviews and expert panel evaluations, ensuring the relevance and clarity of the items. The theoretical background encompasses the main approaches to quality of working life, integrating aspects of job satisfaction, life satisfaction, and general well-being. The WRQoL-2 can be administered online and in person, providing flexibility in data collection methods. This instrument is valuable for identifying areas of strength and concern within the work environment and facilitating targeted interventions to enhance employees' overall well-being and productivity. A detailed user manual is available, offering guidance on the scale's administration, scoring, and interpretation, making it accessible for both clinical and research applications (McFadden et al., 2021; Easton & Van Laar, 2018).

Battery for Assessing Mental Health – Pandemic Version (BASM-P): The BASM-P is a self-report tool comprising 30 items designed to assess the negative psychological impact of the COVID-19 pandemic on individuals' mental health. It evaluates ten factors: phobia, stress, anxiety, perception of vulnerability to illness, fear, distress, obsessive thoughts, traumatic grief, grief from job loss, and maladaptive coping. Each factor is measured by three items, resulting in a score that indicates the level of mental health impact in that area. The overall score reflects general mental health distress during the pandemic. Responses are recorded on a five-point Likert scale ranging from '1 = Never' to '5 = Always'. Content validity for the BASM-P was confirmed by a panel of experts who reviewed the items for relevance and clarity. A semantic analysis with the target population ensured the items were understandable. The internal structure validity

was verified through factor analysis, showing a satisfactory fit. Confirmatory factor analysis identified a model with ten specific factors and a second-order general factor, demonstrating strong fit indices ($\chi 2(35) = 9.119$, $p < .001$). Additional fit indices were as follows: RMSEA = .087 (90% CI [.065, .109]), SRMR = .044, TLI = .916, CFI = .935, and BIC = -96.863). Reliability was supported by high internal consistency across all factors, with Cronbach's Alpha and McDonald's Omega values indicating robust reliability (= .85; = .87). The BASM-P is suitable for both clinical and research applications, providing valuable insights into specific areas of distress to facilitate targeted interventions and enhance understanding of the psychological impacts of the pandemic. It can be administered online or in person and is appropriate for diverse populations. A specific manual is available for public health intervention (Cortez et al., 2022).

Sociodemographic Instrument: The self-report instrument to collect the participants' sociodemographic characteristics was assessed using a structured questionnaire. Participants reported their age, identified their race/ethnicity, and indicated their gender. They also provided information on their highest level of education and specified whether they experienced a wage reduction during the pandemic. Additionally, participants were asked to state the duration of their employment in their current job activity, ensuring a minimum of six months as study inclusion criteria. This comprehensive data collection method facilitated a thorough analysis of the sociodemographic factors influencing the study.

Procedures

The study adhered to ethical standards as approved by the Brazilian Ethics Committee. All participants provided informed consent before participation. The study was registered under the number CAAE: 37798820.8.0000.5508. Ethical considerations ensured participant confidentiality and voluntary participation throughout the data collection process. Data were collected using an online survey administered via SurveyMonkey. Participants self-reported their responses through a structured questionnaire. The survey was distributed using a snowball sampling method, primarily targeting public groups within organizations on social networks. This approach facilitated the recruitment of a diverse sample of economically active workers who responded the instrument for 20 to 30 minutes.

Data Analysis

Data was analysed using several statistical methods to examine the variables' relationships and to assess the instruments' reliability and validity. First, descriptive statistics were computed for all sociodemographic variables to provide an overview of the sample characteristics. The mean, standard deviation, and range were calculated for continuous variables such as age. At the same time, frequencies and percentages were reported for categorical variables like gender, race/ethnicity, educational attainment, and work experience during the pandemic.

Confirmatory factor analysis (CFA) was conducted to verify the factorial structure of the WRQoL-2, examining fit indices such as the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). These indices provided insights into the model fit and the underlying construct´s validity of the scale. For the Work-Related Quality of Life Scale (WRQoL-2), internal consistency was assessed using Cronbach's alpha and McDonald's omega to determine the reliability of each of the seven factors as well as the overall scale.

Pearson's correlation coefficients were calculated to explore the relationships between the WRQoL-2 factors and the Battery for Assessing Mental Health – Pandemic Version (BASM-P) scores. These correlations evaluated the convergent and criterion validity of the WRQoL-2 by examining how its factors corresponded with other established measures of work-related quality of life and mental health distress during the pandemic. The data analysis procedures

were conducted in Jasp version 0.18.3.

