

Review Article in Occupational Health Psychology

Novel measures to assess work-life balance: A systematic review of last 5 years (2018-2023)

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Abstract

Introduction: In the contemporary, fast-paced, and demanding world of work, achieving an effective Work-Life Balance (WLB) has become paramount. This study aimed to conduct a brief overview of measurement tools developed over the last five years (2018-2023) to assess work-life balance.

Methods: The selection of studies was conducted in accordance with the Joanna Briggs Institute (JBI) Critical Appraisal Tool and PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, ensuring the inclusion of high-quality research.

Results: A total of 1,816 records were screened. After the application of inclusion and exclusion criteria, eight studies of 512 were deemed suitable for the current review. All newly developed tools focused on overcoming the limitations of previous instruments, and how to best capture the multidimensional nature of WLB. These novel assessments also offer a theoretical contribution on how to best operate WLB in the clinical or research setting.

Discussion: This review provides a valuable resource by providing an up-to-date overview of measures developed in the last five years to evaluate WLB. It underscores the continued importance of this topic in contemporary society and the ongoing efforts to enhance our understanding of it. It also highlights the need for further research to refine and develop standardized cultural and contextual variations measures. Such measures are essential for fostering a better understanding of WLB in today's diverse and ever-evolving work environments. This review underlines the significance of WLB in the modern world and the importance of continuing research efforts to keep pace with the evolving nature of work.

Take-home message: Work-life balance is increasingly important in modern work environments. The study provides a comprehensive overview of eight recent measures developed in the past five years for assessing WLB. It highlights the need for further research in this area and emphasizes the importance of developing standardized measures sensitive to cultural and contextual factors. This information is valuable for researchers and practitioners seeking to better understand and promote WLB.

Key words: Instruments; occupational health psychology; questionnaires; systematic review; work-life balance; work-family conflict.

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INTRODUCTION

Work and personal life have become more interconnected and blended in the modern era. This integration has led to the need for work-life balance, which refers to how an individual can allocate time and energy to work and non-work roles to satisfy individual needs [1]. Work-life balance (WLB) is becoming an increasingly important issue in today's society, with research showing that individuals who have high levels of work-life balance experience greater job satisfaction [2], lower stress levels [3], and better health outcomes [4]. Poor WLB causes an increase in occupational injury and musculoskeletal pain [5], high burnout levels [6], and low job satisfaction and quality of life [7].

WLB refers to the equilibrium between personal and professional demands, as well as the ability to meet obligations without sacrificing one for the other [8]. WLB is a crucial aspect that extends beyond mere time management. WLB encapsulates the delicate equilibrium between fulfilment in work-related areas and the various facets of life [8]. This equilibrium includes striking a harmonious balance between one's professional aspirations and the stress associated with pursuing these goals [8]. To sustain WLB effectively, an individual requires not only effective coping mechanisms but also proper mentalizing skills. These mentalizing skills empower individuals to accurately assess their personal resources, enabling them to navigate the fulfilment of professional objectives while minimizing stress [9]. In essence, WLB is a nuanced interplay of managing work-related ambitions with a keen understanding of personal well-being.

The importance of achieving a satisfactory WLB has been advocated by numerous studies, highlighting its positive effects on both physical and mental health, job satisfaction, productivity, and organizational performance [9]. The significance of work-life balance has become even more apparent in the wake of technological advancements that enable individuals to work anywhere and anytime, blurring the boundaries

between work and personal life [10]. Hence, work-life balance has emerged as a critical research and policy issue with implications for individuals, families, organizations, and society [11]. In this context, understanding the antecedent, concurrent and consequent correlates of WLB has become an important area of inquiry for scholars, policymakers, and practitioners.

