

Review Article

The role of resilience in the work-life interface: A systematic review

Chiara Bernuzzi^{a,1,*}, Valentina Sommovigo^{b,2} and Ilaria Setti^{a,3}

^a*Unit of Applied Psychology, Department of Brain and Behavioural Sciences, University of Pavia, Pavia, Italy*

^b*Department of Psychology, Faculty of Medicine and Psychology, Sapienza University of Rome, Rome, Italy*

Received 13 October 2020

Accepted 1 November 2021

Abstract.

BACKGROUND: In an increasingly competitive marketplace, workers struggle to find a good balance between work and personal life. Difficulties in fulfilling the demands arising from these different domains may undermine employees' well-being and job-related outcomes, thereby, impairing organizational productivity.

OBJECTIVE: Does resilience play a relevant role in relation to work-life interface? And, if so, how is resilience related to its three facets (i.e., work-life conflict, enrichment, and balance)? To answer these questions, the current paper systematically reviews studies analysing the role of resilience in the work-life interface.

METHODS: A key terms literature search was performed using multiple electronic databases (i.e., Scopus, PsycINFO, Web of Science, PubMed) without setting any publication date limitation. The review process followed the international PRISMA statement guidelines. A quality assessment was conducted using the Mixed Methods Appraisal Tool.

RESULTS: A total of 26 eligible papers published between 2009 and 2020 were included. Among these, 6 employed a qualitative design, while 20 studies adopted a quantitative design mostly examining resilience as antecedent. Data were predominantly collected in the healthcare sector. Resilience was mainly analysed in relation to work-life conflict. The most commonly used theoretical framework was Conservation of Resources theory.

CONCLUSIONS: Overall, resilience was negatively associated with work-life conflict and positively related to both work-life balance and enrichment. A positive work-life balance can promote resilience, but resilience can also help workers to balance work and life. Additionally, resilience can protect from the negative effects of both work-life imbalance and work-life conflict on workers' health and job-related outcomes.

Keywords: Resilience, work-life conflict, work-life enrichment, work-life balance, systematic review

1. Introduction

Nowadays, striking a healthy work-life balance has become even more difficult [1] because of several factors, such as the presence of dual-earner couples and the growing number of working women [2]. Thus, an

ever-growing number of people experience difficulties in fulfilling family needs [3, 4].

Throughout this review, the term “work-life interface” will be used to refer to the relationship between work and non-work domains. This umbrella term includes three different facets [5]: a) negative facet (i.e., conflict), b) positive facet (i.e., enrichment), c) and integrative facet (i.e., balance).

The first facet is work-life conflict that occurs when employees perceive incompatibility between work and other domains of life [6]. For example, work demands may interfere with family needs and vice versa [7]. Both situations may negatively affect

¹ORCID ID: 0000-0003-0703-1398

²ORCID ID: 0000-0001-9273-5706

³ORCID ID: 0000-0001-7901-4226

*Address for correspondence: Chiara Bernuzzi, Unit of Applied Psychology, Department of Brain and Behavioural Sciences, University of Pavia, Piazza Botta 11, 27100 Pavia, Italy. E-mail: chiara.bernuzzi01@universitadipavia.it.

employees' well-being [8, 9] and family functioning [10], in addition to impairing employees' job satisfaction [11] and performance [12, 13]. Thus, the boundaries between work and family life are often blurred such that individuals' behaviours, and emotions from one domain may spill over into another [14]. Then, spillover can be bidirectional. Most studies on the work-family interface concentrate on the negative spillover between the two domains [6, 8, 15]. These studies adopt a conflict perspective which assumes that people in multiple roles often do not have enough time (i.e., time-based conflict) to satisfy the demands in all of the roles [14, 16]. Alternatively, they cannot meet the requirements of one role because of certain behaviours required by (i.e., behaviour-based conflict) or strain resulting from their involvement in another role (i.e., strain-based conflict) [14, 16]. However, more recently researchers have begun to concentrate on the positive work-family spillover by assuming that the benefits of multiple roles may prevail over the disadvantages [17]. As such, resources produced in one role may improve the quality of experiences and outcomes in another role, thereby leading to work-family enrichment [17]. Enrichment can be conceptualized as a bidirectional construct [18]. It may lead workers to experience greater well-being [19], lower turnover [20], greater work engagement [21], and a better family functioning [22].

Besides work-life conflict and enrichment, researchers considered work-life balance which reflects an overall perception of role balance based on general work-life situations [5]. It refers to the ability to combine family commitment, leisure, and work [23], although researchers have paid more attention to family issues than to other non-working life aspects [24]. In this respect, work-family balance regards the ability to fulfil expectations related to both work and family roles [25]. It is related to high psycho-physical health [26], lower psychological distress [27] and burnout [28], high family satisfaction and functioning, in addition to being positively associated with commitment [29].

Among the numerous personal features influencing work-life interface (e.g., neuroticism [30], positive affectivity [31], emotional intelligence [32]), resilience is an interesting variable as it embraces the core qualities of personal resources [33] that are salient for handling stressors. Resilience refers to a dynamic process that enables people to handle stressful events and recover from adversities [34]. Resilient individuals are likely to experience greater well-being

[35], lower burnout [36], decreased psychological distress [37], and lower depression [38]. As a result, they are also likely to report positive work-related outcomes, such as greater job performance [39] and lower turnover [40]. Indeed, resilience may facilitate workers in overcoming professional challenges and striving to achieve their job goals. Thus, highly career resilient employees can more easily persist in their own careers, even in the face of negative work situations [41]. Resilience can also be viewed as a state-like component of the Psychological Capital (PsyCap) construct (i.e., an individual's favourable psychological state composed by resilience, optimism, hope and efficacy) [33]. Therefore, resilience is a state-like ability and a dynamic resource that may be learnable through proper training [42–44]. This systematic review aims to understand whether resilience might protect from work-life conflict, promote work-life enrichment, and facilitate work-life balance.

2. Methods

This systematic review was conducted between May and June 2020 following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis statement guidelines (PRISMA) [45]. First, we established the following research questions: Does resilience play a relevant role in relation to work-life interface? And, if so, how is resilience related to its three facets (i.e., work-life conflict, enrichment, and balance)? Then, a search for registered and work in progress studies on this topic was conducted in the International Prospective Register of Systematic Reviews (PROSPERO) database. Given that no similar work was found, this systematic review protocol was registered (ref. CRD42020188575).

