

A healthy work-life balance is a potential pathway to good mental health: Longitudinal evidence from Australian workers

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Abstract

Background

Work–life balance is increasingly recognised as an important determinant of workers’ mental health, yet contemporary longitudinal evidence remains limited. This study examined whether maintaining a healthy work–life balance is associated with good mental health among Australian workers aged 17–67.

Methods

We analysed 132,216 person-year observations from 20,530 employed individuals from 14 waves (2011–2024) of nationally representative longitudinal data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. Work–life balance was measured using a four-item work–family balance scale (range: 1–7) and a single-item work–life balance satisfaction measure (range: 0–10), both operationalised as binary indicators. Mental health was assessed using the five-item Mental Health Inventory (MHI-5; range 0–100) with good mental health defined primarily as $\text{MHI-5} \geq 76$ and secondarily as $\text{MHI-5} \geq 60$ in sensitivity analyses. Random-effects logistic regression models were fitted, with analyses stratified by weekly working hours, employment contract types, supervisory responsibilities, age groups and genders.

Results

Healthy work–life balance was strongly associated with good mental health. Workers experiencing a healthy work–life balance had more than twice the odds of reporting good mental health than those experiencing poor work–life balance (aOR = 2.05, 95% CI: 1.91, 2.20). Similar findings were observed for the sensitivity analysis (aOR = 2.19, 95% CI: 2.00, 2.39). High work–life balance satisfaction was also positively associated with good mental health in both the primary analysis ($\text{MHI-5} \geq 76$: aOR = 1.15, 95% CI: 1.11, 1.20) and the sensitivity analysis ($\text{MHI-5} \geq 60$: aOR = 1.12, 95% CI: 1.07, 1.18). The positive association between work–life balance and good mental health remained consistent across population subgroups. During the study period, the prevalence of good mental health declined from 61.9% in 2011 to 50.6% in 2024.

Conclusions

Maintaining a healthy work–life balance is an important pathway for good mental health among Australian workers. Policies promoting flexible working arrangements, manageable workloads, and supportive workplace environments may contribute to improving workforce mental health and wellbeing.

Keywords: Australian workers, HILDA Survey, Longitudinal analysis, Mental health, Work–life balance, Work-life balance satisfaction.

Highlights

1. Healthy work-life balance was associated with over twice the odds of good mental health.
2. High work-life balance satisfaction was independently associated with good mental health.
3. Good mental health among Australian workers declined between 2011 and 2024.
4. Associations remained robust across weekly working hours, employment contract types, supervisory responsibilities, age groups and genders.
5. Workplace flexibility and supportive work environments may improve workers' mental health.

1. Introduction

The old saying “*work to live, not live to work*” has gained renewed relevance as modern societies increasingly prioritise a balance between professional and personal life. Within this shift, work–life balance has emerged as a key determinant of mental health. Work-life balance is commonly defined as an individual’s ability to manage and integrate competing work and personal demands in ways that minimise conflict (Berglund et al., 2021). Work-life balance satisfaction further reflects individuals’ subjective evaluations of how effectively they navigate these domains (Ciccarelli et al., 2025). Importantly, work-life balance is dynamic rather than fixed, evolving across life stages and shifting responsibilities. As labour markets and organisational cultures change, flexible work arrangements, adaptable schedules, and supportive environments have become essential for sustaining a healthy work-life balance (Hashim & Ullah, 2016). These developments reflect broader transformations in workforce expectations, highlighting the need to understand how work-life balance influences workers’ mental health, particularly in contexts characterised by rapid economic, social, and technological change.

Mental health disorders are a major public health concern, contributing substantially to global morbidity, disability, and economic burden. Worldwide, mental disorders account for an estimated 7% of the total global disease burden and 19% of all years lived with disability, generating annual economic costs exceeding US\$5 trillion (Arias et al., 2022; GBD 2017 Disease and Injury Incidence and Prevalence Collaborators, 2018; Rehm & Shield, 2019). In Australia, approximately 43% of individuals aged 15–85 experience a mental illness during their lifetime, and national expenditure on mental health services has risen sharply, from AUD\$11.8 billion in 2018–2019 to AUD\$13.2 billion in 2022–2023 (Australian Institute of Health and Welfare, 2025). Mental health is integral to overall wellbeing and essential for functioning across work and personal life domains (Heinz et al., 2025; Tseliou & Ashfield-Watt, 2022). Working-age adults face particular vulnerability due to psychosocial pressures arising from work and personal life responsibilities (Marti et al., 2022; Teychenne et al., 2026; van der Molen et al., 2020).

Although no universal framework governs work–life balance, a range of international standards and policy mechanisms collectively promote it. The International Labour Organization (ILO) sets foundational guidance through conventions such as the Workers with Family Responsibilities Convention (C156), which emphasises equal opportunity for workers with caregiving duties (ILO, 1981), and the Maternity Protection Convention (C183), which

safeguards parental leave and job security (ILO, 2000). Complementing these, the World Health Organization provides evidence-based guidelines aimed at improving mental health in the workplace and enabling people with mental health conditions to thrive (WHO, 2022). The United Nations situates work-life balance within the Sustainable Development Goals, particularly Goal 8, which promotes decent work and equitable labour conditions (United Nations, 2025). National governments further enact these principles; in Australia, the Fair Work Act 2009 and supporting regulatory bodies establish rights to flexible working arrangements, parental leave entitlements, and controls on excessive working hours (Fair Work Ombudsman, 2025; Safe Work Australia, 2022).

Maintaining a healthy work-life balance is essential for supporting physical health, mental health, and long-term productivity. Balanced integration of work and personal life fosters emotional wellbeing, reduces stress, and mitigates risks of mental health disorders such as anxiety and depression (Verve Editorial Staff, 2025). Work-life balance also enables individuals to engage meaningfully with family, leisure, and social activities, contributing to greater life satisfaction and resilience. However, inadequate balance, often driven by long hours, work overload, and blurred boundaries, can lead to time poverty, burnout, and diminished psychological functioning (Verve Editorial Staff, 2025). Effective strategies to sustain a healthy work-life balance include clear boundary-setting, disciplined time management, prioritising rest, and ensuring that non-work time remains protected. Flexible working arrangements further support balance by allowing employees to align work demands with personal needs (The Guardian, 2025). Organisational policies also play a crucial role; workplaces that model healthy behavioural norms, support flexible scheduling, and prioritise employee wellbeing cultivate more motivated, productive, and psychologically healthy workforces. Despite increasing awareness, many workers continue to struggle with overwork, skipped leave, and reduced personal time, highlighting the importance of continued commitment to work-life balance strategies at both individual and organisational levels (The Guardian, 2025).

Extensive international evidence highlights the importance of a healthy work-life balance for mental health outcomes. Foundational work by Greenhaus et al. (2003) emphasises that healthy work-life balance is essential for quality of life (Greenhaus et al., 2003), while later research shows that poor work-life balance is linked to greater psychological distress and lower wellbeing (Yang et al., 2018). Cross-sectional research using two surveys in Poland found that poor work-life balance was significantly associated with worse mental and physical health in 2003 and 2013, with stronger effects in 2013, reflecting shifts in lifestyle and generational expectations (Borowiec & Drygas, 2022). Studies in South Asia provide further evidence:

work-life balance enhances mental health among nurses in Pakistan through improved psychological capital and job satisfaction (Zhang et al., 2024), while Indian research shows that work-life balance improves psychological wellbeing among IT metro commuters, with occupational stress acting as a partial mediator (Prasad et al., 2025). Across contexts and occupations, global research consistently identifies work-life balance as a significant and modifiable factor influencing mental health, underscoring its importance for policy and practice.

Australian research increasingly recognises the role of healthy work-life balance in shaping workers' mental health and wellbeing. Analyses from the Household, Income and Labour Dynamics in Australia (HILDA) Survey show that while many working parents manage work-life balance effectively, nearly one-third experience substantial conflict driven by long hours, work overload, and insufficient support, which are strongly associated with poorer mental health and reduced life satisfaction (Losoncz & Bortolotto, 2009). Further evidence indicates gendered differences, with casual employment supporting healthy work-life balance and high satisfaction among women, but showing weaker or nonsignificant effects for men (LaB & Wooden, 2025). Other findings show that working mothers report high work-life balance satisfaction when using a mixed combination of paid and unpaid childcare, although affordability and flexibility constraints create barriers (Arpino & Luppi, 2020). Earlier Australian studies (Losoncz, 2011; Pocock et al., 2008) further highlight that work-life balance challenges are diverse and often linked to work-family strain and identified role pressures across segments of the workforce.

Existing research on work-life balance suffers from several important limitations that warrant further investigation. A major methodological issue is the heavy reliance on cross-sectional designs, which restricts the ability to infer longitudinal associations and changes over time (Borowiec & Drygas, 2022; Prasad et al., 2025; Zhang et al., 2024). Additionally, much of the available evidence comes from countries outside Australia (Borowiec & Drygas, 2022; L & Muhammad, 2023; Zhang et al., 2024), limiting its applicability to the Australian workers. Many studies also focus on specialised or narrow populations such as nurses, IT commuters, or specific occupational groups, thereby constraining generalisability to the broader workforce (Borowiec & Drygas, 2022; Prasad et al., 2025; Zhang et al., 2024). Even within the Australian context, several HILDA-based studies target specific subgroups, such as temporary employees (LaB & Wooden, 2025) or working mothers (Arpino & Luppi, 2020; Losoncz & Bortolotto, 2009), rather than examining work-life balance among workers more generally. Furthermore, international evidence highlights the need to reassess the relationship between work-life

balance experiences and mental health using more recent data, given shifting mindsets, lifestyles, and generational renewal (Borowiec & Drygas, 2022). These gaps underscore the need for contemporary longitudinal research that captures evolving patterns of work-life balance and mental health within the general Australian working population. Another notable limitation in the literature is the limited attention given to work-life balance satisfaction, despite evidence suggesting its importance for wellbeing (Arpino & Luppi, 2020; LaB & Wooden, 2025; Ortiz-Bonnin et al., 2022). Thus, examining work-life balance with its satisfaction is essential for a more comprehensive understanding of how work-life balance experiences influence mental health outcomes.