In fact, the concept of WLB has been studied extensively in different research fields, such as organizational psychology, sociology, and business management. Measuring and operationalizing WLB effectively is an essential step in exploring and understanding this specific construct. Defining objective psychometric characteristics for WLB is complex and challenging [12], as the multi-dimensional nature of this concept includes various aspects of an individual's life, including work functioning, family dynamics, the enjoyment of quality leisure time, but also health in general [13]. Several approaches have thus been developed to capture these diverse aspects in respect to WLB. These approaches can be broadly classified into subjective, objective, or hybrid [14].

Subjective measures are self-reported assessments of an individual's WLB. These measures are commonly used in research and practice due to their ease of administration and low cost. However, subjective measures may suffer from social desirability bias, where individuals attempt to provide responses that are perceived as more socially acceptable, or from limited comparability across populations [15].

On the other hand, objective measurements provide reliable and objective data on WLB. Time-based, physiological, and work performance assessments offer concrete insights into individuals' actual behaviour and physiological responses. Objective measurements enable comparisons and benchmarking across individuals and/or organizations, while also validating an external validation of subjective perceptions. However, objective measurements can be costly, complex to implement, and may not capture the full complexity of work-life balance [16]. Objective measurements also may raise privacy and ethical concerns in certain scenarios [17].

Hybrid measures combine subjective and objective approaches to overcome the limitations of each. By integrating subjective perceptions with objective data, hybrid measures offer a more comprehensive assessment [18]. Perceived WLB scales and work-life conflict intensity scales combine subjective perception with objective measures, such as time-based assessments or physiological recordings [19]. These hybrid measures provide a nuanced understanding of work-life balance, considering subjective experiences and objective indicators.

The present review aims to assess the effectiveness of recent tools developed to evaluate WLB. The primary aim was to systematically review these tools from various perspectives, identifying their strengths and limitations. The added value of the present work is to inform both future research and clinical practice, in particular for what concerns study designs, routine WLB assessment, and/or preliminary screening for occupational health.

Previous reviews on the topic have been published, but novel developments (across the last five years 2018-2023) have not been fully described. In fact, a previous review conducted by Chang, McDonald & Burton [20] of 245 work-life balance papers published between 1987 and 2006 found a lack of consistency between the conceptualization of constructs and the measures used. The study suggested conducting well-designed field experiments to establish causal relationships and expanding sampling to include specific groups. Researchers were also encouraged to provide transparent rationales for selecting organizations or group lists when enrolling study participants.

A previous review by Lee et al. [21] examined the construct of WLB in Asia and its associated correlates. It systematically reviewed the existing literature and identified the need for specific instruments tailored to the Asian context. By highlighting research gaps, the study proposed the development of new instruments that capture cultural, economic, and institutional factors influencing WLB in this region.

Alameddine et al. [22] more recently emphasized the significance of measuring WLB in the health sector, particularly in the post-pandemic era, while acknowledging the inadequacy of currently existing tools to cover all dimensions, contexts, and professions for this multi-faceted construct. The study suggested adapting specific tools to each cultural and professional context, while also considering concurrent atypical events like COVID-19. Given these premises, establishing a comprehensive and operative definition of WLB may lead to a better choice of measurement tools within the different research fields, or more effective interventions in the workplace.

METHODS

This review was conducted following the PRISMA guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) [23]. The methodology used for this overview involved a systematic review of articles reporting on the measurement of work-life balance. The psychometric properties and heuristic values of the scales were taken into consideration. The review protocol was registered on Open Science Framework (OSF) on July 4, 2023 with the following reference number: 10.17605/OSF.IO/B3W6V.

Search strategy and selections

A systematic search was conducted for recent peer-reviewed articles published from 2018 up to May 2023, using the following databases: PubMed, EMBASE, and PsycINFO. The following terms have been used: ("work-life balance," "work-life balance AND measures," "work-life balance AND instruments," and "work-life balance AND validation"), which were used in different combinations.