2.1. Eligibility criteria

2.1.1. Inclusion criteria

We included peer-reviewed papers written in English analysing the relationship between resilience and at least one of the three work-life facets (i.e., conflict, enrichment, balance), which were identified as the key aspects of work-life interface [5]. In doing this, we considered the interface between the work domain and not only non-work general life domains, but also the specific domain of family in both directions (i.e., work to life and vice

versa; work to family and vice versa). In addition, we included quantitative, qualitative, mixed-method and research-intervention studies which explicitly assessed resilience and work-life constructs on samples of workers or working students who were at least 18 years of age. Additionally, we included papers which considered resilience not only as a unidimensional construct but also as a component of Psycap. In the latter case, included studies were those reporting findings that either considered resilience with other dimensions of Psycap or separately, which allowed us to detect the specific effects (at least in terms of correlations) of resilience on work-life constructs. We included papers containing specific forms (e.g., time-based conflict, strain-based conflict) and synonymises (e.g., work-life interference) of work-life conflict [5].

2.1.2. Exclusion criteria

We excluded articles focusing on subjects which were similar but not fully ascribable to the three considered constructs of work-life interface (e.g., work-related pressure to be available in the private domain). We excluded grey literature, editorials, commentaries, books, chapters of books, dissertations and papers which were written in languages other than English and/or published in non-peer-reviewed journals. Also, studies that focused on children, non-working students and family issues were not included. Moreover, we excluded qualitative studies from which these topics were not research questions or did not emerge as recurrent themes and quantitative studies which did not utilise instruments to measure resilience and work-life interface constructs.

2.2. Identification

The databases of PubMed, Scopus, Web of Science and PsycINFO were searched for peer-reviewed papers written in English on the role of resilience in work-life interface. To this end, we searched for articles whose titles or abstracts contained the following keywords: “resilience” OR “resiliency” OR “resilient” AND “work life conflict” OR “work life interference” OR “work family conflict” OR “work family interference” OR “work family negative spillover” OR “work life balance” OR “work family balance” “work family enrichment” OR “work family facilitation” OR “work family positive spillover” OR “work family enhancement”. Hyphenated alternative spelling variants were considered as well

(i.e., work life, work family). In order to provide an up-to-date and comprehensive review, no publication date limitations were set.

2.3. Screening

Following each search in the above-mentioned databases, 459 references were exported in End-Note software. After removing 198 duplicates, all titles, and abstracts of the remaining 261 papers were screened to select the relevant papers based on the inclusion and exclusion criteria. The selection of the papers was performed independently by the first two co-authors. Two reviewers then performed a convergence assessment and evaluated any discrepancies before agreeing on which papers should be included in the next stage. After removing 205 articles which met the exclusion criteria during the initial screening, the full text of the 56 remaining papers was actively searched using different methods (e.g., database searches, enquiries on collaborative research platforms, contacting the authors) and evaluated against the inclusion criteria. Figure 1 depicts a flowchart outlining the number of papers identified and rejected at each phase. Any doubts or disagreements about keeping or removing papers were discussed between the two review authors. Where no consensus was reached, a third reviewer made the final decision. According to the eligibility criteria, we also excluded a paper in which resilience was considered as a type of personality cluster stemmed from the combination of the Big Five factors [46]. In addition, we excluded a mixed-method study in which work-family conflict was analysed in the quantitative part and resilience emerged as a topic in the qualitative part, but the authors did not analyse the relationship between the two constructs [47]. Two studies [48, 49] were conducted on the same sample and, therefore, we decided to include the most recent article only. In all, 26 papers were finally selected for the review, with 30 papers removed during this phase.

2.4. Data extraction

Next, a characteristics table was designed, describing each selected paper to detect and cluster the relevant information. This table included: (a) study, (b) country, (c) study design, (d) sample, (e) observed variables, (f) resilience and work-life interface measurement tools, (g) theoretical frameworks and (h) main findings concerning the relationships between resilience and work-life interface constructs (see

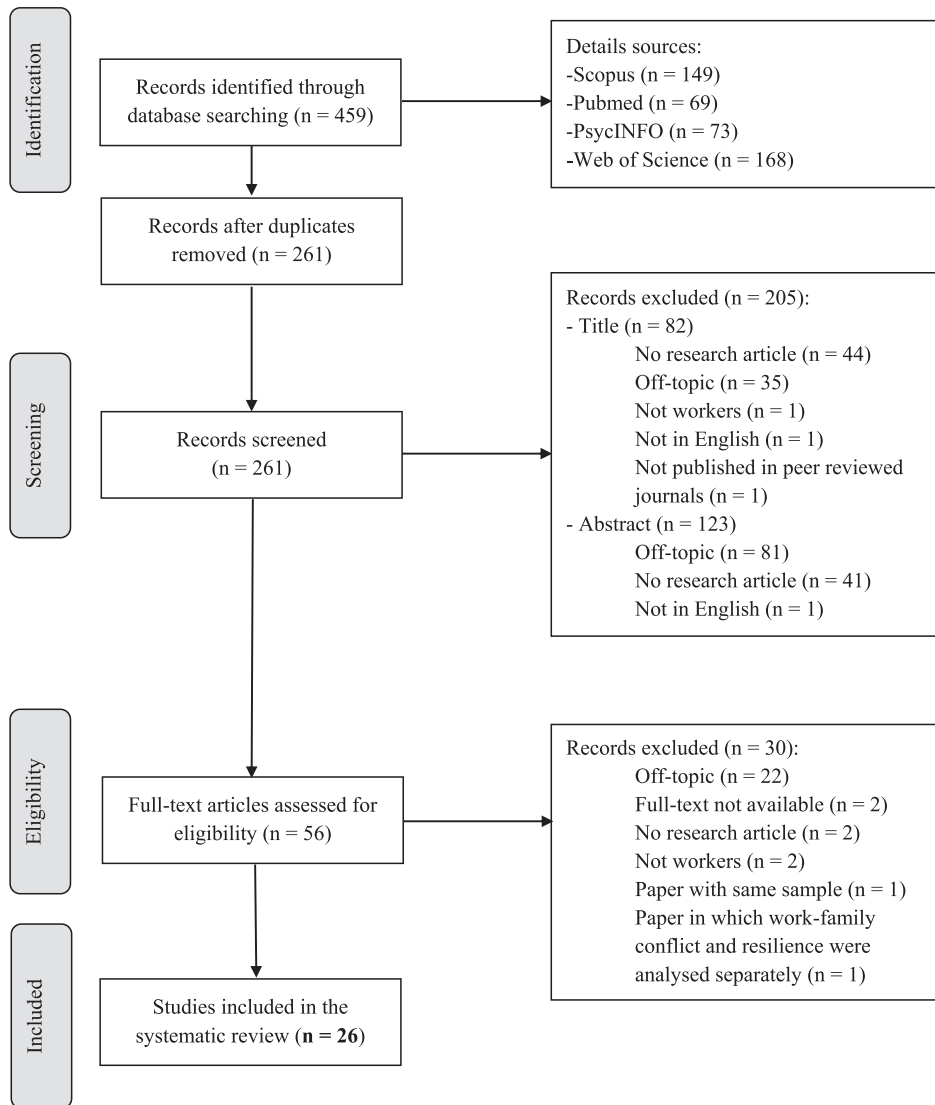


Fig. 1. Flow diagram of records identified, screened and included in the systematic review, according to PRISMA guidelines.