Addressing these gaps requires robust longitudinal, population-based studies capable of identifying longitudinal associations and capturing dynamic changes in work-life experiences. Such evidence is crucial for informing workers, organisational leaders, and policymakers about effective strategies to promote healthy work-life integration and protect mental health. Accordingly, the present study pursues two objectives:

Objective 1: To examine the association between work-life balance (measured using 4 questions) and the mental health of Australian workers.

Objective 2: To examine the association between work-life balance (measured using work-life balance satisfaction) and the mental health of Australian workers.

2. Methodology

2.1 Data source

We conducted a population-based longitudinal study using the Household, Income and Labour Dynamics in Australia (HILDA) Survey. HILDA is a nationally representative longitudinal study of Australian households, conducted by the Melbourne Institute of Applied Economic and Social Research at the University of Melbourne. It uses face-to-face interviews and self-completion questionnaires completed by all household members aged 15 years and older. Commencing in 2001 (with a sample of 13,969 persons from 7,682 households), the HILDA Survey collects data annually on a wide range of topics, including personal, family and work-related events, as well as individuals' psycho-social, economic, demographic and health conditions (Watson & Wooden, 2021). We chose HILDA data for our study because it provides comprehensive information on the primary outcome variable, mental health; the key exposure variable, work-life balance; and other covariates (socio-demographic, work and economic, family, health characteristics) across the waves. Additional resources are available elsewhere for a more extensive reference on how to interpret and navigate HILDA data (Watson, 2021).

2.2 Analytic sample

Our study focuses on the mental health associations of work–life balance among Australian workers. We restricted the sample to employed individuals aged 17 to 67 years, representing the typical working-age population in Australia. This range corresponds to the minimum age for full-time employment (17 years) and the pension eligibility age (67 years) (Ho, 2025; Services Australia, 2026).

Our analysis utilised data from waves 11 to 24 of the HILDA Survey, covering a 14-year period from 2011 to 2024. From wave 11 onward, new households were added to the panel to maintain representativeness of the evolving Australian population, with wave 24 representing the most recent release of the HILDA Survey. A detailed outline of the sample selection process is presented in the Appendix (Table A1). The final analytic sample comprises 132,216 person-year observations from 20,530 unique individuals.

2.3 Dependent variable: Mental health

Our dependent variable is mental health, measured using the MHI-5, a validated five-item scale derived from the Short Form 36 (SF-36) (Butterworth & Crosier, 2004; Yamazaki et al., 2005). The MHI-5 assesses emotional wellbeing over the preceding four weeks, through asking the respondents following five questions: (a) Have you been a very nervous person, (b) Have you felt so down in the dumps that nothing could cheer you up, (c) Have you felt calm and peaceful, (d) Have you felt down, and (e) Have you been a happy person. The five items are rated on a six-point scale (1 = *all of the time* to 6 = *none of the time*), with two positively worded items reverse-coded. Item scores are summed (range: 5–30) and linearly transformed to a 0–100 metric, with higher values indicating good mental health (Yamazaki et al., 2005). Extensive population-based research has demonstrated the predictive, concurrent, construct, and face validity of the MHI-5 (Kelly et al., 2008; Ten Have et al., 2024; Thorsen et al., 2013). A high correlation ($r=.88$) with a relevant measure, mental components summary (MCS), further supports its convergent validity (Kelly et al., 2008). Its internal consistency is well established, with a reported Cronbach's alpha of 0.80 (95% CI: 0.79–0.81) (Ten Have et al., 2024).

In this study, mental health was operationalised as a binary variable, categorising individuals as having poor or good mental health, with poor mental health defined by an MHI-5 score threshold below 76 (primary analysis) and below 60 (sensitivity analysis) (Bubonya et al., 2017; Thorsen et al., 2013).

2.4 Exposure variable: Work-life balance

To comprehensively assess work–life balance, our study employed two measures: a four-item work–family balance scale and a single-item work–life balance satisfaction measure.

2.4.1 Work-life balance

Work-life balance was measured using four negatively framed work-family balance items from the HILDA Survey. Responses were recorded on a 7-point Likert scale, with scores ranging from 1 ("strongly disagree") to 7 ("strongly agree"). Participants were asked to indicate their level of agreement with the following statements: (a) Because of the requirements of my job, I miss out on home or family activities that I would prefer to participate in. (b) Because of the requirements of my job, my family time is less enjoyable and more pressured. (c) Working leaves me with too little time or energy to be the kind of parent I want to be. (d) Working causes me to miss out on some of the rewarding aspects of being a parent. As these items are negatively framed, all responses were reverse-coded so that higher scores reflect healthy work-life balance. The resulting composite score ranges from 1 to 7.

In this study, the mean work-life balance score was 4.25. Based on this distribution, work-life balance was operationalised as a binary variable, distinguishing between poor (≤ 4.25) and healthy (> 4.25) work-life balance. Although data were drawn from waves 11 to 24 of the HILDA Survey, information on work-life balance was not available in waves 18, 20, 22 and 24.

2.4.2 Work-life balance satisfaction

In the HILDA Survey, satisfaction with work-life balance was measured using a single-item metric: "How satisfied are you with the flexibility available to balance work and non-work commitments?" Responses were collected annually on an 11-point scale ranging from 0 ("not at all satisfied") to 10 ("completely satisfied"), with higher scores reflecting greater perceived flexibility in managing personal and professional demands (Wu et al., 2025). Within our sample, the mean satisfaction score was 8.00. This is consistent with previous research, which reported a similar mean score of 7.56 (SD = 2.15) (Wu et al., 2025). Based on our sample's distribution, we dichotomized work-life balance satisfaction into "low to moderate" (≤ 8) and "high" (> 8) categories for subsequent analysis.

This operationalization is further supported by established validation literature. Previous research by Craig and Sawrikar (2008) examined several work-life balance and satisfaction indicators across major Australian surveys, including HILDA, and demonstrated strong alignment between these measures (Craig & Sawrikar, 2008). Additionally, this specific satisfaction item exhibits convergent validity, showing a moderate negative correlation with the work-life conflict scale ($r = -0.37$; LaB & Wooden, 2025). Together, this evidence confirms that the single-item HILDA metric serves as a robust and valid proxy for measuring work-life balance in the current study.

2.5 Control variables

Following existing literature (Keramat, Sarker, et al., 2025; Kirkbride et al., 2024; Kondirolli & Sunder, 2022; Sagar et al., 2026) and guided by theoretical relevance and data availability, a range of demographic, socioeconomic, work and employment, lifestyle, and health characteristics were included as control variables in the analysis. The following socioeconomic and work-related factors were considered: weekly working hours (0-38 and >38), workplace firm size (small, medium and large), type of employment contract (permanent, fixed term, and casual), occupational category (professional, managerial, technical, community, clerical, machinery and labours), supervisory responsibility (yes and no), union or employee association membership (yes and no), entitlement to paid holiday leave (yes and no), entitlement to paid sick leave (yes and no). We consider the following socio-demographic variables: age groups (17-34, 35-49 and 50-67), gender (male and female), current marital status (partnered and unpartnered), highest educational attainment (year 12 and below, certificate III or IV, and undergraduate), equivalised household income (quintile 1 [poorest] to quintile 5 [richest], indigenous status (not of indigenous origin and Aboriginal or Torres Strait Islander origin), remoteness of residence (major cities and regional or remote areas). Smoking status (never smoker, ex-smoker, and current smoker), alcohol consumption status (never drinker, ex-drinker, and current drinker), and physical activity level (less than the recommended level and the recommended level) were included to capture lifestyle factors. Body Mass Index [underweight (less than 18.5), healthy weight (18.5 to 24.9), overweight (25 to 29.9) and obesity (30 or more)], and long-term health condition or disability (yes and no) was included as a health-related factor. The detailed description and measurement of the outcome variable, exposure variables and covariates are mentioned in the appendix Table A2.

2.6 Statistical analysis

Descriptive statistics, including frequencies, percentages, and mean values, were computed to summarise the main exposure and outcome variables and all covariates. To examine the longitudinal association between work–life balance and mental health, we fitted a random-effects logistic regression model, which accounts for the correlation between repeated observations from the same individual. The model is specified as:

$$\text{Logit} [P(Y_{it} = 1)] = \beta_0 + \beta_1 \text{WLB}_{it} + \beta_2 X_{it} + u_i \quad \text{Equation 1}$$

where Y_{it} is the binary mental health outcome for individual i at time t ; $P(Y_{it} = 1)$ denotes the probability of reporting good mental health; WLB_{it} represents work–life balance; X_{it} is a vector of covariates; β_0 is the intercept; β_1 and β_2 are regression coefficients; and u_i is the individual-specific random effect, assumed to follow a normal distribution with mean zero and variance

σ^2_u . Unlike fixed-effects models, random-effects models allow estimation of both time-varying and time-invariant covariates under the assumption that the individual-specific random effects are uncorrelated with the explanatory variables (Allison, 2009). Results are presented as adjusted odds ratios (AORs) with 95% confidence intervals (CIs). Statistical significance was assessed at $p < 0.05$, $p < 0.01$, and $p < 0.001$. All analyses were conducted using Stata version 19 (StataCorp LLC, College Station, TX, USA).

2.7 Robustness check

Checking robustness using a different threshold for the outcome variable is a common practice to verify the validity, stability and magnitude of the main findings. To ensure the robustness of our findings, we conducted a sensitivity analysis using a different mental health score threshold (poor mental health if MHI-5 < 60). We have fitted the same random-effects logistic regression model to verify the magnitude of the results and to identify between-person differences in the association between work-life balance and mental health.