Results

The sample size for the confirmatory factor analysis (CFA) was deemed adequate, given the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was .94, indicating a high degree of common variance among the items. Additionally, Bartlett's test of sphericity was significant, $\chi^2(496) = 5937.42$, $p < .01$, suggesting that the correlations between items were sufficiently large for CFA. The fit of the hypothesized model was evaluated using multiple fit indices. The chi-square statistic was non-significant, $\chi^2(427) = 403.31$, $p = .78$, indicating a good fit between the model and the observed data. The Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) were both .99, exceeding the recommended threshold of .95. Similarly, the Normed Fit Index (NFI) and Goodness of Fit Index (GFI) were both .98, both indicating an excellent fit.

The Standardized Root Mean Square Residual (SRMR) was .06, within the acceptable range of ≤ .08, suggesting a reasonable approximation of the observed correlation matrix. The Root Mean Square Error of Approximation (RMSEA) was .01, with a 95% confidence interval of .01 to .02 indicating a close fit of the model to the population. Overall, the CFA results suggest that the hypothesized model provides an excellent fit to the data. The CFA confirmed seven distinct factors within the Work-Related Quality of Life (WRQoL-2) measure, as suggested by prior theoretical and empirical transcultural models for the instrument. Table 1 shows factor loadings for each item.

Table 1. *Internal Strucuture for WRQoL-2 with Bootstrapping*

Factor	Item Wording*				95% Confidence Interval	
	Score Ordering	English	Brazilian Portuguese	Factor Loading	Lower	Upper
f1WRQoL-2 Job Career Satisfaction (JCS)	1	I have a clear set of goals and aims to enable me to do my job	Tenho um conjunto de objetivos e metas claras que me permitem fazer meu trabalho	.655	.326	.746
	2	I have the opportunity to use my abilities at work	Tenho a oportunidade de usar minhas habilidades no trabalho	.755	.390	.832
	3	When I have done a good job it is acknowledged by my line manager	Quando eu faço um bom trabalho, sou reconhecido pela chefia imediata	.763	.448	.813
	4	I am encouraged to develop new skills	Sinto-me encorajado a desenvolver novas habilidades	.708	.398	.744
	5	I am satisfied with the career opportunities available for me here	Estou satisfeito com as oportunidades de carreira disponíveis onde trabalho	.774	.456	.823
	6	I am satisfied with the training I receive in order to perform my present job	Estou satisfeito com o treinamento que recebo para desempenhar meu trabalho atual	.818	.478	.853

Factor	Item Wording*				95% Confidence Interval	
	Score Ordering	English	Brazilian Portuguese	Factor Loading	Lower	Upper
f2WRQoL-2 Control at Work (CAW)	7	I feel able to voice opinions and influence changes in my area of work	Sinto-me capaz de dar opiniões e influenciar mudanças em meu ambiente de trabalho	.813	.305	.847
	8	I am involved in decisions that affect me in my own area of work	Eu estou envolvido nas tomadas de decisões que afetam o meu trabalho	.812	.344	.817
	9	I am involved in decisions that directly affect members of the public	Estou envolvido em decisões que afetam os clientes e o público da empresa que trabalho	.710	.305	.748
	10	I have sufficient opportunities to question managers about change at work	Tenho oportunidades suficientes para questionar minha chefia sobre mudanças no trabalho	.812	.334	.801
f3WRQoL-2 General Well Being (GWB)	11	I feel well at the moment	Sinto-me bem neste momento	.844	.455	.911
	12 (Reversed)	Recently, I have been feeling unhappy and depressed	Recentemente, tenho me sentido triste e deprimido	-.602	-.609	-.374
	13	I am satisfied with my life	Estou satisfeito com a minha vida	.801	.446	.899
	14	In most ways my life is close to ideal	Em muitos aspectos minha vida é próxima do ideal	.838	.462	.840
	15	Generally, things work out well for me	Geralmente, as coisas dão certo para mim	.778	.377	.809
	16	Recently, I have been feeling reasonably happy all things considered	De maneira geral, tenho me sentido feliz com as coisas que me aconteceram até aqui na minha vida e no trabalho	.842	.449	.844
f4WRQoL-2 Home-Work Interface (HWI)	17	My employer provides adequate facilities and flexibility for me to fit work in around my family life	Meu empregador provê instalações adequadas e flexibilidade para eu equilibrar minha vida entre família e trabalho	.826	.202	.850
	18	My current working hours / patterns suit my personal circumstances	Minha carga horária atual se adequa bem às minhas rotinas de vida pessoal	.775	.287	.808
	19	My line manager actively promotes flexible hours/patterns	Minha chefia imediata possibilita uma jornada de trabalho flexível	.821	.397	.836
	20	I am able to achieve a healthy balance between my work and home life	Sou capaz de equilibrar de forma saudável a vida profissional e pessoal	.660	.146	.699