Table 1). The review authors distributed the included papers in order to re-read them and extract any relevant information. Subsequently, each reviewer checked the information gained by the other one to reach a consensus on the final content of the characteristics table.

2.5. Methodological quality assessment

The methodological quality of the included studies was assessed by adopting the Mixed Methods Appraisal Tool (MMAT) [50] which has been used by previous systematic reviews in the work psychology literature [34, 51] to critically appraise included

quantitative and qualitative studies. Following the MMAT guidelines [50], no studies were excluded because of the quality assessment. The MMAT tool includes two initial screening questions that need to be met in order to continue with the quality assessment. These questions regard the clearness of the study's research question(s) and the appropriateness of the data collected with respect to the study's purposes. Subsequently, the researcher has to choose the appropriate category for each study appraised depending on the research design. Each category of studies includes five core quality criteria on the basis of which studies are evaluated. In the current review, the selected studies fall within three categories: quali-

Table 1
Summary of findings on the relationships between resilience and work-life interface constructs

Author(s), year	Country	Study design	Subjects	Observed variables	Resilience and work-life interface constructs measures	Theoretical framework(s)	Main results
1. Bande et al. 2015 [62]	Spain	Cross-sectional	Industrial sales people (<i>n</i> = 209)	Resilience, WFC, emotional exhaustion, turnover intentions, emotional intelligence, servant leadership	Brief Resilience Scale (BRS) [97] WFC through 3 items [98]	–	Resilience was negatively related to WFC, emotional exhaustion and turnover intentions. WFC was positively associated with emotional exhaustion
2. Cameron and Brownie 2010 [84]	Australia	Qualitative	Registered nurses (<i>n</i> = 9)	Resilience, WLB	Questions developed by the authors	–	WLB was an important determinant of resilience as it increased personal resilience in the face of workplace adversities
3. Cheshire et al. 2017 [85]	UK	Qualitative	General practitioners (<i>n</i> = 22)	Resilience, WLB	Questions developed by the authors	–	A good WLB increased general practitioners' resilience
4. Day and Hong 2016 [88]	UK	Qualitative case study	Teachers (<i>n</i> = 8) and school leaders (<i>n</i> = 2)	Resilience, WLB	Questions developed by the authors	–	The achievement of a good WLB was perceived by school staff as both a challenge and a potential stressor. Competing demands from work and personal life might diminish their capacities for resilience
5. Dodson et al. 2019 [67]	USA	Cross-sectional	Otolaryngology surgical trainees (<i>n</i> = 46)	Resilience, work-life strain, workplace climate, perceived organizational support, burnout, job satisfaction	BRS [97] Work/Social Conflict Scale [99]	–	Resilience was negatively related to work-life strain
6. Green et al. 2011 [63]	USA	Cross-sectional	Paired sample of faculty members and their partners (<i>n</i> = 139)	Career resilience, WIF behaviours, observed WFC, FWC, partner negative emotional displays, blame attributions, turnover exploration	Career Resilience Scale [100] WIF behaviours through items developed by authors Work-Family Conflict Scale [101]	Cognitive appraisal theory [56]	Faculty members' WIF behaviours were positively related to their partners' reports of observed WFC, turning in more partners blame attributions and negative emotional displays when discussing work. This, in turn, was associated with less career resilience and greater turnover exploration by faculty members

(Continued)

Table 1
(Continued)

Author(s), year	Country	Study design	Subjects	Observed variables	Resilience and work-life interface constructs measures	Theoretical framework(s)	Main results
7. Griffin and Sun 2018 [64]	USA	Cross-sectional	Police officers ($n = 138$)	Resilience, WFC, stress, burnout	Dispositional Resiliency Scale (DRS-15) [102] Work-Family Conflict Scale [101]	–	Resilience was negatively related to WFC, burnout and stress, whereas WFC was positively associated with stress and burnout
8. Hao et al. 2015 [65]	China	Cross-sectional	Female nurses ($n = 824$)	PsyCap (including resilience), WFC, FWC, depressive symptoms	Psychological Capital Questionnaire (PCQ-24) [33] Work-Family Conflict Scale [101]	–	Resilience was negatively related to WFC, FWC and depressive symptoms Resilience partially mediated the relationship between FWC and depressive symptoms. Resilience did not moderate the relationship between WFC and depressive symptoms
9. Hourani et al. 2018 [77]	USA	Case-control	Soldiers ($n = 208$; soldiers with suicide behaviours $n = 71$; controls $n = 137$)	Resilience, WFC, FWC, suicidal behaviours, workplace victimization, depression symptoms, post-traumatic stress disorder, worry trait, alcohol dependence, illicit drug use, risk-taking/impulsivity, negative life events, combat exposure, active coping, family support, positive military attitude, positive unit leadership, leadership climate, unit cohesion	BRS [97] Work-Family Conflict Scale [101]	–	Lowly resilient soldiers were more vulnerable to suicidal behaviours and WFC as a result of workplace victimization than their highly resilient colleagues. Soldiers with suicidal behaviours were more likely to experience greater WFC and to report lower resilience levels than controls without suicidal behaviours
10. Johnson et al. 2019 [80]	UK	Cross-sectional	University employees ($n = 652$; n academic = 222; n non-academic = 430)	Resilience, stressors (including a poor WLB), psychological and physical ill-health	Shortened Stress Evaluation Tool (ASSET) [103]	Differential exposure reactivity framework [58]	Resilience buffered the impact of a poor WLB on employees' psychological ill-health, in addition to reducing their physical and psychological ill-health, both directly and indirectly, by improving their WLB