2.8 Heterogeneous effects

While our primary analysis examined the overall associations between work-life balance and mental health, it is also important to assess whether these relationships vary across population subgroups. Evidence on such variation remains limited. To address this gap, we conducted stratified analyses to explore potential heterogeneity in the associations across key demographic and employment-related groups, including weekly working hours, employment contract types, supervisory responsibilities, age categories, and gender, following approaches used in prior studies (Keramat, Comans, et al., 2025; Sagar et al., 2026). For each subgroup, we applied the same random-effects logistic regression model as in our main analysis. This approach allows us to assess whether the strength or direction of the associations differs meaningfully across different groups while accounting for unobserved, time-invariant individual characteristics.

3. Results

3.1 Descriptive statistics

The descriptive statistics illustrated in Table 1 indicated that poor mental health was reported by 43.20% of participants in the pooled sample. The proportion of reporting good mental health (MHI-5 ≥ 76) decreased from 61.9% in 2011 to 50.6% in 2024 (Appendix Figure A1). A similar decline was observed using the more inclusive MHI-5 ≥ 60 threshold, with good mental health decreasing from 85.7% to 77.5% during the same period (Appendix Figure A2).

Regarding the exposure variables, 47.65% of participants experienced poor work-life balance.

The proportion of workers reporting healthy work–life balance remained relatively stable between 2011 and 2017 (approximately 45–46%), increased substantially to 70.3% in 2019, and subsequently declined to 49.6% in 2021 and 50.6% in 2023 (Appendix Figure A3). Additionally, Table 1 showed that 61.37% of respondents reported poor satisfaction with their work–life balance. Similarly, the proportion of reporting high work–life balance satisfaction declined from 61.8% in 2011 to 56.4% in 2024, indicating a gradual deterioration in perceived work–life balance satisfaction over the study period (Appendix Figure A4).

The distribution of covariates presented in Table 1 further reflects a diverse demographic, socioeconomic, work-related, lifestyle, and health profile. Regarding work characteristics, 53.21% of participants worked 0–38 hours per week, 42.69% were employed in medium-sized firms, and 73.98% held permanent contracts. Occupationally, participants were predominantly professionals (26.35%), followed by managerial (14.07%) and clerical roles (13.45%). Nearly half (44.75%) had supervisory responsibilities, while 22.27% were union members. Most participants were entitled to paid holiday leave (79.76%) and paid sick leave (80.06%). The mean overall job satisfaction score was 7.74 (SD = 1.55). Socio-demographically, 38.76% were aged 17–34 years, with a balanced gender distribution (50.07% female), and the majority were unpartnered (64.82%). Around 34.60% had Certificate III or IV qualifications, household income was evenly distributed across quintiles (20%), most participants were non-Indigenous (97.71%), and 69.60% resided in major cities. Lifestyle characteristics showed that 58.00% had never smoked, 86.72% were current drinkers, and 65.55% engaged in less than the recommended level of physical activity. In terms of health status, 35.74% were overweight, 24.94% were obese, and 17.58% reported having a long-term condition or disability.

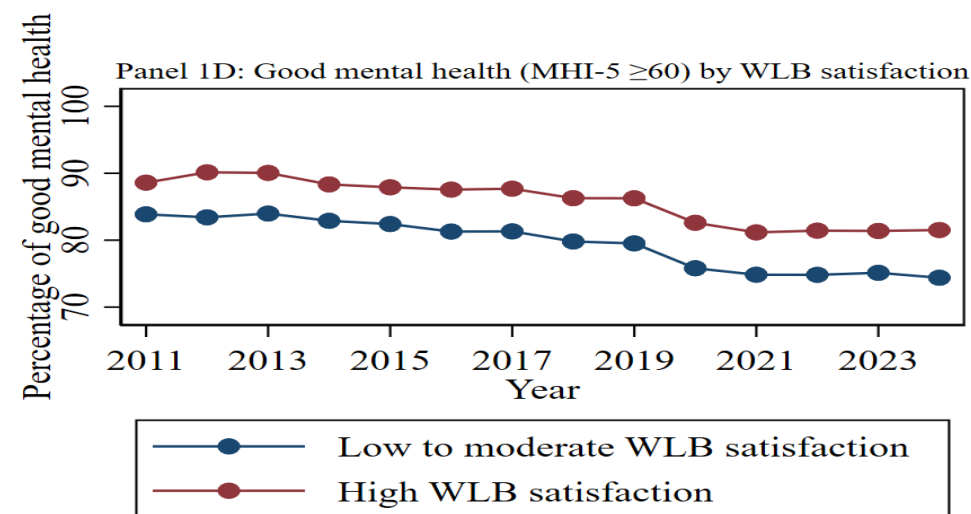
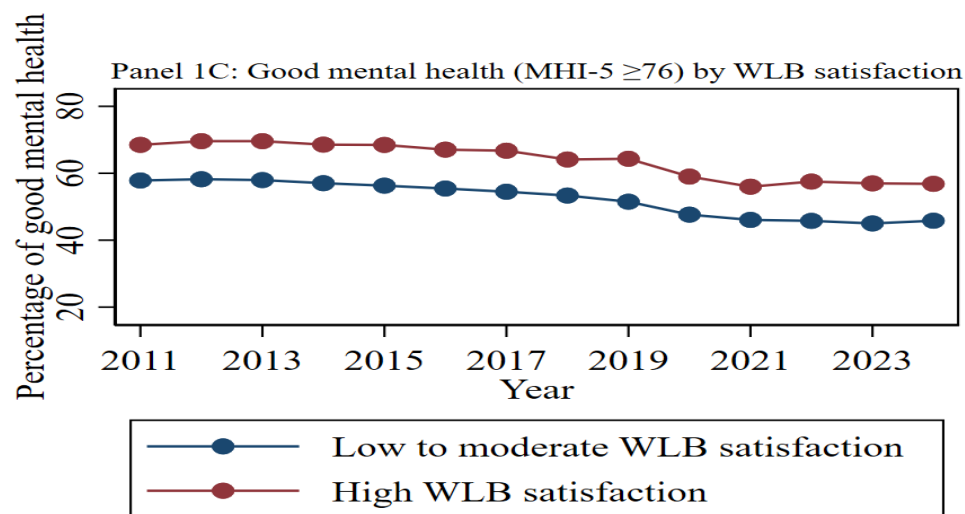
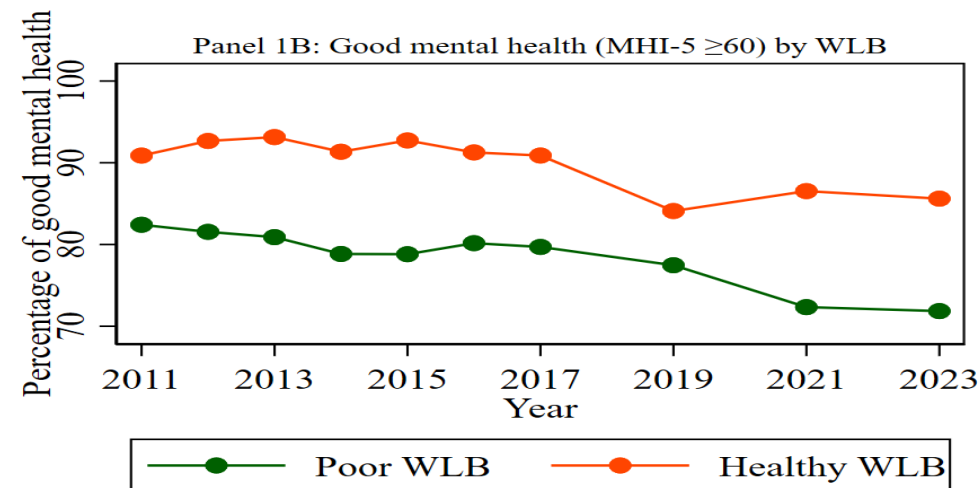
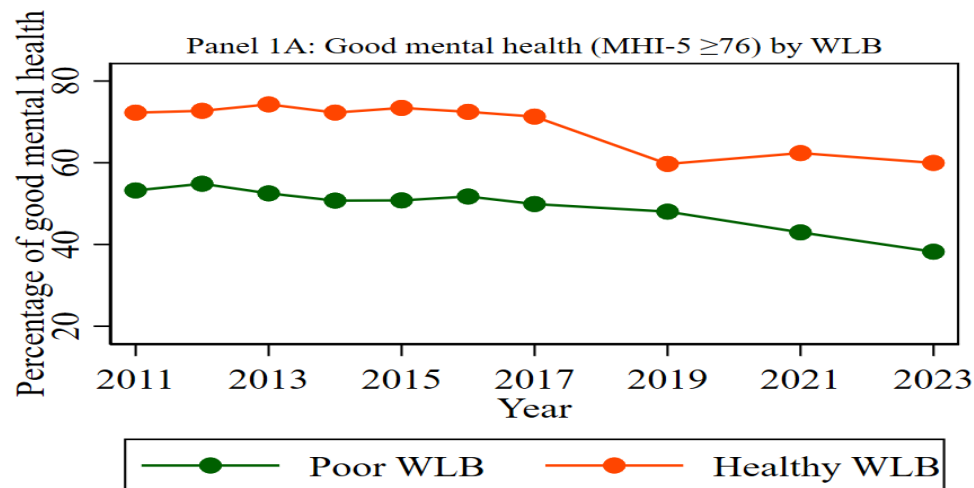
Table 1: Demographic, socioeconomic, work, lifestyle and health characteristics of participants: Baseline (wave 11), final time-point (wave 24) and pooled data (wave 11 to 24)

Variables/Characteristics	Baseline (2011)	Final wave (2024)	Pooled data (2011–2024)
	n (%)	n (%)	n (%)
Outcome variable: Mental health			
Poor mental health (MHI-5 < 76)	3,608 (38.10%)	4,757 (49.38%)	57,112 (43.20%)
Good mental health (MHI-5 ≥ 76)	5,861 (61.90%)	4,877 (50.62%)	75,104 (56.80%)
Exposure variable: Work-life balance			
Work-life balance			
Poor work-life balance (≤ 4.25)	1,888 (53.77%)	1,862 (49.35%)	19,809 (47.65%)
Healthy work-life balance (> 4.25)	1,623 (46.23%)	1,911 (50.65%)	21,760 (53.35%)
Work-life balance satisfaction			
Low to moderate satisfaction (≤ 8)	5,856 (61.84%)	5,436 (56.43%)	80,878 (61.17%)
High satisfaction (> 8)	3,613 (38.16%)	4,198 (43.57%)	51,338 (38.83%)
Work and employment characteristics			
Weekly working hours			
0–38 hours	4,841 (51.12%)	5,311 (55.13%)	70,346 (53.21%)