All articles were reviewed based on titles and abstracts by three investigators (A.R., M.G.M., M.Y.), who independently performed data collection to reduce the risk of bias. These researchers read the full-text articles deemed suitable for the study and in case of disagreement on the inclusion and exclusion criteria, the final decision was made by another researcher (F.C.). The inclusion criteria were: (i) studies focused on WLB dimension; (ii) studies focused on constructs and reported the development and validation of work-life balance measurements; (iii) the English language; and (v) published in a peer-reviewed journal. The following exclusion criteria were applied: (i) animal studies or non-human populations; (ii) conference proceedings, reviews, or not original articles; (iii) cross-sectional studies (as the development of psychometric instruments should include test-retest validity estimates).

The list of articles was then refined for relevance, revised, and summarized, with the key themes identified from the summary based on the inclusion/exclusion criteria.

Data extraction and analysis

After full-text selection, the data extraction from the included studies was summarized in a table (Microsoft Excel – Version 2021). Data summarized were considered for the following information: authors, year, and type of publication (e.g., clinical studies, pilot study); characteristics of the participants involved in the study, and purpose of the study. Moreover, the Critical Appraisal tools for use in JBI Systematic Reviews and the Checklist for Systematic Reviews and Research Syntheses of the Joanna Briggs Institute (JBI) Faculty of Health and Medical Sciences at the University of Adelaide, South Australia [24] were used to assess the quality of the studies. The tool evaluates studies based on 11 standard questions. If the answer was affirmative, the question was assigned a score of 1. If the answer was negative, unclear, or not applicable, a score of 0 was assigned. Studies that had scored > 8 as an index of study quality and appropriateness were included in this review.

RESULTS

The search for "work-life balance" AND development produced 638 results in the last five years, with the following distribution: 2018 (N=94); 2019 (N=100); 2020 (N=120); 2021 (N=139); 2022 (N=131); 2023 January-May (N=54) (see Table 1). The search excluded reviews (188 records) and cross-sectional studies using already developed measures, scales or indices (N=316). In particular, "work-life balance" AND adaptation produced 123 results, "work-life balance" AND new measure 69 results, and "work-life balance scale" 8 results.

RESULTS BY YEAR

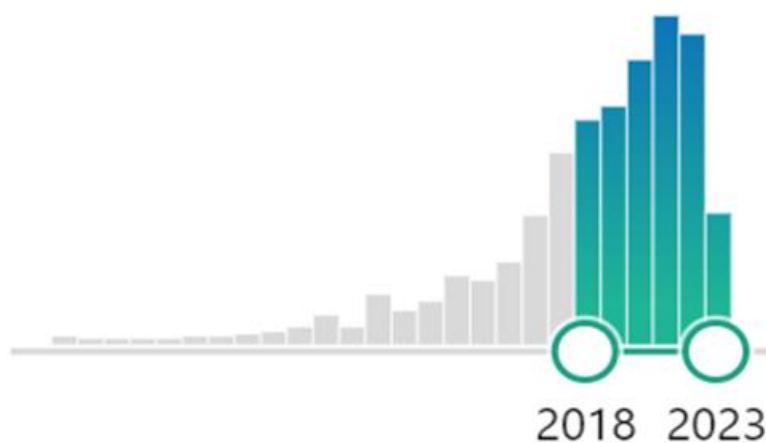


Figure 1. Results by year of PubMed documents addressing "Work-life balance". A significant increase of result was observed in 2018-2023.