Factor	Item Wording*				95% Confidence Interval	
	Score Ordering	English	Brazilian Portuguese	Factor Loading	Lower	Upper
f5WRQoL-2 Stress at Work (SAW)	21 (Reversed)	I often feel under pressure at work	Frequentemente sinto-me sob pressão no trabalho	-.670	-.925	-.623
	22 (Reversed)	I often feel excessive levels of stress at work	Eu me sinto muito estressado no trabalho	-.957	-.997	-.943
	23 (Reversed)	I have unachievable deadlines	Tenho prazos impossíveis de serem cumpridos	-.604	-.679	-.519
	24 (Reversed)	I am pressured to work long hours	Sou pressionado a trabalhar por longas horas	-.521	-.634	-.437
f6WRQoL-2 Working Conditions (WCS)	25	My employer provides me with what I need to do my job effectively	Meu empregador me fornece as coisas que preciso para desenvolver meu trabalho	.837	.374	.895
	26	I work in a safe environment	Meu ambiente de trabalho é seguro	.794	.360	.799
	27	The working conditions are satisfactory	As condições de trabalho são satisfatórias	.953	.420	.969
	28	I am happy with the physical environment where I usually work	Eu estou feliz com a infraestrutura do local em que trabalho	.817	.382	.819
f7WRQoL-2 Employee Engagement (EEN)	29	The organisation communicates well with its employees	A empresa que trabalho possui uma comunicação clara com os funcionários	.893	.313	.938
	30	I am proud to tell others that I am part of this organisation	Sinto orgulho em contar para as outras pessoas que faço parte da empresa que trabalho	.838	.301	.843
	31	I would recommend this organisation as a good one to work for	Eu recomendaria esta empresa como um bom local para se trabalhar	.893	.336	.894

* *Note*. This study focuses on the evidence supporting the Brazilian Portuguese item wording. However, we recommend future studies to test the instrument in other languages for those interested in the transcultural adaptation of WRQoL-2. Licensing is under ©2024 QoWL. For more information, visit: https://www.qowl.co.uk.

The internal consistency of each factor in the WRQoL-2 instrument was evaluated using the coefficients omega (ω) and alpha (α), providing evidence of the reliability of the measures. For Factor 1, the coefficient ω was .883 and was also .883, indicating high internal consistency and that the items within this factor reliably measure the same underlying construct. Factor 2 demonstrated similar reliability, with ω = .864 and α = .865. Factor 3, its's internal consistency was good, with coefficient ω = .821. However, the coefficient α was slightly lower at .656, suggesting that while the items are generally consistent, there is some variability. Factor 4 had a coefficient ω of .861 and coefficient of .852, both indicating high internal consistency.

Factor 5 showed good internal consistency with coefficient ω at .790 and coefficient α at .789. Factor 6 demonstrated the highest internal consistency among the factors, with coefficient ω at .912 and coefficient α at .911. Similarly, Factor 7 showed high internal consistency, with coefficient ω at .906 and coefficient α at .908. The total coefficient ω was .950, and the total coefficient α

was .938, indicating excellent internal consistency across the entire WRQoL-2 instrument. These findings confirm the reliability of the WRQoL-2 in the Brazilian context for assessing work-related quality of life. Next, we explored evidence based on relationships with other variables. The BASM-P (Battery for Assessing Mental Health – Pandemic Version) is a comprehensive battery designed to assess the negative psychological impact of the COVID-19 pandemic on individuals' mental health. Table 2 presents Pearson's correlations between the factors assessed by the BASM-P and several other variables.