>38 hours	4,628 (48.88%)	4,323 (44.87%)	61,870 (46.79%)
Workplace firm size			
Small	4,080 (43.09%)		44,154 (33.40%)
Medium	2,611 (27.57%)	9,634 (100%)	56,447 (42.69%)
Large	2,778 (29.34%)		31,615 (23.91%)
Types of employment contract			
Permanent	6,959 (73.49%)	7,366 (76.46%)	97,818 (73.98%)
Fixed term	8,02 (8.47%)	7,72 (8.01%)	11,183 (8.46%)
Casual	1,708 (18.04%)	1,496 (15.53%)	23,215 (17.56%)
Occupational category			
Professional	2,342 (24.73%)	2,844 (29.52%)	34,838 (26.35%)
Managerial	1,250 (13.2%)	1,432 (14.86%)	18,603 (14.07%)
Technical	1,280 (13.52%)	1,095 (11.37%)	16,741 (12.66%)
Community	1,004 (10.6%)	1,199 (12.45%)	15,917 (12.04%)
Clerical	1,489 (15.72%)	1,129 (11.72%)	17,789 (13.45%)
Sales	765 (8.08%)	622 (6.46%)	9,947 (7.52%)
Machinery	544 (5.75%)	586 (6.08%)	7,882 (5.96%)
Labours	795 (8.4%)	727 (7.55%)	10,499 (7.94%)
Supervisory responsibility			
Yes	4,382 (46.28%)	4,229 (43.90%)	59,170 (44.75%)
No	5,087 (53.72%)	5,405 (56.10%)	73,046 (55.25%)
Union or employee association membership			
Yes	2,319 (24.49%)	1,933 (20.06%)	29,445 (22.27%)
No	7,150 (75.51%)	7,701 (79.94%)	102,771 (77.73%)
Entitlement to paid holiday leave			
Yes	7,469 (78.78%)	7,972 (82.75%)	105,452 (79.76%)
No	2,009 (21.22%)	1,662 (17.25%)	26,764 (20.24%)
Entitlement to paid sick leave			
Yes	7,474 (78.93%)	8,007 (83.11%)	105,854 (80.06%)
No	1,995 (21.07%)	1,627 (16.89%)	26,362 (19.94%)
Overall job satisfaction: M (SD)	7.65 (1.66)	7.86 (1.50)	7.74 (1.55)
<i>Socio-demographic and socio-economic characteristics</i>			
Age group			
17-34 years	3,476 (36.71%)	3,621 (37.59%)	51,250 (38.76%)
35-49 years	3,351 (35.39%)	3,325 (34.51%)	42,825 (32.39%)
50-67	2,642 (27.90%)	2,688 (27.90%)	38,141 (28.85%)
Gender			
Male	4,867 (51.40%)	4,725 (49.05%)	66,017 (49.93%)
Female	4,602 (48.60%)	4,909 (50.95%)	66,199 (50.07%)
Current marital status			
Partnered	3,397 (35.87%)	3,349 (34.76%)	46,507 (35.18%)
Unpartnered	6,072 (64.13%)	6,285 (65.24%)	85,709 (64.82%)
Highest educational attainment			
Year 12 and below	3,429 (36.21%)	2,594 (26.93%)	40,864 (30.91%)
Certificate III or IV	3,197 (33.76%)	3,088 (32.05%)	45,752 (34.60%)
Undergraduate	2,843 (30.02%)	3,952 (41.02%)	45,600 (34.49%)
Equivalised household income (Quintiles)			
Quintile 1 (poorest)	1,895 (20.01)	1,927 (20.00)	26,445 (20.00%)
Quintile 2	1,894 (20.00)	1,927 (20.00)	26,443 (20.00%)
Quintile 3	1,893 (19.99)	1,928 (20.00)	26,443 (20.00%)
Quintile 4	1,896 (20.02)	1,927 (20.00)	26,444 (20.00%)
Quintile 5 (richest)	1,891 (19.97)	1,925 (19.98)	26,441 (20.00%)
Indigenous status			
Not of indigenous origin	9,326 (98.49%)	9,370 (97.26%)	129,187 (97.71%)
Aboriginal or Torres Strait Islander origin	143 (1.51%)	264 (2.74%)	3,029 (2.29%)
Remoteness of residence			
Major cities	6,641 (70.13%)	6,766 (70.23%)	92,017 (69.60%)
Regional or remote	2,828 (29.87%)	2,868 (29.77%)	40,199 (30.40%)

<i>Lifestyle characteristics</i>			
Smoking status			
Never smoker	5,139 (54.27%)	5,965 (61.92%)	76,687 (58.00%)
Ex-smoker	2,449 (25.86%)	2,336 (24.25%)	33,455 (25.30%)
Current smoker	1,881 (19.86%)	1,333 (13.84%)	22,074 (16.70%)
Alcohol consumption status			
Never drunk	579 (6.11%)	813 (8.44%)	8,451 (6.39%)
Ex-drinker	515 (5.44%)	856 (8.89%)	9,113 (6.89%)
Current drinker	8,375 (88.45%)	7,965 (82.68%)	114,652 (86.72%)
Physical activity level			
Less than the recommended level	6,189 (65.36%)	6,368 (66.10%)	86,666 (65.55%)
Recommended level	3,280 (34.64%)	3,266 (33.90%)	45,550 (34.45%)
<i>Health characteristics</i>			
Body Mass Index (BMI) category			
Underweight	195 (2.06%)	148 (1.54%)	2,220 (1.68%)
Healthy weight	3,806 (40.19%)	3,352 (34.79%)	49,768 (37.64%)
Overweight	3,400 (35.91%)	3,485 (36.17%)	47,254 (35.74%)
Obesity	2,068 (21.84%)	2,649 (27.50%)	32,974 (24.94%)
Long-term health condition or disability			
No disability	7,912 (83.56%)	7,868 (81.67%)	108,972 (82.42%)
Disability	1,557 (16.44%)	1,766 (18.33%)	23,244 (17.58%)

Notes: 1. Abbreviations: 1. *M* = Mean, *SD* = Standard deviations, *MHI* = Mental Health Inventory, *BMI* = Body Mass Index.



Notes: 1. Work-life balance data were available from 2011 to 2023 (Waves 11–23), whereas work-life balance satisfaction data were available from 2011 to 2024 (Waves 11–24); 2. MHI-5 = Mental Health Inventory-5.

Figure 1: Trends in the prevalence of good mental health (MHI-5 ≥ 76 and MHI-5 ≥ 60) among Australian workers by work-life balance and work-life balance satisfaction.

Figure 1 presents trends in the prevalence of good mental health according to work–life balance (WLB) (Panels 1A–1B; Waves 11–23) and work–life balance satisfaction (Panels 1C–1D; Waves 11–24). Across all survey waves, participants with a healthy WLB consistently reported a higher prevalence of good mental health than those with poor WLB. Using the MHI-5 ≥ 76 threshold, the prevalence of good mental health declined from around 72% in 2011 to 59.97% in 2023 among participants with a healthy WLB, compared with a decline from approximately 53% to 38.24% among those with poor WLB (Panel 1A). A similar pattern was observed using the MHI-5 ≥ 60 threshold, with good mental health reported by 85.61% of participants with a healthy WLB and 71.86% of those with poor WLB in 2023 (Panel 1B). A noticeable decline in good mental health occurred after 2018, although the gap between the two groups remained substantial throughout the study period.

Similar trends were observed for WLB satisfaction (Panels 1C–1D). Participants reporting high WLB satisfaction consistently had a greater prevalence of good mental health than those with low to moderate satisfaction across all survey waves. By 2024, 56.84% of participants with high WLB satisfaction reported good mental health (MHI-5 ≥ 76), compared with 45.82% among those with low to moderate satisfaction (Panel 1C). Using the MHI-5 ≥ 60 threshold, the corresponding prevalences were 81.52% and 74.39%, respectively (Panel 1D). Although good mental health declined over time, particularly after 2019, participants with healthy WLB and high WLB satisfaction consistently maintained better mental health than their counterparts throughout the study period.

3.2 Regression model

The random-effects logistic regression results presented in Table 2 showed a significant positive association between work–life balance and good mental health among Australian workers in both the primary and sensitivity analyses. In the primary analysis, workers with a healthy work–life balance had more than twice the odds of reporting good mental health (MHI-5 ≥ 76) compared with those experiencing poor work–life balance (adjusted odds ratio [aOR] = 2.05, 95% CI: 1.91–2.20). A similarly strong association was observed in the sensitivity analysis using the lower mental health threshold (MHI-5 ≥ 60), where healthy work–life balance was associated with higher odds of good mental health (aOR = 2.19, 95% CI: 2.00–2.39).

Likewise, higher work–life balance satisfaction was positively associated with good mental health. Workers reporting high work–life balance satisfaction had 15% higher odds of good mental health in the primary analysis (aOR = 1.15, 95% CI: 1.11–1.20) and 12% higher odds

in the sensitivity analysis (aOR = 1.12, 95% CI: 1.07–1.18) than those with low to moderate work–life balance satisfaction.