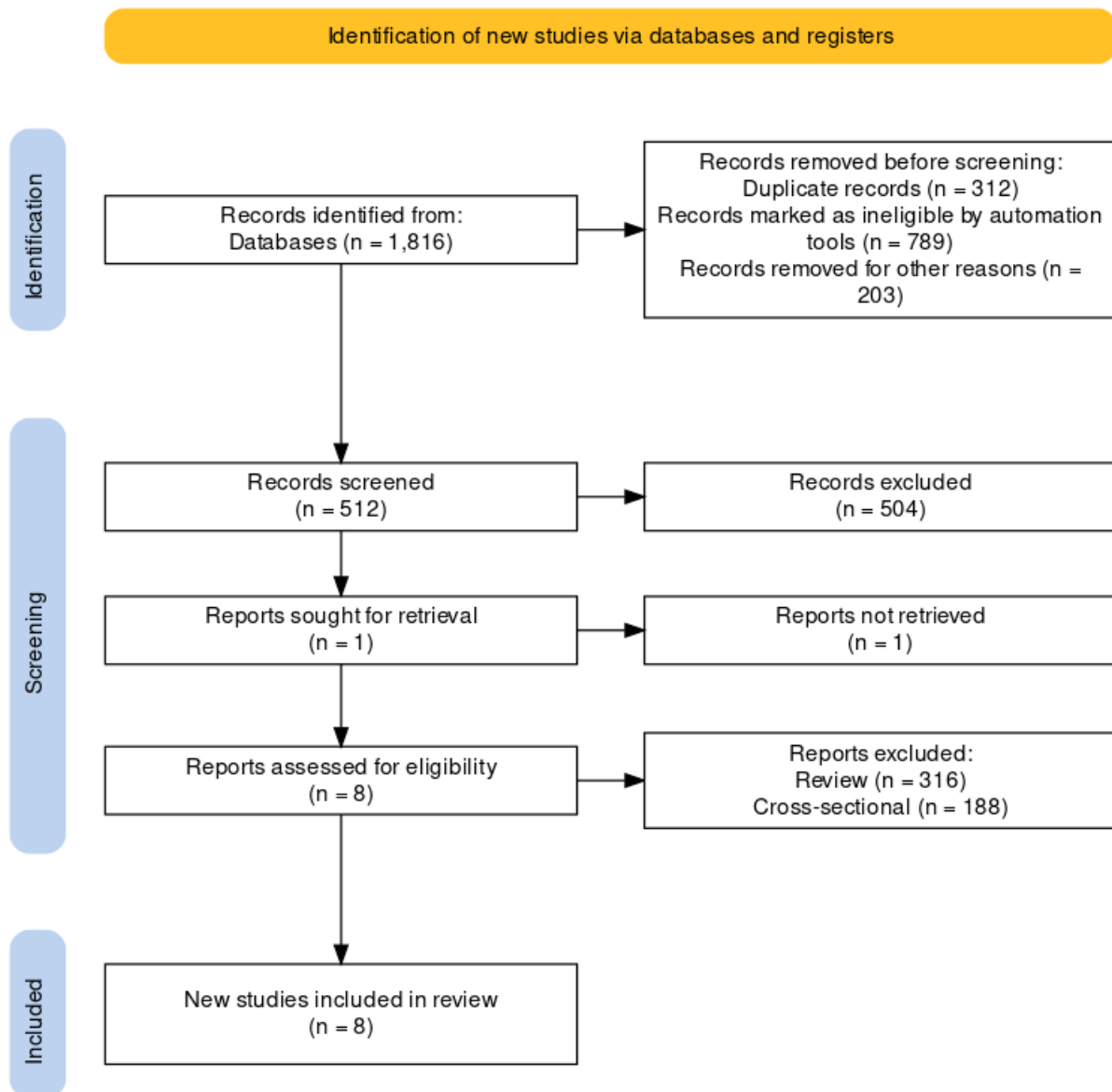


Figure 2. Flowchart for study selection.

Table 1 shows a collection of scales developed and validated to measure work-life balance and related constructs. Each scale provides information on the author and year of development, sample size, number of items, subscales, Cronbach's alpha, reliability, language, and a link to the source. The table includes the following scales: Work-Nonwork Balance Crafting Scale, Nurses' Work-life Balance Scale, Digital Life Balance (DLB) Scale, Work-life conflict Scale, Harmonized COVID-19 Occupational Questionnaires, Work-life balance scale, Work-Family Conflict Scale, and Work-Family Behavioral Role Conflict.