Table 2. Pearson's Correlations of WRQoL-2 and BASM-P

Variable	1	2	3	4	5	6	7	8	9
1. f1WRQoL-2 Job Career Satisfaction (JCS)	—								
2. f2WRQoL-2 Control at Work (CAW)	.846***	—							
3. f3WRQoL-2 General Well Being (GWB)	.819***	.704***	—						
4. f4WRQoL-2 Home-Work Interface (HWI)	.760***	.694***	.710***	—					
5. f5WRQoL-2 Stress at Work (SAW)	-.288***	-.203**	-.382***	-.427***	—				
6. f6WRQoL-2 Working Conditions (WCS)	.760***	.669***	.629***	.803***	-.326***	—			
7. f7WRQoL-2 Employee Engagement (EEN)	.780***	.738***	.646***	.766***	-.326***	.816***	—		
8. General Factor – WRQoL-2	.927***	.850***	.871***	.888***	-.486***	.860***	.868***	—	
9. BASM-P	-.423***	-.351***	-.511***	-.413***	.450***	-.335***	-.336***	-.492***	—

Note. ** p < .01; *** p < .001.

The strong positive correlations among the WRQoL-2 variables (e.g., F1 WRQoL-2, F2 WRQoL-2, F3 WRQoL-2, F4 WRQoL-2, F6 WRQoL-2, F7 WRQoL-2) and fgWRQoL-2 indicate that these measures are consistently assessing related constructs, as expected, including a negative correlation with the F5 WRQoL-2 due to its reverse content of stressors. This supports the convergent validity of the WRQoL-2 measures, demonstrating that they effectively capture related dimensions of the same underlying construct. The significant negative correlations between the WRQoL-2 factor and the BASM-P indicate that higher scores on the BASM-P (reflecting more significant mental health distress due to the pandemic) are associated with lower scores on the WRQoL-2 variables. This pattern supports the criterion validity of the WRQoL-2 measures, as they are inversely related to a previously established measure of mental health distress.

Discussion

We aimed to provide evidence for the internal structure, internal consistency, and criterion validity of the WRQoL-2 in a sample of Brazilian workers. The findings from this study provide robust support for the scale's validity and reliability in the Brazilian context. These results are compatible with previous research based on the Work-Related Quality of Life model (Sinval et al., 2020; Sabino et al., 2024). Confirmatory factor analysis (CFA) confirmed the presence of seven distinct factors proposed in the WRQoL-2. This demonstrates that the scale's factor structure aligns with previous studies conducted in different cultural settings (Easton & Van Laar, 2018; Fontinha et al., 2018). High internal consistency values across all factors further highlight the re-

liability of the WRQoL-2 for assessing the quality of working life among Brazilian workers.

The significant correlations between the WRQoL-2 dimensions and the Battery for Assessing Mental Health – Pandemic Version provide additional support for criterion validity. Lower work-related quality of life was associated with higher mental health distress, corroborating existing evidence on the impact of workplace conditions on mental health (McFadden et al., 2021; WHO, 2022). The CFA results confirmed the presence of the seven distinct factors originally proposed by the WRQoL-2: Control at Work (CAW), Employee Engagement (EEN), General Well-Being (GWB), Home-Work Interface (HWI), Job Career Satisfaction (JCS), Stress at Work (SAW), and Working Conditions (WCS).

Control at Work (CAW) reflects the degree to which employees feel they have a say in decisions affecting their work and can influence changes in their workplace. This factor is critical for understanding employee autonomy and involvement in decision-making processes (Easton & Van Laar, 2018). High CAW scores indicate a sense of empowerment among employees, which can enhance job satisfaction and productivity. In contrast, low CAW scores identify areas where management can improve communication and participatory practices to boost employee morale and engagement (Garzaro et al., 2020).

Employee Engagement (EEN) measures the level of commitment and pride employees feel toward their organization, including their willingness to recommend their workplace to others. High EEN scores suggest strong organizational commitment and advocacy, which can positively impact retention rates and employer branding (Sabino et al., 2024). Conversely, low EEN scores indicate a need for initiatives to enhance employee morale and engagement, such as improved internal communication and recognition programs (Levine et al., 1984).