Table 2: Estimated association between work-life balance and mental health: Random-effects logistic regression model

	Primary regression model: Good mental health (MHI-5 ≥76)		Sensitivity analysis model: Good mental health (MHI-5 ≥ 60)	
Variables	Model 1 (WLB)	Model 2 (WLBS)	Model 1 (WLB)	Model 2 (WLBS)
	aOR [95% CI]	aOR [95% CI]	aOR [95% CI]	aOR [95% CI]
<i>Key exposure variables</i>				
Work-life balance				
Poor work-life balance (ref)				
Healthy work-life balance	2.05*** (1.91, 2.20)		2.19*** [2.00, 2.39]	
Work-life balance satisfaction				
Low to moderate satisfaction (ref)				
High satisfaction		1.15*** [1.11, 1.20]		1.12*** [1.07, 1.18]
<i>Work and employment characteristics</i>				
Weekly working hours				
0-38 hours (ref)				
>38 hours	1.12** (1.04, 1.22)	1.04 (1.01, 1.09)	1.14** (1.04, 1.25)	1.05 (0.99, 1.10)
Workplace firm size				
Small (ref)				
Medium	1.04 (0.95, 1.14)	1.01 (0.96, 1.07)	1.08 (0.97, 1.20)	1.10** (1.03, 1.17)
Large	1.06 (0.96, 1.16)	1.04 (0.99, 1.10)	1.17* (1.04, 1.31)	1.05 (0.98, 1.12)
Types of employment contract				
Permanent (ref)				
Fixed term	0.96 (0.86, 1.08)	0.97 (0.91, 1.03)	0.96 (0.84, 1.11)	1.02 (0.94, 1.10)
Casual	0.78** (0.65, 0.93)	0.85** (0.77, 0.94)	0.83 (0.66, 1.04)	0.88 (0.78, 0.99)
Occupational category				
Professional (ref)				
Managerial	1.10 (0.98, 1.24)	1.03 (0.96, 1.10)	1.11 (0.95, 1.29)	0.96 (0.88, 1.05)
Technical	0.94 (0.81, 1.09)	0.99 (0.90, 1.08)	1.04 (0.87, 1.25)	1.00 (0.90, 1.10)
Community	1.02 (0.88, 1.18)	1.09* (1.00, 1.18)	1.03 (0.87, 1.23)	0.99 (0.90, 1.09)
Clerical	1.06 (0.93, 1.22)	1.10* (1.02, 1.19)	0.99 (0.85, 1.17)	1.03 (0.94, 1.13)
Sales	1.07 (0.89, 1.28)	1.03* (0.94, 1.13)	0.95 (0.77, 1.17)	0.97 (0.88, 1.08)
Machinery	1.11 (0.92, 1.34)	1.13* (1.01, 1.26)	1.04 (0.83, 1.30)	0.97 (0.85, 1.10)
Labours	0.95 (0.80, 1.13)	1.10 (1.10, 1.21)	0.86 (0.71, 1.06)	0.94 (0.84, 1.05)
Supervisory responsibility				
Yes (ref)				
No	0.93* (0.87, 1.00)	0.97 (0.93, 1.01)	0.92 (0.84, 1.00)	0.94* (0.90, 0.99)
Union or employee association membership				
Yes (ref)				
No	0.95 (0.87, 1.04)	1.01 (0.95, 1.06)	0.88* (0.79, 0.99)	0.96 (0.90, 1.03)
Entitlement to paid holiday leave				
Yes (ref)				
No	0.89 (0.62, 1.28)	0.86 (0.71, 1.03)	0.71 (0.46, 1.09)	0.76* (0.61, 0.95)
Entitlement to paid sick leave				
Yes (ref)				
No	1.19 (0.82, 1.74)	1.22* (1.01, 1.48)	1.47 (0.94, 2.30)	1.37** (1.09, 1.72)
Overall job satisfaction	1.37*** (1.34, 1.40)	1.31*** (1.30, 1.33)	1.34*** (1.31, 1.38)	1.31*** (1.29, 1.33)
<i>Socio-demographic and socio-economic characteristics</i>				
Age group				
17-34 years (ref)				
35-49 years	1.16** (1.06, 1.26)	1.17*** (1.11, 1.23)	1.29*** (1.17, 1.43)	1.25*** (1.17, 1.33)
50-67years	1.66*** (1.48, 1.86)	2.05*** (1.91, 2.21)	1.70*** (1.48, 1.96)	2.15*** (1.98, 2.34)
Gender				
Male (ref)				

Female	0.70*** (0.63, 0.78)	0.63*** (0.59, 0.68)	0.67*** (0.59, 0.76)	0.64*** (0.59, 0.70)
Current marital status				
Partnered (ref)				
Unpartnered	1.68*** (1.53, 1.85)	1.38*** (1.31, 1.45)	1.78*** (1.60, 1.98)	1.59*** (1.50, 1.69)
Highest educational attainment				
Year 12 and below (ref)				
Certificate III or IV	1.00 (0.90, 1.13)	1.06 (0.99, 1.14)	1.02 (0.89, 1.16)	1.04 (0.96, 1.13)
Undergraduate	1.06 (0.93, 1.22)	1.43** (1.05, 1.24)	1.25** (1.07, 1.47)	1.29*** (1.18, 1.42)
Equivalised household income (quintiles)				
Quintile 1	0.75*** (0.66, 0.84)	0.76*** (0.71, 0.81)	0.77** (0.66, 0.89)	0.80*** (0.74, 0.87)
Quintile 2	0.83** (0.75, 0.93)	0.83*** (0.78, 0.89)	0.82** (0.71, 0.94)	0.88** (0.82, 0.95)
Quintile 3	0.89* (0.80, 0.99)	0.89*** (0.84, 0.95)	0.93 (0.82, 1.07)	0.95 (0.88, 1.02)
Quintile 4	0.90* (0.81, 0.99)	0.94* (0.89, 0.99)	0.87* (0.76, 0.98)	0.96 (0.89, 1.02)
Quintile 5 (ref)				
Remoteness of residence				
Major cities (ref)				
Regional or remote	1.17** (1.06, 1.29)	1.11** (1.04, 1.18)	1.17** (1.05, 1.31)	1.09* (1.01, 1.16)
Indigenous origin				
Not of Indigenous origin (ref)				
Aboriginal or Torres Strait Islander origin	0.71* (0.53, 0.96)	0.63*** (0.51, 0.79)	0.74 (0.53, 1.01)	0.67*** (0.54, 0.83)
Lifestyle and health characteristics				
Smoking status				
Never smoker (ref)				
Ex-smoker	0.92 (0.83, 1.02)	0.85*** (0.79, 0.90)	0.85** (0.75, 0.96)	0.80*** (0.74, 0.86)
Current smoker	0.73*** (0.65, 0.83)	0.65*** (0.60, 0.70)	0.64*** (0.56, 0.74)	0.59*** (0.55, 0.64)
Alcohol consumption status				
Never drunk (ref)				
Ex-drinker	0.80* (0.65, 0.90)	0.93 (0.83, 1.03)	1.01 (0.80, 1.27)	0.96 (0.85, 1.09)
Current drinker	0.96 (0.81, 1.14)	1.03 (0.94, 1.13)	1.35** (1.11, 1.64)	1.23*** (1.11, 1.37)
Physical activity level				
Less than the recommended level (ref)				
Recommended level	1.61*** (1.49, 1.73)	1.55*** (1.49, 1.62)	1.66*** (1.51, 1.82)	1.61*** (1.54, 1.69)
Bodi Mass Index (BMI) category				
Underweight	0.79 (0.57, 1.09)	0.75*** (0.65, 0.87)	0.90 (0.62, 1.31)	0.80** (0.68, 0.94)
Health weight (ref)				
Overweight	1.00 (0.92, 1.09)	0.94* (0.90, 0.99)	0.99 (0.89, 1.09)	0.95 (0.90, 1.01)
Obesity	0.86** (0.77, 0.96)	0.82*** (0.76, 0.87)	0.80*** (0.70, 0.90)	0.77*** (0.72, 0.83)
Long-term health condition or disability				
No disability				
Disability	0.46*** (0.41, 0.50)	0.52*** (0.50, 0.55)	0.40*** (0.36, 0.44)	0.47*** (0.44, 0.49)
Number of observations	41,569	132,216	41,569	132,216
Number of groups	12,461	20,530	12,461	20,530
Other controls	Yes	Yes	Yes	Yes
Time controls	Yes	Yes	Yes	Yes

Notes: 1. Ref = Reference; 2. WLB = Work-life balance and WLBS = Work-life balance satisfaction; 3. *** = $P < 0.001$, ** = $P < 0.01$, and * = $P < 0.05$; 4. CI = 95% Confidence Interval; 5. Statistically significant estimates are bold.

3.3 Heterogeneity analysis

The heterogeneity analysis showed that the positive association between work–life balance and good mental health was consistent across demographic and employment subgroups (Table 3). Healthy work–life balance was positively associated with good mental health irrespective of weekly working hours. Workers employed for 0–38 hours per week had approximately twice the odds of reporting good mental health (aOR = 2.11, 95% CI: 1.91, 2.33), while those working more than 38 hours per week had even higher odds (aOR = 2.22, 95% CI: 2.01, 2.46). High

work–life balance satisfaction was also associated with greater odds of good mental health in both groups, although the association was slightly stronger among workers employed for standard weekly hours (aOR = 1.19, 95% CI: 1.13, 1.26) than among those working more than 38 hours per week (aOR = 1.14, 95% CI: 1.07, 1.21).

Across employment contract types, healthy work–life balance remained a significant predictor of good mental health. The strongest association was observed among workers on fixed-term contracts (aOR = 3.04, 95% CI: 2.34, 3.96), followed by casual employees (aOR = 2.26, 95% CI: 1.85, 2.76) and permanent employees (aOR = 2.12, 95% CI: 1.96, 2.30). In contrast, high work–life balance satisfaction was significantly associated with good mental health among permanent employees (aOR = 1.17, 95% CI: 1.12, 1.23) and casual employees (aOR = 1.20, 95% CI: 1.09, 1.32), whereas the association among fixed-term employees was not statistically significant.

Healthy work–life balance was also associated with significantly higher odds of good mental health regardless of supervisory responsibility. The association was somewhat stronger among workers with supervisory responsibilities (aOR = 2.34, 95% CI: 2.12, 2.59) than among those without supervisory responsibilities (aOR = 2.12, 95% CI: 1.92, 2.34). Similarly, high work–life balance satisfaction was positively associated with good mental health among both supervisors (aOR = 1.24, 95% CI: 1.17, 1.32) and non-supervisors (aOR = 1.13, 95% CI: 1.07, 1.19).