Table 1. Study characteristics of newly developed measures to assess work-life balance ($n = 8$).

Scale	Author and year	Sample	N. items	Subscales	Cronbach's alpha	Reliability	Language
Work-Nonwork Balance Crafting Scale	Kerksieck et al., (2022) [25]	330 participants	16	WNBC-work; WNBC-nonwork; Crafting dimension (a) cognitive/emotional, (b) physical, and (c) relational crafting	N.A.	adequate	English
Nurses' Work-life Balance Scale (NWLBS)	Siratirakul et al., (2022) [26]	598 professional nurses	38	N.A.	0.53-0.94	adequate	Thai
Digital Life Balance (DLB) Scale	Duradoni et al., (2022) [27]	Study 1= 1473 participants Study 2 = 953 participants	4	N.A.	0.74	adequate	Italian
Work-life conflict Scale	DeBaylo & Michel, (2022) [28]	N.A.	N.A.	four-factors: time, behaviour, energy, and emotion	N.A.	adequate	English
Harmonized COVID-19 Occupational Questionnaires.	Schlünssen et al., (2023) [29]	>300 participants from 40 countries	*	*General occupational COVID-19 questionnaire (34 core questions, and 50 additional questions); specific occupational COVID-19 questionnaire (short version 8 questions and 36 additional)	on-going investigation	/	Several languages
Work-life balance scale	Avadhani VD, B Menon (2022) [30]	300	34	Nature of work; Work Flexibility Workload; Compensation; Organizational Support; Personal Life	0.81	adequate	Indian
Work-Family Conflict Scale	Loscalzo et al. (2019) [31]	684	18	Time-based work interference with family; Time-based family interference with work; Strain-based work interference with family; Strain-based family interference with work; Behavioral-based work interference with family; Behavioral-based family interference with work	0.86-0.94	adequate	Italian
Work-Family Behavioral Role Conflict	Clark et al. (2019) [32]	50 study 1 190 study 2	82-item	53-item WIF and a 20-item FIW scale	0.74-0.94	adequate	English

The most commonly used subjective measures of WLB include the following:

1) *Work-life conflict scales*

These scales assess the degree to which work interferes with non-work roles and vice versa. The scales are typically developed based on the work-family conflict model [33-34]. The work-family conflict model suggests that work and family domains can interfere with each other, leading to conflict. The conflict can be of three types: time-based, strain-based, and behaviour-based (see: Michel, Clark & Beiler [33] and Gisler et al. [34]).

2) *Work-life balance scales*

These scales assess the overall balance between work and non-work roles. They typically consist of items that assess an individual's ability to allocate time and energy to work and non-work roles in a manner that satisfies personal needs (for a complete review, see: Rothbard et al. [35]).

3) *Satisfaction with work-life balance scales*

These scales assess an individual's satisfaction with balancing work and non-work roles. They typically consist of items that evaluate an individual's overall satisfaction with the time and energy they devote to work and non-work roles [36].

Objective measures are based on external criteria or data sources that reflect an individual's work-life balance. These measures are less prone to social desirability bias but can be more expensive and time-consuming to collect. The most commonly used objective measures of work-life balance include the following:

1) *Time-based measures*

These measures assess the amount of time an individual spends on work and non-work roles. They typically consist of self-reported time diaries or time-use surveys.

2) *Physiological measures*

These measures assess an individual's physiological response to work and non-work roles. They typically consist of physiological measures, such as heart rate variability, cortisol levels, and sleep quality.

3) *Work performance measures*

These measures assess an individual's work performance, such as productivity, quality, and efficiency. Work performance measures are used as an indicator of work-life balance because individuals with high levels of work-life balance are expected to have.

As previously mentioned, hybrid measures combine subjective and objective measures to comprehensively assess work-life balance. Hybrid measures are therefore useful as potentially overcoming the limitations of subjective and objective measures alone. The most commonly used hybrid measures of work-life balance include:

1) *Perceived work-life balance scales*

These scales assess an individual's subjective perception of work-life balance and objective measures, such as time-based or physiological measures [37].