11. Karatepe and Karadas 2014 [61]	Romania	Time-lagged study	Frontline hotel employees ($n = 282$)	PsyCap (including resilience as its component), WFC, FWC, turnover and absence intentions	PCQ-24 [33] Work-Family Conflict Scale [101]	Conservation of Resources (COR) theory [52]; Congruence theory [57]	Resilience was negatively related to both WFC and FWC. Employees' PsyCap (that included resilience) was negatively related to turnover and absence intentions, both directly and indirectly, by reducing their FWC
12. Kim and Windsor 2015 [81]	South Korea	Qualitative	First-line nurse managers ($n = 20$)	Resilience, WLB	Questions developed by the authors	–	Resilience was perceived as a dynamic and reflective process promoting WLB
13. Krisor et al. 2015 [73]	Germany	Cross-sectional	Employed parents ($n = 35$)	Resilience, WFC, WFB, cortisol levels	German version of the Resilience Scale (RS) [104, 105] German version of the WFC Scale [106, 107] German translation of the WFB Scale [29]	COR theory [52]	Highly resilient employed parents reported lower cortisol (a biomarker of stress) levels. Resilience was positively related to WFB, but a non-significant association was found between resilience and WFC
14. Kutsyuruba et al. 2019 [87]	Canada	Qualitative	Teachers ($n = 36$)	Resilience, WLB, development, mentorship, well-being, leadership	Questions developed by the authors	–	WLB was identified by teachers as a strategy to develop resilience and well-being
15. Liossis et al. 2009 [82]	Australia	Research-intervention study (pre-test, post-test, 5-month follow-up with control group)	Employees ($n^1 = 28$; $n^2 = 19$; $n^3 = 10$) + comparison group ($n^1 = 98$; $n^2 = 65$; $n^3 = 54$)	WLB, work-life fit, work-family spillover, depression, anxiety, stress, exhaustion, vigour, job satisfaction, coping self-efficacy, dispositional optimism	WLB and work-life fit through single items [108] Work-Family Spillover Scale (WFSS) [18]	–	Participants to a strengths-based resilience building program reported a better work-life fit and a greater satisfaction with their WLB than those in the control group at the end of the program and 5 months later
16. Mache et al. 2015 [66]	Germany	Cross-sectional	Physicians ($n = 727$)	Resilience, WFC, emotional and quantitative job demands, job resources, self-efficacy, optimism	Brief Resilience Coping Scale (BRCS) [109] Work-Family Conflict Scale [101]	Job Demands-Resources (JD-R) model [53]; Job Demand-Control-Support (JDCS) model [59]; Role theory [54]; COR theory [52]	Resilience was negatively related to WFC. Highly resilient physicians were less likely to experience WFC in the face of job demands than those with lower resilience levels

(Continued)

Table 1
(Continued)

Author(s), year	Country	Study design	Subjects	Observed variables	Resilience and work-life interface constructs measures	Theoretical framework(s)	Main results
17. Martinez-Corts et al. 2015 [72]	Spain	Daily diary study	Employees ($n = 113$)	Resilience, strain-based WNWC, task and relationship conflict, optimism	3 items from the short version of the RS [105] 2 items adapted by the WFC subscale [110]	JD-R model [53]	Daily employees' resilience was negatively related to daily WNWC and it buffered the relationship between daily work-related interpersonal conflict (task and relationship conflict) and strain-based WLC
18. Mazerolle et al. 2018 [70]	USA	Cross-sectional	Athletic trainers ($n = 423$)	Resilience, WFC, FWC, WFE, FWE, hardiness, affectivity	BRS [97] Work-Family Conflict Scale [101] Short Work-Family Enrichment Scale [111]	Broaden-and-build theory of positive emotions [55]	Resilience was negatively related to both WFC and FWC, whereas it was positively related to both WFE and FWE. Highly resilient trainers had lower WFC and FWC, together with greater WFE and FEW than those with lower resilience
19. Nicklin et al. 2019 [68]	USA	Cross-sectional	Employed graduate students ($n = 231$)	Resilience, conflict and enrichment among the school, work and personal-life domains, mindfulness, self-compassion, recovery experience, stress	Connor-Davidson Resilience Scale (CD-RISC) [112] Conflict through an 18-item scale [101, 113] Enrichment through an 18-item scale [29]	COR theory [52]; Work-Family Enrichment theory [17]	Resilience was positively related to both WFE and FEW, whereas it was negatively related to WFC. Resilience decreased employed students' distress both directly and indirectly, by diminishing their WFC. WFE did not mediate the relationship between resilience and distress
20. Porter et al. 2018 [79]	USA	Cross-sectional	Family medicine residency program directors ($n = 465$)	Resilience, WLB, personal time, ability to stop thinking about work, burnout	BRS [97] WLB through questions developed by the authors	–	Resilience was positively related to having a moderate to great amount of personal time, a healthier WLB, and capability to stop thinking about work
21. Riall et al. 2018 [83]	USA	Research-intervention study (pre-test and post-test)	General surgery residents ($n = 49$)	WLB, self-awareness, emotional intelligence, burnout, perceived stress, depression, distress	WLB through the Energy Leadership Index created by authors	–	Participants to the Energy Leadership Well-Being and Resiliency Program reported greater satisfaction with their WLB at the completion of the intervention

22. Siu 2013 [49]	China	Two-wave cross-lagged design	Health care workers ($n = 287$)	Resilience, WLB, optimism, hope, self-efficacy, work well-being	Resilience Scale [48] Work-Life Balance Scale [114]	COR theory [52]	Healthcare workers' resilience was positively related to their WLB, job satisfaction, physical and psychological well-being
23. Viotti et al. 2018 [71]	Italy	Cross-sectional	Nurses ($n = 333$)	Resilience, time-based and strain-based work-to-private-life interferences, work-related bullying	4 items from the Italian version of the CD-RISC [115, 116] Survey Work-home Interaction-NijmeGen (SWING) [117]	COR theory [52]	Resilience was negatively related to both strain-based and time-based work-to-private-life interference. Resilience partially mediated the relationship between work-related bullying and both strain-based and time-based work-to-private-life interference
24. Wayne et al. 2020 [69]	USA	Cross-sectional (study 1) Cross-lagged (study 2)	Employees (study 1, $n = 216$; study 2, $n = 220$)	Resilience, WFC, FWC, WFE, FWE, work and family-supportive supervisor behaviours, balance satisfaction (studies 1 and 2), enriched job and family characteristics, proactive health behaviours (study 1), work autonomy (study 2)	BRS [97] Work-Family Conflict Scale [110] Work-Family Enrichment Scale [118] Satisfaction with Work-Family Balance Scale [119]	COR theory [52]	Resilience was negatively related to WFC, whereas it was positively associated with WFE, FWE and work-family balance satisfaction (Studies 1 and 2). Resilience was negatively associated with FWC (Study 2)
25. Yu 2016 [78]	USA	Cross-sectional	Professional employees ($n = 561$)	Career resilience, WIFT, WIFS, WIFB, core self-evaluation, work stress	Career Resilience through the subscale of the Career Motivation Scale [120] Work-Family Conflict Scale [110]	Resource Allocation theory [60]; Role theory [54]	Career resilience was negatively related to WIFS, whereas it was positively associated with WIFB. Employees' core self-evaluation led to greater career resilience which, in turn, resulted in higher levels of both WIFB and WIFS
26. Zwink et al. 2013 [86]	USA	Qualitative	Inpatient acute care nurse managers (NM; $n = 20$)	Resilience, work-life balance, role satisfaction, retention	Questions developed by the authors	–	Resilient managers are able to achieve a healthy WLB. Resilience was detected as one of the main characteristics that might lead to success whilst work-life imbalance was identified as a factor contributing to burnout

Note: WFC = Work-Family Conflict; FWC = Family-Work Conflict; WLB = Work-Life Balance; WIF = Work-interferes-family; WFE = Work-Family Enrichment; FWE = Family-Work Enrichment; WIFT = time-based work interference with family; WIFS = strain-based work interference with family; WIFB = behaviour-based work interference with family, n^1 = sample number at pre-test, n^2 = sample number at post-test, n^3 = sample number at follow-up; WNWC = work and non-work conflict.

tative, quantitative non-randomized, and quantitative descriptive. The criteria for qualitative studies regard: a) the appropriateness of the qualitative approach with respect to the research question(s); b) the adequacy of the qualitative data collection methods; c) whether the findings are properly derived from the data; d) whether the interpretation of results is adequately substantiated by the data; e) the coherence between qualitative data sources, collection, analysis, and interpretation.