The association between healthy work–life balance and good mental health strengthened with increasing age. Compared with workers reporting poor work–life balance, those with a healthy work–life balance had 88% higher odds of reporting good mental health among workers aged 17–34 years (aOR = 1.88, 95% CI: 1.66, 2.14), 134% higher odds among those aged 35–49 years (aOR = 2.34, 95% CI: 2.13, 2.58), and 148% higher odds among those aged 50–67 years (aOR = 2.48, 95% CI: 2.05, 3.00). High work–life balance satisfaction was also significantly associated with good mental health across all age groups, although the magnitude of the association was more modest (aORs ranging from 1.18 to 1.23).

The association between healthy work–life balance and good mental health was similar for men (aOR = 2.10, 95% CI: 1.89, 2.32) and women (aOR = 2.02, 95% CI: 1.84, 2.23). Likewise, high work–life balance satisfaction was associated with greater odds of good mental health among both men (aOR = 1.16, 95% CI: 1.10, 1.23) and women (aOR = 1.15, 95% CI: 1.09, 1.21), indicating that the beneficial association of work–life balance was consistent across genders.

Table 3. Heterogeneity in the association between work–life balance and good mental health (MHI-5 $\geq$ 76): Random-effects logistic regression analyses stratified by weekly working hours, employment contract type, supervisory responsibility, age group, and gender.

Parameter	Primary regression model: Good mental health (MHI-5 $\geq$ 76)	
	Exposure: WLB aOR [95% CI]	Exposure: WLBS aOR [95% CI]
Panel A: Weekly working hours		
0–38 hours	2.11*** (1.91, 2.33)	1.19*** (1.13, 1.26)
Observations (number of groups)	20,817 (8,710)	70,346 (16,123)
>38 hours	2.22*** (2.01, 2.46)	1.14*** (1.07, 1.21)
Observations (number of groups)	20,752 (7,052)	61,870 (13,090)
Panel B: Types of employment contract		
Permanent	2.12*** (1.96, 2.30)	1.17*** (1.12, 1.23)
Observations (number of groups)	32,551 (10,104)	97,818 (17,130)
Fixed term	3.04*** (2.34, 3.96)	1.08 (0.93, 1.25)
Observations (number of groups)	3,464 (2,139)	11,183 (5,400)
Casual	2.26*** (1.85, 2.76)	1.20*** (1.09, 1.32)
Observations (number of groups)	5,554 (3,250)	23,215 (8,881)
Panel C: Supervisory responsibility		
Yes	2.34*** (2.12, 2.59)	1.24*** (1.17, 1.32)
Observations (number of groups)	20,594 (7,281)	59,170 (13,564)
No	2.12*** (1.92, 2.34)	1.13*** (1.07, 1.19)
Observations (number of groups)	20,975 (8,591)	73,046 (16,752)
Panel D: Age groups		
17–34 years	1.88*** (1.66, 2.14)	1.61*** (1.09, 1.23)
Observations (number of groups)	12,016 (5,883)	51,250 (11,336)
35–49 years	2.34*** (2.13, 2.58)	1.23** (1.04, 1.21)
Observations (number of groups)	22,044 (6,169)	42,825 (8,548)
50–67 years	2.48*** (2.05, 3.00)	1.18*** (1.09, 1.29)
Observations (number of groups)	7,509 (3,634)	38,141 (6,544)
Panel E: Gender		
Male	2.10*** (1.89, 2.32)	1.16*** (1.10, 1.23)
Observations (number of groups)	21,668 (6,161)	66,017 (10,185)
Female	2.02*** (1.84, 2.23)	1.15*** (1.09, 1.21)
Observations (number of groups)	19,901 (6,300)	66,199 (10,346)

Notes: 1. WLB = Work-life balance and WLBS = Work-life balance satisfaction; 3. *** = $P < 0.001$, ** = $P < 0.01$, and * = $P < 0.05$; 4. CI = 95% Confidence Interval, 5. All models were adjusted with relevant covariates of workplace firm size, occupational category, union or employee association membership, entitlement to paid holiday leave, entitlement to paid sick leave, overall job satisfaction, current marital status, highest educational attainment, equivalised household income (quintiles), remoteness of residence, indigenous origin, smoking status, alcohol consumption status, physical activity level, and body mass index (BMI) category, and long-term health condition or disability.

4. Discussion

4.1 Key findings

The aim of this study was to examine the association between work–life balance and mental health among Australian workers using a nationally representative longitudinal dataset. Our findings showed that healthy work–life balance was associated with more than twice the odds

of reporting good mental health. This association was evident using the primary threshold ($\text{MHI-5} \geq 76$) and remained robust in sensitivity analyses using the moderate threshold ($\text{MHI-5} \geq 60$). These findings suggest that maintaining a healthy work–life balance over time is closely linked to improved mental health among Australian workers. Similarly, higher satisfaction with work–life balance was associated with a greater likelihood of reporting good mental health. Together, these findings indicate that both the objective experience of balancing work and personal life and individuals' subjective satisfaction with that balance play important roles in promoting good mental health. Furthermore, the observed decline in good mental health between 2011 and 2024 paralleled the gradual deterioration in work–life balance satisfaction, suggesting that increasing work and life pressures may be contributing to poorer mental health among Australian workers over time

4.2 Work-life balance and mental health

Our findings showed that a healthy work–life balance was significantly associated with good mental health, and this association could not be explained by participants' demographic, socioeconomic, work-related, lifestyle, or health characteristics. This result strengthens the international evidence that a healthy work-life balance is associated with good mental health (Borowiec & Drygas, 2022; L & Muhammad, 2023; Zhang et al., 2024). For example, a systematic review conducted in Indonesia, taking studies from many countries including the United States of America, Canada, the United Kingdom, Australia, South Korea, Saudi Arabia, Malaysia, Brazil, Nigeria, Ghana identified a positive correlation between healthy work-life balance and positive mental health among employees (L & Muhammad, 2023). Similarly, a recent cross-sectional study using data from Pakistan showed that work-life balance contributes to good mental health outcomes among Nurses through mediating psychological capital and job satisfaction (Zhang et al., 2024). A European study conducted in Poland, showed that lower work-life balance among Warsaw's middle-class specialists, managers, and entrepreneurs was associated with poorer mental and physical health, with this relationship becoming stronger over time (Borowiec & Drygas, 2022).

Although healthy work-life balance is often linked with reduced depression, anxiety, work stress, insomnia, and burnout, a systematic review noted that this evidence was not uniformly strong across studies, suggesting that the relationship between work-life balance and mental health may vary depending on context and study design (L & Muhammad, 2023).

A possible explanation for this consistent association between work-life balance and mental health is that maintaining a healthy work-life balance reduces role overload and chronic stress,

enabling individuals to preserve emotional resources and engage more fully in restorative non-work activities, which together support good mental health.

4.3 Work-life balance satisfaction and mental health

Our study findings also revealed that high work–life balance satisfaction was positively associated with good mental health, and this relationship remained robust after adjusting for socio-demographic, work, health, and lifestyle characteristics. Although research focusing on work-life balance satisfaction is still relatively limited, the present finding aligns with existing evidence indicating that satisfaction with work–life balance is beneficial for mental health outcomes (Grawitch et al., 2010; Ortiz-Bonnin et al., 2022). For instance, a study conducted in Spain using three online surveys reported that high work-life balance satisfaction was associated with improved subjective wellbeing and work performance during the COVID-19 lockdown (Ortiz-Bonnin et al., 2022). In a similar vein, the ‘Personal Resource Allocation’ (PRA) framework suggests that individuals’ satisfaction with how they distribute time and energy across life domains contributes to enhanced mental health and performance (Grawitch et al., 2010). In addition, prior research has indicated that high work-life balance satisfaction can facilitate better individual adjustment during crisis situations (Eby et al., 2016).

One possible explanation for this finding is that high work-life balance satisfaction reflects individuals' perceived effectiveness in allocating time and energy across different life domains. This positive appraisal may reduce perceived strain, enhance a sense of control, and support psychological recovery processes, thereby contributing to good mental health.

4.4 Policy implications

The findings from our study have important implications for policies aimed at promoting mental health, wellbeing, and sustainable workforce participation among Australian workers. Given the significant associations between healthy work–life balance, work–life balance satisfaction, and better mental health, policymakers should strengthen initiatives that support the integration of work and non-work domains. Australia has established national workplace frameworks to promote work–life balance, including the Right to Disconnect and formal Flexible Working Arrangements under the *Fair Work Act 2009* (Fair Work Ombudsman, 2026). Building on these existing frameworks, our findings suggest that greater emphasis should be placed on their effective implementation across workplaces, particularly by reducing excessive work demands, supporting reasonable boundaries outside working hours, and facilitating access to flexible working arrangements. These measures may help reduce work-related stress and promote better mental health and wellbeing.

The observed associations between work–life balance and its satisfaction and broader outcomes, including organisational commitment, job satisfaction, family functioning, overall life satisfaction, and marital quality (Losoncz & Bortolotto, 2009; Lu et al., 2009; Matysiak et al., 2016; Wayne et al., 2017), further highlight the importance of addressing workplace and individual-level factors. Stress-management initiatives, resilience-building programs, and self-efficacy development could complement structural policies by strengthening workers’ capacity to manage competing demands and could be incorporated into ongoing professional development and employee wellbeing programs.

A further consideration is the challenge faced by working mothers in balancing employment and family responsibilities (Losoncz & Bortolotto, 2009). Expanding access to high-quality, affordable childcare with flexible hours could reduce work–family strain and support greater labour force participation among mothers (Brady, 2016). A coordinated approach combining workplace flexibility, the Right to Disconnect, supportive organisational practices, and accessible childcare may therefore provide a comprehensive strategy for improving work–life balance and mental health.