2) *Work-life conflict intensity scales*

These scales assess the degree of intensity of work-life conflict combined with objective measures, such as work performance or physiological measures [38].

3) *Work-family balance indices*

These indices assess the balance between work and non-work roles, combined with objective measures, such as time-based or physiological measures [39].

DISCUSSION

The present study provides a comprehensive overview of measures developed to assess WLB in the last five years (2018-2023). All recently developed scales included a different operationalization of WLB, and these novel instruments suggest several potential new trends in studying this topic.

One trend involves a greater focus on the impact of digital technologies on WLB, with researchers seeking to understand how people manage their use of computing technology and/or teleworking [40]. Another trend involved understanding the long-term effects of the COVID-19 pandemic on WLB [41] or work-family dynamics [42-54].

Overall, the current findings suggest that researchers and practitioners may use newly developed instruments to measure different dimensions of WLB and evaluate the effectiveness of interventions to improve it. There is likely to be continued interest in developing new scales and measures to capture different dimensions of work-life balance and in using these measures to advance our understanding of this critical topic. The current measurement and operationalization of WLB nonetheless suffers from a number of limitations. One of the main criticisms in fact could be that WLB is differently defined across studies, and thus a lack of standardization across measures can be observed. Different studies use different measures, impeding the synthesis of overall trends through standard techniques, such as meta-analytic evaluations of pooled effect sizes. This issue could be addressed by developing a standardized definition of WLB, allowing for an effective and reliable operationalization of this construct across studies and application contexts.

A further critique directed at the newly developed instruments for the assessment of WLB pertains to their apparent disregard for the influence of cultural and contextual factors. The perception and significance attributed to WLB can diverge significantly across diverse cultures and situational contexts. For instance, in certain cultures, the workplace may be held in considerably higher regard than leisure activities, reflecting a deep-seated work ethic and commitment. Conversely, in other cultural settings, the pursuit of leisure and personal time may be valued more, signifying a contrasting set of priorities. These marked cultural differences highlight the need to develop measurement tools that are acutely attuned to the cultural and contextual variables. This emphasis on cultural and contextual sensitivity is imperative to ensure WLB measures remain relevant and effective in diverse settings. Failing to account for these influential factors can result in skewed or inaccurate assessments, hampering the ability to gain meaningful insights from the data collected. Thus, an essential objective in this field is creating and implementing measurement tools that exhibit heightened cultural and contextual sensitivity.

Furthermore, it is essential to note that, in some instances, the reliability of newly developed instruments was not reported. The absence of such crucial information considerably affects the interpretability and utility of these measures, as it impedes to correctly estimate their consistency and accuracy. This suggests the importance of reliable and valid scale development, testing, and reporting to enhance the overall quality of work-life balance measurement instruments.

CONCLUSION

Measuring WLB is a complex and challenging task, but it is essential for studying and understanding this construct in the clinical or research setting. The most commonly used instruments to evaluate WLB include subjective, objective, and hybrid criteria, but newly developed tools seem to mainly rely on subjective assessments. While subjective, self-reported measures may suffer from a number of limitations, they also provide valuable insights into the nature of WLB in the naturalistic setting. Future research should aim to develop standardized WLB measures sensitive to cultural and contextual factors. Developing such culturally and contextually sensitive measurement tools is essential in advancing our understanding of work-life balance dynamics. Moreover, these tools play significant roles in creating targeted interventions to enhance WLB on both individual and organizational levels. Consequently, these culturally sensitive tools could refine the theoretical understanding of antecedent, concurrent and consequent correlates of WLB, potentially informing future policy makers on possible strategies to improve WLB, benefiting both individuals and organizations.

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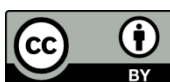
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