The criteria for quantitative non-randomized studies include: a) whether the research participants are representative of the target population; b) the appropriateness of measurements concerning both the outcome and intervention (or exposure); c) the presence of complete outcome data; d) whether the confounders are adequately considered in the design and analysis; e) whether, during the research period, the intervention (or exposure occurred) is administered as intended. The criteria for quantitative descriptive studies comprise: a) the appropriateness of the sampling strategy with reference to the study's research question(s); b) whether the sample is representative of the target population; c) the appropriateness of the measurements; d) whether the risk of nonresponse bias is acceptably low; e) the appropriateness of the statistical analyses with reference to the study's research question(s). To perform the assessment, the last version of the MMAT recommends selecting one out of three response alternatives (yes, no, can't tell) for each of the quality criteria that have been identified for the specific design category [50]. According to the suggestions provided by Hong et al. [50], the first two authors performed the assessment independently and any discrepancy was solved through discussion with the third author. As shown in Table 2, all the selected papers met at least three out of five quality criteria.

3. Results

A total of 26 papers, which were published between 2009 and 2020, were included. Among these, 20 adopted a quantitative design and 6 utilised a qualitative design. Regarding the sample characteristics, 11 studies included healthcare professionals (e.g., nurses, physicians, general practitioners), 6 studies did not provide a detailed sample description, 4 studies were conducted on employees working within the education sector (e.g., teachers, school leaders, academics), and the remaining 5 studies com-

prised workers employed in different occupations (i.e., industrial salespeople, frontline hotel employees, police officers, soldiers and athletic trainers).

With regard to the observed variables, 16 articles analysed the relationship between resilience and work-life conflict. Among these, 3 papers also investigated how resilience was linked to work-life enrichment, while 10 articles also examined the association between resilience and work-life balance. More specifically, most of the included quantitative studies tested resilience as an antecedent (8 studies), followed by investigations analysing its mediating (3 studies) or moderating (4 studies) role, while it was studied as an outcome only once.

The remaining studies did not hypothesize any specific role of resilience. More specifically, regarding the resilience-work-life conflict association, 4 studies treated resilience as an antecedent, 3 investigations studied it as a moderator, 3 studies analysed it as a mediator, 1 research article considered it as an outcome, whereas 5 studies did not include any statistical model, making it difficult to detect a specific role of resilience. Concerning the resilience-work-life enrichment relationship, 2 research papers analysed resilience as antecedent while 1 research paper included only correlations. Regarding the resilience-work-life balance link, 5 research articles studied resilience as an antecedent, 1 research paper analysed its moderating role, while 1 research paper did not hypothesize any specific function of resilience.

The most commonly used theories were Conservation of Resources (COR) theory [52], which was adopted by 7 research articles, Job Demands-Resources (JD-R) model [53], which was used in 2 research articles and the Role theory [54] which was mentioned in 2 research articles. Other theoretical frameworks cited once comprised: Broaden-and-build theory of positive emotions [55], Cognitive appraisal theory [56], Congruence theory [57], Differential exposure reactivity framework [58], Job Demand-Control-Support model [59], Resource Allocation theory [60] and Work-family enrichment theory [17]. Notably, 14 research articles did not adopt any theoretical framework.

3.1. Resilience and work-life conflict relationship

Resilience was negatively related to work-family conflict [61–70] and family-work conflict [61, 63, 65, 69, 70]. For instance, athletic trainers with high resilience developed lower levels of

Table 2
Mixed methods appraisal tool (MMAT), version 2018

	Screening questions		Qualitative studies					Quantitative non-randomized studies					Quantitative descriptive studies					Comments
	S1.	S2.	1.1.	1.2.	1.3.	1.4.	1.5.	3.1.	3.2.	3.3.	3.4.	3.5.	4.1.	4.2.	4.3.	4.4.	4.5.	
1. Bande et al. 2015 [62]	Y	Y											Y	Y	Y	Y	Y	
2. Cameron and Brownie 2010 [84]	Y	Y	Y	Y	Y	Y	Y											
3. Cheshire et al. 2017 [85]	Y	Y	Y	Y	Y	Y	Y											
4. Day and Hong 2016 [88]	Y	Y	Y	Y	Y	Y	Y											
5. Dodson et al. 2019 [67]	Y	Y											Y	N	Y	N	Y	Low response rate (22%)
6. Green et al. 2011 [63]	Y	Y											Y	Y	Y	-	Y	Response rate not reported
7. Griffin and Sun 2018 [64]	Y	Y											Y	Y	Y	Y	Y	
8. Hao et al. 2015 [65]	Y	Y											Y	Y	Y	Y	Y	
9. Hourani et al. 2018 [77]	Y	Y						Y	Y	Y	Y	Y						
10. Johnson et al. 2019 [80]	Y	Y											Y	Y	Y	Y	Y	
11. Karatepe and Karadas 2014 [61]	Y	Y						Y	Y	Y	Y	N						Exposure was not designed by researchers
12. Kim and Windsor 2015 [81]	Y	Y	Y	Y	Y	Y	Y											
13. Krisor et al. 2015 [73]	Y	Y											Y	-	Y	-	Y	Response rate and sampling strategy not reported
14. Kutsyuruba et al. 2019 [87]	Y	Y	Y	Y	Y	Y	Y											
15. Liossis et al. 2009 [82]	Y	Y						Y	Y	-	-	Y						Numerous dropouts were registered between the first and the third time points
16. Mache et al. 2015 [66]	Y	Y											Y	N	Y	Y	Y	
17. Martinez-Corts et al. 2015 [72]	Y	Y											Y	Y	Y	Y	Y	
18. Mazerolle et al. 2018 [70]	Y	Y											Y	Y	Y	N	Y	Low response rate (14%)
19. Nicklin et al. 2019 [68]	Y	Y											Y	Y	Y	-	Y	Low response rate (18.27%)
20. Porter et al. 2018 [79]	Y	Y											Y	Y	Y	Y	Y	
21. Riall et al. 2018 [83]	Y	Y						Y	Y	Y	-	Y						
22. Siu 2013 [49]	Y	Y						Y	Y	Y	N	Y						
23. Viotti et al. 2018 [71]	Y	Y											Y	Y	Y	Y	Y	
24. Wayne et al. 2020 [69]	Y	Y						Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Exposure was not designed by researchers
25. Yu 2016 [78]	Y	Y											Y	Y	Y	Y	Y	
26. Zwink et al. 2013 [86]	Y	Y	Y	Y	Y	Y	Y											