4.5 Strengths, limitations and avenues for future research

Our study draws on the panel structure of a large, nationally representative longitudinal dataset to examine the association between work-life balance and mental health among Australian workers aged 17–67. This is particularly valuable given the predominance of cross-sectional evidence in this field. By applying random-effects logistic regression models in both the main analyses, sensitivity analysis and heterogeneity analysis, we improve the precision of the estimated effects and provide more robust evidence on the association between work-life balance and mental health. A comprehensive set of demographics, socioeconomic, work, lifestyle, and health covariates was included to reduce potential confounding and minimise omitted variable bias. This is especially important in mental health research, where endogeneity arising from health behaviours and lifestyle choices is a key concern. Another strength of this study is the use of MHI-5 two cut-off scores (> 76 for main analysis and > 60 for sensitivity analysis) to assess good mental health. Employing both validated cut-offs allowed us to examine the robustness of the findings across different levels of mental health status in relation to work–life balance.

Nevertheless, several limitations should be acknowledged. First, the use of self-reported data for mental health and other covariates may introduce recall bias and social desirability bias. Second, as the study was conducted in Australia, the generalisability of the findings to other countries specially in the low-and medium income countries and cultural contexts may be

limited. Third, although work-life balance satisfaction was measured using single-item indicators in the HILDA Survey, which may raise concerns about measurement precision, prior evidence suggests that single-item satisfaction measures can still demonstrate acceptable reliability and stability (Shields & Wooden, 2003).

Another limitation relates to potential bidirectionality in the observed associations. While our findings indicate that both healthy work-life balance and high satisfaction is positively associated with good mental health, it is also plausible that individuals with good mental health are more likely to report healthy work-life balance and high satisfaction. As the study focuses on associations rather than causality, future research using causal designs is needed to clarify the direction of these relationships. In addition, the use of individual-level data limits our ability to examine contextual or community-level effects of work-life balance on mental health. Multilevel studies would therefore be valuable in extending this work. Finally, further research is needed to better understand the underlying mechanisms linking work-life balance with different dimensions of health and wellbeing.

5. Conclusion

Our study provides robust longitudinal evidence that maintaining a healthy work-life balance and high satisfaction are strongly associated with good mental health among Australian workers. Drawing on nationally representative HILDA data spanning 2011–2024, the findings show that periods of healthy work-life balance consistently coincide with good mental health. Although some convergence in work-life balance indicators has emerged in recent years, a substantial share of the workforce continues to experience poor work-life balance and satisfaction. This pattern parallels the broader decline in mental health among working-age adults since 2011. Together, these results highlight the importance of organisational practices and public policies that support sustainable working conditions, including flexibility, reasonable workloads, and supportive management. Enhancing such conditions may be vital for strengthening employee wellbeing and mitigating the increasing mental health challenges faced in contemporary labour markets.

Abbreviations

BMI	Body Mass Index
HILDA	Household, Income and Labour Dynamics in Australia
ILO	International Labour Organization
MHI	Mental Health Inventory
PRA	Personal Resource Allocation
WLB	Work-life Balance

WLBS	Work-life Balance Satisfaction
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WHO	World Health Organization
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Author contributions

MMHS: Writing-original draft, Writing-review and editing, Methodology, Data curation, Formal analysis, Conceptualisation.

SAK: Writing-review and editing, Methodology, Data curation, Formal analysis, Conceptualisation, Supervision

RH: Writing-review and editing, Methodology, Formal analysis, Supervision.

MMH: Writing-review and editing, Methodology, Data Curation, Supervision.

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Data availability statement

Two versions of the HILDA data are available: the General Release and the Restricted Release. Our study used the Restricted Release data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. It is funded by the Australian Government Department of Social Services and managed by the Melbourne Institute at the University of Melbourne. Access to the full dataset is limited because it contains sensitive personal information. Researchers must complete and sign a Confidentiality Deed Poll before accessing any Department of Social Services (DSS) longitudinal data, and all team members who view unit record data must also sign this form. Electronic signatures are accepted, and the signed documents must be submitted to DSS and the Australian Data Archive. Further information on access procedures is available through the Australian Data Archive's HILDA data portal.

Ethical approval

The HILDA Survey complies with the ethical standards outlined in the National Statement on Ethical Conduct in Human Research and is conducted in accordance with the Declaration of Helsinki. All respondents provided written informed consent prior to participation. The initial wave and all subsequent waves of the HILDA Survey were approved by the University of Melbourne Human Research Ethics Committee (Ethics ID: 1647030). A new approval was granted in February 2025 (Project ID: 31363). Access to HILDA data is managed by the Australian Data Archive (ADA), and researchers must obtain formal approval and adhere to

the terms of the HILDA Data User Licence Agreement. Our present study utilises secondary data and poses minimal risk to participants.

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Conflicts of interest

The authors report no conflicts of interest.

References

- Arias, D., Saxena, S., & Verguet, S. (2022). Quantifying the global burden of mental disorders and their economic value. *eClinicalMedicine*, 54. <https://doi.org/10.1016/j.eclinm.2022.101675>
- Arpino, B., & Luppi, F. (2020). Childcare arrangements and working mothers' satisfaction with work–family balance. *Demographic Research*, 42, 549–588. <https://doi.org/10.4054/DemRes.2020.42.19>
- Australian Institute of Health and Welfare. (2025). *Expenditure—Mental health*. Australian Institute of Health and Welfare. <https://www.aihw.gov.au/mental-health/topic-areas/facilities-resources/expenditure>
- Berglund, E., Anderzén, I., Andersén, Å., & Lindberg, P. (2021). Work-life balance predicted work ability two years later: A cohort study of employees in the Swedish energy and water sector. *BMC Public Health*, 21(1), 1212. <https://doi.org/10.1186/s12889-021-11235-4>
- Borowiec, A. A., & Drygas, W. (2022). Work–Life Balance and Mental and Physical Health among Warsaw Specialists, Managers and Entrepreneurs. *International Journal of Environmental Research and Public Health*, 20(1), 492. <https://doi.org/10.3390/ijerph20010492>
- Brady, M. (2016). Gluing, catching and connecting: How informal childcare strengthens single mothers' employment trajectories. *Work, Employment and Society*, 30(5), 821–837. <https://doi.org/10.1177/0950017016630259>
- Bubonya, M., Cobb-Clark, D. A., & Wooden, M. (2017). Mental health and productivity at work: Does what you do matter? *Labour Economics*, 46, 150–165. <https://doi.org/10.1016/j.labeco.2017.05.001>
- Butterworth, P., & Crosier, T. (2004). The validity of the SF-36 in an Australian National Household Survey: Demonstrating the applicability of the Household Income and Labour Dynamics in Australia (HILDA) Survey to examination of health inequalities. *BMC Public Health*, 4, 44. <https://doi.org/10.1186/1471-2458-4-44>
- Ciccarelli, F. C., Mariotti, I., & Rossi, F. (2025). The role of geographical location for work-life balance satisfaction: Insights from Italian coworking spaces. *Applied Geography*, 174, 103485. <https://doi.org/10.1016/j.apgeog.2024.103485>
- Craig, L., & Sawrikar, P. (2008). Satisfaction with work-family balance for parents of early adolescents compared to parents of younger children. *Journal of Family Studies*, 14(1), 91–106. <https://doi.org/10.5172/jfs.327.14.1.91>
- D.Allison, P. (2009). *Fixed Effects Regression Models*. SAGE Publications, Inc. <https://doi.org/10.4135/9781412993869>
- Eby, L. T., Mitchell, M., & Zimmerman, L. (2016). Work and family in times of crisis. In *The Oxford handbook of work and family* (pp. 417–430). Oxford University Press.
- Fair Work Ombudsman. (2025). *Flexible working arrangements—Fair Work Ombudsman*. <https://www.fairwork.gov.au/employment-conditions/flexibility-in-the-workplace/flexible-working-arrangements>

- Fair Work Ombudsman. (2026). *Flexible working arrangements best practice guide*.
<https://www.fairwork.gov.au/tools-and-resources/best-practice-guides/flexible-working-arrangements>
- GBD 2017 Disease and Injury Incidence and Prevalence Collaborators. (2018). Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990-2017: A systematic analysis for the Global Burden of Disease Study 2017. *Lancet (London, England)*, 392(10159), 1789–1858. [https://doi.org/10.1016/S0140-6736\(18\)32279-7](https://doi.org/10.1016/S0140-6736(18)32279-7)
- Grawitch, M. J., Barber, L. K., & Justice, L. (2010). Rethinking the Work–Life Interface: It’s Not about Balance, It’s about Resource Allocation. *Applied Psychology: Health and Well-Being*, 2(2), 127–159. <https://doi.org/10.1111/j.1758-0854.2009.01023.x>
- Greenhaus, J. H., Collins, K. M., & Shaw, J. D. (2003). The relation between work–family balance and quality of life. *Journal of Vocational Behavior*, 63(3), 510–531. [https://doi.org/10.1016/S0001-8791\(02\)00042-8](https://doi.org/10.1016/S0001-8791(02)00042-8)
- Hashim, M., & Ullah, M. (2016). *IMPACT OF TIME FLEXIBILITY ON EMPLOYEES’ PERFORMANCE: A STUDY OF TEACHING FACULTY IN GOVERNMENT COLLEGES OF MANAGEMENT SCIENCES PESHAWAR*.
- Heinz, S. S., O’Brien, A. J., Walker, C., O’Sullivan, M., Rouse, P., Whitehead, J., Parsons, M., Cunningham, R., & Edmonds, M. (2025). Mediating pathways between resilience, mental health and wellbeing: A scoping review of individual, social, and systemic factors. *BMC Public Health*, 25(1), 3758. <https://doi.org/10.1186/s12889-025-24897-1>
- Ho, N. (2025). *What Is the Legal Working Age in Australia? - Lawpath*.
<https://lawpath.com.au/blog/what-is-the-legal-working-age-in-australia>
- ILO. (1981). *Convention C156—Workers with Family Responsibilities Convention, 1981 (No. 156)*.
https://normlex.ilo.org/dyn/nrmlx_en/f?p=NORMLEXPUB:12100:0::NO::P12100_INSTRUMENT_ID:312301
- ILO. (2000). *Convention C183—Maternity Protection Convention, 2000 (No. 183)*.
https://normlex.ilo.org/dyn/nrmlx_en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312328
- Kelly, M. J., Dunstan, F. D., Lloyd, K., & Fone, D. L. (2008). Evaluating cutpoints for the MHI-5 and MCS using the GHQ-12: A comparison of five different methods. *BMC Psychiatry*, 8(1), 10. <https://doi.org/10.1186/1471-244X-8-10>
- Keramat, S. A., Comans, T., Basri, R., Bailey, D., Brooks, D., & Dissanayaka, N. N. (2025). The Estimation of Health State Utility Values for Psychological Distress in Australia: Implications for Future Economic Evaluations. *Value in Health*, 28(3), 368–378. <https://doi.org/10.1016/j.jval.2024.12.002>
- Keramat, S. A., Sarker, P. M., Comans, T., Brooks, D., & Dissanayaka, N. N. (2025). Deterioration of health-related quality of life: The hidden health burden of informal caregiving. *The European Journal of Health Economics*, 26(8), 1415–1438. <https://doi.org/10.1007/s10198-025-01776-5>
- Kirkbride, J. B., Anglin, D. M., Colman, I., Dykxhoorn, J., Jones, P. B., Patalay, P., Pitman, A., Soneson, E., Steare, T., Wright, T., & Griffiths, S. L. (2024). The social