General Well-Being (GWB) assesses overall happiness, life satisfaction, and the extent employees feel their lives are close to their ideal. This factor is essential for evaluating the holistic well-being of employees. High GWB scores reflect a positive balance between work and personal life, indicating general contentment and good adjustment. Low GWB scores may necessitate implementing wellness programs, mental health support, and initiatives to improve work-life balance (Fontinha et al., 2018; McFadden et al., 2021).

Home-Work Interface (HWI) evaluates the balance between work and personal life, considering how well the organization supports employees in managing their responsibilities outside of work. High HWI scores indicate effective support systems and flexible working conditions that promote employee well-being (Van Laar et al., 2007). Low HWI scores suggest the need for better work-life balance policies and support structures, particularly during times of increased work pressure or changes in work patterns, such as remote work (Sinval et al., 2020).

Job Career Satisfaction (JCS) measures satisfaction with job roles, career opportunities, skill utilization, and recognition received for good performance. High JCS scores reflect effective skill utilization and contentment with career growth, contributing to higher employee retention. Low scores indicate potential dissatisfaction with job roles or career progression opportunities, highlighting the need for job enrichment programs, career development initiatives, and improved recognition systems (Easton & Van Laar, 2018; Levine et al., 1984).

Stress at Work (SAW) indicates the levels of stress and pressure employees experience in their jobs, including issues related to workload, deadlines, and work hours. High SAW scores signal a significant negative impact on employee well-being and productivity. This necessitates interventions such as workload management, stress reduction programs, and support resources to mitigate stress levels (Garzaro et al., 2020). Low SAW scores suggest manageable stress levels, contributing to a healthier work environment (Taha et al., 2024).

Working Conditions (WCS) assesses satisfaction with the physical and organizational

conditions of the workplace, including safety, resources, and overall work environment. High WCS scores reflect satisfactory working conditions that promote employee comfort and productivity. Low scores highlight areas needing improvement, such as workplace safety, resource allocation, and environmental enhancements (Easton & Van Laar, 2018).

The WRQoL-2 also includes a general factor, which represents an overarching measure of work-related quality of life that encapsulates the seven primary dimensions: Control at Work (CAW), Employee Engagement (EEN), General Well-Being (GWB), Home-Work Interface (HWI), Job Career Satisfaction (JCS), Stress at Work (SAW), and Working Conditions (WCS). This general factor provides a comprehensive summary score that reflects the overall quality of working life, integrating various aspects of the work environment and employee experiences (Sinval et al., 2020).

The reliability of the WRQoL-2 was evaluated through the internal consistency analysis, using Cronbach's alpha and McDonald's omega coefficients. High internal consistency values were observed across all seven factors of the WRQoL-2. These coefficients indicate that the items within each factor are highly correlated with one another. This suggests that each set of items reliably measures the same underlying construct. For instance, the factors Control at Work (CAW) and General Well-Being (GWB) showed firm internal consistency, which underscores the reliability of the WRQoL-2 in capturing these dimensions of work-related quality of life. This high internal consistency ensures that the instrument provides stable and consistent results across different samples and settings. It aligns with recognized psychometric standards (Cortez, 2019).

Criterion validity was assessed by examining the correlations between the WRQoL-2 dimensions and the Battery for Assessing Mental Health – Pandemic Version (BASM-P). The significant correlations between the WRQoL-2 factors and the BASM-P scores provide strong evidence for the criterion validity of the WRQoL-2. Specifically, the negative correlations indicate that lower scores on the WRQoL-2 reflect poorer work-related quality of life. These lower scores are associated with higher levels of mental health distress as measured by the BASM-P. This relationship highlights the impact of workplace conditions on employees' mental health, especially during the COVID-19 pandemic (Cortez et al., 2022; Nawal et al., 2022). These findings are consistent with existing literature. They suggest that better work-related quality of life is linked to lower stress levels and better mental health outcomes (Anzola et al., 2022; McFadden et al., 2021). This criterion validity is vital for confirming that the WRQoL-2 accurately reflects the real-world impacts of work-related quality of life on mental health.

Based on the evidence from the study, the WRQoL-2 does not replace other scales that are already widely used to assess working condition but serves as a complementary measure. It has the potential to provide useful information for developing guidelines to enhance the well-being of workers (Garzaro et al., 2020). Researchers can use the WRQoL-2 to study various aspects of work-related quality of life and its impact on outcomes such as job satisfaction, employee engagement, and overall well-being (Veiga & Cortez, 2020).