Note: (Y) yes, (N) no, (-) can't tell. **Screening questions:** (S1) Are there clear research questions? (S2) Do the collected data allow to address the research questions? **Qualitative studies:** (1.1.) Is the qualitative approach appropriate to answer the research question? (1.2.) Are the qualitative data collection methods adequate to address the research question? (1.3.) Are the findings adequately derived from the data? (1.4.) Is the interpretation of results sufficiently substantiated by data? (1.5.) Is there coherence between qualitative data sources, collection, analysis and interpretation? **Non-randomized studies:** (3.1.) Are the participants representative of the target population? (3.2.) Are measurements appropriate regarding both the outcome and intervention (or exposure)? (3.3.) Are there complete outcome data? (3.4.) Are the confounders accounted for in the design and analysis? (3.5.) During the study period, is the intervention administered (or exposure occurred) as intended? **Quantitative descriptive studies:** (4.1.) Is the sampling strategy relevant to address the research question? (4.2.) Is the sample representative of the target population? (4.3.) Are the measurements appropriate? (4.4.) Is the risk of nonresponse bias low? (4.5.) Is the statistical analysis appropriate to answer the research question? Wayne et al. [69] included two studies: study 1 was evaluated as a quantitative descriptive while study 2 was assessed as a non-randomized study.

both work-family conflict and family-work conflict than their colleagues with low resilience [70]. Additionally, resilience was negatively related to both strain-based and time-based work-to-private-life interference [71], in addition to being negatively associated with strain-based work-life conflict [72]. Furthermore, in a work by Nicklin et al. [68], resilience decreased working students' stress levels, both directly and indirectly, by reducing the conflict that they experienced among school, work, and personal life. In a similar vein, frontline hotel employees' PsyCap, which included resilience as its component, was negatively associated with turnover and absence intentions, both directly and indirectly, by decreasing family-work conflict [61]. Conversely, the study by Krisor et al. [73] revealed a non-significant relationship between resilience and work-family conflict, whereas the first study conducted by Wayne et al. [69] found a non-significant relationship between resilience and family-work conflict.

Moreover, employees who were targets of workplace victimization (e.g., bullying) [74] were likely to experience psychological malaise [75, 76], even though these effects were conditional on their resilience levels. For instance, workplace victimization increased the risk for soldiers with low resilience of engaging in suicidal behaviours and experiencing work-family conflict [77]. Such risk was not present among soldiers with high resilience, supporting the protective role of resilience against workplace victimization. Similarly, work-related bullying predicted strain-based and time-based work-to-private life interference among nurses [71]. This relationship was partially mediated by resilience, such that work-related bullying undermined nurses' resilience, but resilience reduced strain-based and time-based work-to-private life interference anyway. Two research articles examined the mediating role of resilience [65, 78]. The first study found that employees' core self-evaluation (i.e., a latent personality construct composed by self-esteem, locus of control, generalized self-efficacy, and emotional stability) led to greater career resilience. This, in turn, resulted in higher levels of both behaviour-based and strain-based work interference with family [78]. This finding suggested that career resilience might exert a detrimental impact on employees' family life [78]. The second study indicated that resilience had a partial mediation effect in the relationship between family-work conflict and depressive symptoms: greater family-work conflict reduced resilience, this, in turn, led to higher depressive symptoms [65]. The

same study revealed that resilience did not moderate the association between work-family conflict and depressive symptoms, even though it was directly and negatively related to these symptoms [65].

Two studies analysed the moderating role of resilience [66, 72]. The first showed that on days when employees felt themselves more resilient, they experienced lower strain-based work-life conflict in response to daily work-related interpersonal conflicts [72]. By confirming that resilience may fluctuate on a daily basis, this research article provided further evidence for the changeable nature of this personal characteristic. The second investigation revealed that more resilient physicians were less likely to experience work-family conflict in the face of high job demands than their lower resilient colleagues [66].

Finally, only one research article investigated resilience as an outcome. By investigating observed work-to-family conflict in 139 couples, the study explained how employees' feelings about their own work were influenced by the interactions with their partners [63]. More specifically, the study found that the focal employee's work-interfering-with-family behaviours were positively related to the partner's reports of observed work-to-family conflict, resulting in more partner negative emotional displays when discussing work. This, in turn, was associated with lower career resilience by the focal employee [63].

3.2. Resilience and work-family enrichment relationship

Resilience was positively correlated with both work-family and family-work enrichment [68–70]. More specifically, resilience was found to decrease working students' distress levels directly but not indirectly as mediated by enrichment, even though resilience had a statistically significant and positive effect on enrichment [68]. In addition, although resilience positively impacted balance satisfaction, its effect was not mediated by enrichment due to a lack of statistical significance in the resilience-enrichment association [69].

3.3. Resilience and work-life balance relationship

Resilience was positively correlated with work-life balance and, more specifically, with work-family balance [49, 69, 73, 79, 80]. For instance, among family medicine program directors, resilience was positively associated with having a moderate to great amount of

personal time, healthy work-life balance, and capability to stop thinking about work [79].

A number of studies determined that resilience enabled employees to reach a good work-life balance. For example, a qualitative study, which was conducted on a sample of first-line nurse managers, revealed that resilience promoted the individual's ability to balance the work and life areas [81]. Accordingly, two quantitative studies demonstrated that after taking part in resiliency development programs, participants reported greater satisfaction with their work-life balance [82, 83].

However, qualitative studies supported that work-life balance facilitated the development of resilience against workplace adversities among healthcare professionals [84–86]. The role of a positive work-life balance in increasing resilience was also confirmed by research on school staff [87, 88]. For instance, teachers identified work-life balance as an important strategy to improve resilience [87]. Nevertheless, school staff perceived that the achievement of a good work-life balance was, simultaneously, both a challenge and a potential stressor [88]. Thus, the difficulties that they were facing in reaching a good work-life balance might hinder the development of their resilience [88]. Then, work-life imbalance can be considered as a job-related stressor whose negative effects on workers' health may be buffered by resilience [80]. Resilience may also reduce employees' psychological and physical ill-health both directly and indirectly, by improving their work-life balance [80]. Similarly, Krisor et al. [73] recognized resilience as a statistically significant and positive antecedent of work-life balance, even though this latter was not, in turn, significantly related to distress (which was measured using cortisol levels). Similarly, a cross-lagged study revealed that PsyCap, which included resilience as its component, enhanced healthcare professionals' work-life balance that was assessed five months later [49].