- determinants of mental health and disorder: Evidence, prevention and recommendations. *World Psychiatry*, 23(1), 58–90. <https://doi.org/10.1002/wps.21160>
- Kondiroli, F., & Sunder, N. (2022). Mental health effects of education. *Health Economics*, 31(Suppl 2), 22–39. <https://doi.org/10.1002/hec.4565>
- L, L., & Muhammad, R. (2023). The Association Between Work-life Balance and Employee Mental Health: A systemic review. *Asia Pacific Journal of Health Management*, 18(3). <https://doi.org/10.24083/apjhm.v18i3.2565>
- LaB, I., & Wooden, M. (2025, April 3). *Temporary employment and work-life balance in Australia*. Melbourne Institute of Applied Economic and Social Research. <https://melbourneinstitute.unimelb.edu.au/publications/working-papers>
- Losoncz, I. (2011). *Persistent work-family strain among Australian Mothers*. <http://hdl.handle.net/1885/19614>
- Losoncz, I., & Bortolotto, N. (2009). Work-life balance: The experiences of Australian working mothers. *Journal of Family Studies*, 15(2), 122–138. <https://doi.org/10.5172/jfs.15.2.122>
- Lu, J.-F., Siu, O.-L., Spector, P. E., & Shi, K. (2009). Antecedents and outcomes of a fourfold taxonomy of work-family balance in Chinese employed parents. *Journal of Occupational Health Psychology*, 14(2), 182–192. <https://doi.org/10.1037/a0014115>
- Marti, A. R., Degerud, E., & Sterud, T. (2022). Onset of Work-Life Conflict Increases Risk of Subsequent Psychological Distress in the Norwegian Working Population. *International Journal of Environmental Research and Public Health*, 19(20), 13292. <https://doi.org/10.3390/ijerph192013292>
- Matysiak, A., Mencarini, L., & Vignoli, D. (2016). Work–Family Conflict Moderates the Relationship Between Childbearing and Subjective Well-Being. *European Journal of Population*, 32(3), 355–379.
- Ortiz-Bonnin, S., Blahopoulou, J., García-Buades, M. E., & Montañez-Juan, M. (2022). Work-life balance satisfaction in crisis times: From luxury to necessity – The role of organization’s responses during COVID-19 lockdown. *Personnel Review*, 52(4), 1033–1050. <https://doi.org/10.1108/PR-07-2021-0484>
- Pocock, B., Skinner, N., & Williams, P. (2008). Measuring Work—Life Interaction: The Australian Work and Life Index (AWALI) 2007. *Labour and Industry*, 18(3), 19–43. <https://doi.org/10.1080/10301763.2008.10669373>
- Prasad, K. D. V., Rao, M., Vaidya, R., Sriyogi, K., Singh, S., & Srinivas, V. (2025). The relationship between work-life balance and psychological well-being: An empirical study of metro rail travelers working in the information technology sector. *Frontiers in Psychology*, 15, 1472885. <https://doi.org/10.3389/fpsyg.2024.1472885>
- Rehm, J., & Shield, K. D. (2019). Global burden of disease and the impact of mental and addictive disorders. *Current Psychiatry Reports*, 21(2), 10. <https://doi.org/10.1007/s11920-019-0997-0>
- Safe Work Australia. (2022). *Model Code of Practice: Managing psychosocial hazards at work* | Safe Work Australia. <https://www.safeworkaustralia.gov.au/doc/model-code-practice-managing-psychosocial-hazards-work>
- Sagar, M. M. H., Keramat, S. A., Hasan, M. M., Hashmi, R., & Mamun, A. (2026). Effects of personal and work-related stressful life events on mental health among middle-aged

- and older Australians: Longitudinal evidence from 16 waves of cohort data. *Journal of Epidemiology & Community Health*. <https://doi.org/10.1136/jech-2026-226256>
- Services Australia. (2026). *Age Pension Eligibility & Retirement Age* | *AustralianSuper*. <https://pws-prd-aus-sc.australiansuper.com/retirement/retirement-articles/2022/02/age-pension-eligibility-and-retirement-age>
- Shields, M., & Wooden, M. (2003). *Marriage, Children and Subjective Well-being*.
- Ten Have, M., Van Bon-Martens, M. J. H., Schouten, F., Van Dorsselaer, S., Shields-Zeeman, L., & Luik, A. I. (2024). Validity of the five-item mental health inventory for screening current mood and anxiety disorders in the general population. *International Journal of Methods in Psychiatric Research*, 33(3), e2030. <https://doi.org/10.1002/mpr.2030>
- Teychenne, M., Sousa, G. M., Baker, T., Liddelow, C., Babic, M., Chantry, A. J., France-Ratcliffe, M., Guagliano, J., Christie, H. E., Tremaine, E. M., Booker, B., Gargioli, D., Bannell, D. J., Bao, R., Brooks, C., Lubans, D. R., Swann, C., Vella, S. A., Lonsdale, C., ... White, R. L. (2026). Domain-specific physical activity and mental health: An updated systematic review and multilevel meta-analysis in a combined sample of 3.3 million people. *British Journal of Sports Medicine*, 60(4), 267–285. <https://doi.org/10.1136/bjsports-2025-109806>
- The Guardian. (2025). *How to improve Work-Life Balance* | *Guardian Recruiters*. How to Improve Work-Life Balance |Guardian Recruiters. <https://recruiters.theguardian.com/advice/healthy-work-life-balance>
- Thorsen, S. V., Rugulies, R., Hjarsbech, P. U., & Bjorner, J. B. (2013). The predictive value of mental health for long-term sickness absence: The Major Depression Inventory (MDI) and the Mental Health Inventory (MHI-5) compared. *BMC Medical Research Methodology*, 13, 115. <https://doi.org/10.1186/1471-2288-13-115>
- Tseliou, F., & Ashfield-Watt, P. (2022). The association between resilience resources, contextual factors and mental health status: A national population-based study. *BMC Public Health*, 22(1), 602. <https://doi.org/10.1186/s12889-022-13013-2>
- United Nations. (2025). *Goal 8* | *Department of Economic and Social Affairs*. <https://sdgs.un.org/goals/goal8>
- van der Molen, H. F., Nieuwenhuijsen, K., Frings-Dresen, M. H. W., & de Groene, G. (2020). Work-related psychosocial risk factors for stress-related mental disorders: An updated systematic review and meta-analysis. *BMJ Open*, 10(7), e034849. <https://doi.org/10.1136/bmjopen-2019-034849>
- Verve Editorial Staff. (2025). *Why is Work-Life Balance Important for Mental Health?* | *Verve Behavioral Health*. <https://vervebh.com/why-is-work-life-balance-important-for-mental-health/>
- Watson, N. (2021). Finding Your Way Around the HILDA Survey Data. *Australian Economic Review*, 54(4), 554–564. <https://doi.org/10.1111/1467-8462.12437>
- Watson, N., & Wooden, M. (2021). The Household, Income and Labour Dynamics in Australia (HILDA) Survey. *Jahrbücher Für Nationalökonomie Und Statistik*, 241(1), 131–141. <https://doi.org/10.1515/jbnst-2020-0029>
- Wayne, J. H., Butts, M. M., Casper, W. J., & Allen. (2017). *In Search of Balance: A Conceptual and Empirical Integration of Multiple Meanings of Work–Family*

- Balance—Wayne—2017—Personnel Psychology—Wiley Online Library.*
<https://onlinelibrary.wiley.com/doi/full/10.1111/peps.12132>
- WHO. (2022). *Guidelines on mental health at work.*
<https://www.who.int/publications/i/item/9789240053052>
- Wu, X., Xia, H., Li, M., & Bian, Y. (2025). Running on empty: How energy poverty disrupts the work-life balance in Australia. *Energy Research & Social Science*, 129, 104372.
<https://doi.org/10.1016/j.erss.2025.104372>
- Yamazaki, S., Fukuhara, S., & Green, J. (2005). Usefulness of five-item and three-item Mental Health Inventories to screen for depressive symptoms in the general population of Japan. *Health and Quality of Life Outcomes*, 3, 48.
<https://doi.org/10.1186/1477-7525-3-48>
- Yang, J. W., Suh, C., Lee, C. K., & Son, B. C. (2018). The work-life balance and psychosocial well-being of South Korean workers. *Annals of Occupational and Environmental Medicine*, 30, 38. <https://doi.org/10.1186/s40557-018-0250-z>
- Zhang, J., Rehman, S., Addas, A., & Ahmad, J. (2024). Influence of Work-Life Balance on Mental Health Among Nurses: The Mediating Role of Psychological Capital and Job Satisfaction. *Psychology Research and Behavior Management*, 17, 4249–4262.
<https://doi.org/10.2147/PRBM.S497305>