The demonstrated structure and reliability of the WRQoL-2 make it an excellent tool for conducting cross-cultural studies. It enables researchers to plan, act, and compare work-related quality of life across different work environments and cultural contexts. Furthermore, the detailed analysis provided by the seven dimensions and the general factor allows researchers to delve deeply into work-related quality of life aspects (Easton & Van Laar, 2018). For administrators and practitioners, the WRQoL-2 offers a practical instrument for assessing their organizations' working life quality. By understanding the scores on each dimension, administrators can identify specific areas that require attention. This enables the development of targeted interventions to

enhance employee well-being and productivity. The general factor provides a comprehensive overview, making it easier for managers to communicate the overall quality of working life to stakeholders and track changes over time.

Conclusion

The results confirm that the WRQoL-2 offers valid and reliable evidence for assessing work--related quality of life in the Brazilian context. The high internal consistency values, solid factorial structure, and significant correlations with mental health outcomes highlight the robustness of the WRQoL-2. This positive evaluation indicates that organisations can use the WRQoL-2 scale as a multidimensional and uni-dimensional measure. These findings support the use of WRQoL-2 in both research and practical applications to enhance understanding and improve work-related quality of life. This study contributes to the field of occupational health by offering evidence of the applicability of the WRQoL-2 in the Brazilian context, ensuring its cultural relevance and applicability. The comprehensive validation process, including CFA, internal consistency analysis, and criterion validity assessment, provides strong evidence for the reliability and validity of the WRQoL-2. This validation evidence supports the use of WRQoL-2 in diverse cultural and organizational settings, facilitating global research and practical applications.

The seven factors of the WRQoL-2 also offer actionable insights into human resources and organizational leadership. Low scores in Control at Work call for participatory management practices, expanding employee voice in decision-making. Low Employee Engagement scores may indicate the need to strengthen internal communication, foster team belonging, and improve recognition strategies. General Well-Being results inform broader wellness policies, such as mental health support, flexible scheduling, and organizational climate. A low Home-Work Interface score points to the need for policies that support work-life balance, including family leave, remote work protocols, and caregiving accommodations.

Job Career Satisfaction scores can guide career path planning, internal mobility, skill development, and fair performance appraisal systems. High levels of Stress at Work signal the need to redesign work processes, redistribute workload, and ensure psychological safety. Working Conditions results can direct improvements in physical infrastructure, ergonomics, and access to tools and resources needed to perform tasks effectively. Additionally, the general factor provides a synthetic view of overall work-related quality of life. It serves as a strategic indicator for benchmarking organizational health and aligning HR efforts with long-term goals. Organizations can adopt the WRQoL-2 as a diagnostic tool to prioritize interventions and monitor the impact of HR policies over time. By systematically applying the scale's results, leaders can promote employee well-being, enhance productivity, and reduce turnover, while aligning organizational practices with sustainable and human-centered work models.

One limitation of this study is the reliance on self-reported data, online sampling and a limited sample size, which may be subject to bias. Additionally, the sample was limited to economically active workers, which may not fully represent the broader Brazilian workforce due to the exclusion of informal workers. The sample was composed exclusively of formally employed workers with a minimum of six months in their current job, excluding informal or precarious employment arrangements, which are common in the Brazilian labor market. Furthermore, there was a predominance of participants with higher education levels, which may limit the generalizability of the findings to populations with lower educational attainment or different socioeconomic profiles.

Future studies should aim to include more diverse occupational groups to enhance the external validity and applicability of the scale across different segments of the workforce. In addition, we recommend conducting measurement invariance testing across subgroups (e.g., gender, education level, employment type, and

socioeconomic status) to assess the structural equivalence and robustness of the scale in diverse worker populations. Taken together, such efforts would strengthen the generalizability of findings and support the scale's utility in varied organizational and cultural contexts. The WRQoL-2 provides a reliable and comprehensive tool for assessing work-related quality of life, enabling organizations to identify areas in need of improvement and implement targeted interventions. By improving work-related quality of life, organizations can enhance employee well-being, satisfaction, and productivity, ultimately contributing to organizational success and improving individual level work-related quality of working life.

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