The good news is that the individual's ability to reach a positive work-life balance may be strengthened by improving employees' resilience through specific resilience-based training as confirmed by two studies [82, 83]. The first research article showed that participants in a multi-faceted seven-week resilience promotion program for adults reported greater satisfaction with their work-life balance in comparison with those in the control group at the completion of the program and five months later [82]. The second study, in which researchers implemented a one-year multifaceted program called Energy Lead-

ership Well-Being and Resiliency Program found that participants reported greater work-life balance scores at the end of the intervention in comparison with their own pre-intervention scores [83].

4. Discussion

This systematic review aimed to provide a state-of-the-art overview of the role of resilience in the work-life interface. This is to ensure a better understanding of how resilience may protect workers from work-life conflict, foster work-life enrichment, and facilitate a good work-life balance.

Taking together, the results from the 26 eligible papers [49, 61–73, 77–88] supported the relationships between resilience and work-life interface constructs. Resilience was analysed as antecedent [49, 61, 68, 69, 73, 80, 82, 83], moderator [65, 66, 72, 80], mediator [65, 71, 78] and outcome [63].

First, most studies adopted quantitative methods and focused on the relationship between resilience and work-family conflict, predominantly analysing resilience as an antecedent. To this regard, overall, resilience was negatively associated with work-life conflict [61–72], confirming its role of antecedent in relation to this type of conflict [61, 68, 69]. Conversely, the only quantitative study analysing resilience as an outcome showed that work-family conflict reduced career resilience [63]. Regarding its mediating/moderating role, the results are varied probably because resilience was differently conceptualized (e.g., *Psychap*, career resilience) and work-family conflict was diversely treated in the mediation models (i.e., antecedent, outcome). Considering its moderating role, resilience protected workers from work-life conflict even in presence of job demands [66, 72]. However, resilience did not buffer the relationships between work-family conflict and health outcomes [65]. Concerning its mediating role, on one side, family-work conflict reduced resilience which, in turn, resulted in negative health outcomes [65]. On the other side, resilience mediated the links between job demands and work-life conflict, reducing this kind of conflict [71].

Second, we obtained mixed results regarding the role of resilience as an antecedent of work-family enrichment, although the positive correlation between these two was constantly confirmed [68–70].

Third, overall resilience positively correlated with work-life balance [49, 69, 73, 79, 80]. A positive work-life balance promoted resilience [84–88] and

vice versa [49, 73, 80–83]. Moreover, resilience buffered the impact of a poor work-life balance on employees' health outcomes [80].

To interpret these findings, we decided to discuss them in light of the COR theory [52, 89, 90] because most selected studies employed it as a theoretical basis. The COR theory is considered the most commonly used theory in the work-family domains interaction literature [91]. It assumes that people strive to acquire, retain, and protect resources they centrally value and experience stress when these resources are threatened with loss or actually lost [92]. Then, work-life conflict is a stressful event as it leads workers to lose resources when juggling both work and other personal life roles. This may result in a negative "state of being" [93], as confirmed by included studies [62, 64, 65, 68]. For instance, when an employee has to stay late at work at the expense of one's own family life, he/she may lose resources in the form of time with loved ones, and family stability. This may also lead his/her partner to develop negative emotional displays which, in turn, may reduce the employee's career resilience [63].

This loss of resources engenders a sense of conflict which, then, leads to distress [64, 68]. When facing the consequences of work-life conflict, workers need to invest further resources to recover from resource losses. If workers are unsuccessful in their coping efforts, they may further exacerbate their losses, entering an escalating spiral of losses [94]. In such a situation, employees may lack the energy to maintain their normal functioning at work. Thus, they may act to preserve their remaining resources by developing withdrawal intentions [61]. Additionally, negative health outcomes, such as burnout [62, 64] and depression [65, 77], may occur. This is more likely to happen when employees possess lower resilience as they are less equipped against resource loss [94]. Thus, differences in resilience might explain individual differences in the risk of experiencing work-life conflict [70]. Indeed, employees with low resilience may more quickly pass from work-life conflict to distress [70]. Conversely, employees with high resilience are less likely to experience work-life conflict and less vulnerable to its detrimental effects as they are better-equipped to manage work and family demands [61, 67–69]. As such, resilience represents a personal coping resource as it helps employees successfully fulfil multiple roles by flexibly adapting themselves to changing circumstances [34]. This might explain why resilience may protect employees against work-life conflict [72], including work-family conflict

[66]. This might also explain why resilience may buffer the negative effects of work-life imbalance on employees' health [80]. Additionally, although job-related stressors may impair employees' resilience, this resource may maintain its protective role [71]. However, in contrast with all the other studies, Yu [78] found that career resilience increased work-family interference. A possible explanation might be that highly career resilient employees might devote extra time and efforts to their own job, which might be unlikely compatible with family role expectations. Moreover, resilient employees possess rich reservoirs of resources from which they can draw upon in case of need. Thus, they are better positioned for resource gains, given their tendency towards the accumulation of resources over time and then towards resource caravans [94]. Thus, resources are linked to each other, such that they are co-travellers [94]. Given that resilience travels in packs, its protective role may be fostered by the presence of other personal resources, so that the greater the available resources, the greater the worker's capability of facing stressors. Indeed, PsyCap may be negatively related to withdrawal behaviours directly and via family-work conflict [61]. Additionally, drawing on the COR theory [52], multiple role memberships may provide resilient workers with the opportunity to acquire further resources. Thus, resource gains in one role may improve the quality of life in another role, leading to work-life enrichment. Indeed, resilient workers may have a resource pool to draw upon stemmed from the work role that can benefit their family life (or vice versa). Accordingly, resilience was positively related to both work-family enrichment [68–70] and work-life balance [49, 73, 79, 81–83]. Additionally, achieving a good work-life balance allow workers to acquire further resources, including resilience [84–88].

Overall, this systematic review provides support for the role of resilience as a personal coping resource which is particularly salient in relation to work-life interface.

5. Strengths and limitations

The present review has a number of strengths. To the best of our knowledge, this is the first systematic review focusing on the relationships between resilience and work-life interface constructs among employees from different sectors. Moreover, given that no date publication limits were set, the current

review provides an up-to-date and comprehensive overview of all relevant peer-reviewed (both quantitative and qualitative) studies on this subject. These studies were conducted in several countries and available through most commonly used databases within the psychological field.

Despite the contributions made, the current systematic review is not without limitations. Most included studies adopted a cross-sectional design, and this makes it difficult to draw conclusions based on causal inferences. Thus, there is a need to enrich these findings with longitudinal and experimental studies (e.g., examining the impact of resilience on work-life interference over time). The majority of the included studies merely relied on one source of information for data gathering (i.e., self-reported measures), which might have contributed to common methods bias. Then, future studies should use multi-source ratings for data collection. In addition, as the literature on the relationship between resilience and work-life enrichment is still very poor, further research is needed to shed more light on this association. Given the contrasting results regarding the effects of career resilience on work-life interface constructs [63, 78], future studies should analyse conditions under which high career resilience levels might undermine or otherwise facilitate employees' work-life interface. Furthermore, we included peer-reviewed empirical papers written in English only. This choice might have excluded valuable findings from other sources (e.g., books, conference abstracts or dissertations). However, we are confident that we have identified the key empirical works through our screening process. Moreover, since resilience has been studied in different roles (i.e., antecedent, mediator, moderator and outcome) with regards to work-life interface constructs, the authors of this review could not provide a single theoretical model based on the findings from the selected studies. Therefore, further research is needed to better clarify which preferential role might be played by resilience in relation to the three work-life interface facets (i.e., conflict, enrichment, balance), possibly examining them together as they can co-exist [6]. Additionally, besides the differential role in which resilience has been tested, the studies included in this systematic review were also different in terms of aims and research designs. This heterogeneity did not allow the authors to provide a quantitative integration of the results. We hope that this systematic review will provide a starting point for performing a meta-analysis in the future. Additionally, most of the included stud-

ies were not theoretically grounded. Thereby, future studies could adopt COR theory [52] as a theoretical framework because, as shown by the current review, it may be particularly useful for explaining how resilience may promote work-life interface constructs.

6. Practical implications

Since the present systematic review shows that resilience can help employees reconcile work and life and protect them from the detrimental effects of work-life imbalance, organizations should adopt interventions focused on the enhancement of this resource, such as resilience-based programs [82, 83]. Included resilience-based research-intervention studies [82, 83] provide lessons on how to design useful interventions. The success of such programs might be due to the fact that they employ a combination of actions that operate at different levels, last at least several weeks and foster the creation of a sense of community among participants.

To prevent the loss of resilience, companies could create a family-friendly work environment to make their employees more resilient. For instance, organizations could allow flexible start/finish working time and part-time contracts, offer an on-site childcare facility, and allow employees to take time off to meet family emergencies (e.g., to pick up children from school when they are unwell).

7. Conclusion

Through this systematic review, we unveiled what is currently known about the role of resilience in relation to the three main work-life interface constructs (i.e., conflict, enrichment, balance). Most of the included studies were quantitative in nature and analysed the association between resilience and work-family conflict showing that this personal characteristic was negatively associated to this type of conflict. Moreover, research constantly found that resilience facilitated the achievement of a good work-life balance, while only a few studies concentrated on the relationship between resilience and work-life enrichment, revealing a positive correlation between these two constructs. Thus, more research is needed to reach a better understanding of this latter association. In sum, we identified resilience as an important personal coping resource which can protect employees

from work-life conflict, foster work-life enrichment and facilitate balance between work and other life domains. To conclude, we believe that the current systematic review provides an important basis from which researchers can design further studies that can expand our knowledge of the mechanisms and conditions under which resilience may affect the ability to successfully balance work and personal life.

Funding

This study received no specific funding from public, commercial, or not-for-profit funding agencies.

Conflict of interest

None to report.

Acknowledgments

The authors gratefully acknowledge Dr. Marina Maffoni (Psychology Unit of Montescano Institute) for her valuable support and suggestions.

References

- [1] Greenhouse JH, Collins KM, Shaw JD. The relation between work-family balance and quality of life. *J Vocat Behav.* 2003;63(3):510–31.
- [2] Marks NF. Caregiving across the lifespan: National prevalence and predictors. *Fam Relat.* 1996;45(1):27–36.
- [3] European Foundation for the Improvement of Living and Working Conditions (Eurofound). Luxembourg: Publications Office of the European Union; 2013 [updated 2014 Feb 12; cited 2020 Jun 10]. Available from https://www.eurofound.europa.eu/sites/default/files/ef_publication/field_ef_document/ef1364en.pdf
- [4] European Foundation for the Improvement of Living and Working Conditions (Eurofound). Luxembourg: Publications Office of the European Union; 2017 [updated 2018 Jul 12; cited 2020 Jun 10]. Available from: https://www.eurofound.europa.eu/sites/default/files/ef_publication/field_ef_document/ef1733en.pdf
- [5] Bansal N, Agarwal UA. Examining the Relationships Among Work–Life Constructs: A Review. *Bus Perspect Res.* 2020;8(2):257–71.
- [6] Hill EJ, Erickson JJ, Holmes EK, Ferris M. Workplace flexibility, work hours, and work-life conflict: finding an extra day or two. *J Fam Psychol.* 2010;24(3):349–58.
- [7] Frone MR, Yardley JK, Markel KS. Developing and testing an integrative model of the work–family interface. *J Vocat Behav.* 1997;50(2):145–67.
- [8] Matthews RA, Wayne JH, Ford MT. A work–family conflict/subjective well-being process model: A test of competing theories of longitudinal effects. *J Appl Psychol.* 2014;99(6):1173–87.
- [9] Ekmekci OT, Metin Camgoz S, Bayhan Karapinar P. Path to Well-being: Moderated Mediation Model of Perfectionism, Family–Work Conflict, and Gender. *J Fam Issues.* 2021;42(8):1852–79.
- [10] Vieira JM, Matias M, Lopez FG, Matos PM. Relationships between work-family dynamics and parenting experiences: a dyadic analysis of dual-earner couples. *Work Stress.* 2016;30(3):243–61.
- [11] Mache S, Bernburg M, Groneberg DA, Klapp BF, Danzer G. Work family conflict in its relations to perceived working situation and work engagement. *Work.* 2016;53(4):859–69.
- [12] An J, Liu Y, Sun Y, Liu C. Impact of Work–Family Conflict, Job Stress and Job Satisfaction on Seafarer Performance. *Int J of Environ Res Public Health.* 2020;17(7):2191.
- [13] Dugan AG, Barnes-Farrell JL, Fortinsky RH, Cherniack MG. Acquired and Persistent Eldercare Demands: Impact on Worker Well-Being. *J Appl Gerontol.* 2020;39(4):357–67.
- [14] Zedeck S, Mosier KL. Work in the family and employing organization. *Am Psychol.* 1990;45(2):240–51.
- [15] Lawson KM, Davis KD, Crouter AC, O’Neill JW. Understanding Work-Family Spillover in Hotel Managers. *Int J Hosp Manag.* 2013;33:273–81.
- [16] Greenhaus JH, Beutell N. Sources of conflict between work and family roles. *Acad Manage Rev.* 1985;10(1):76–88.
- [17] Greenhaus JH, Powell GN. When work and family are allies: A theory of work-family enrichment. *Acad Manage Rev.* 2006;31(1):72–92.
- [18] Grzywacz JG, Marks NF. Reconceptualizing the work–family interface: An ecological perspective on the correlates of positive and negative spillover between work and family. *J Occup Health Psychol.* 2000;5(1):111–26.
- [19] Chan XW, Kalliath P, Chan C, Kalliath T. How does family support facilitate job satisfaction? Investigating the chain mediating effects of work–family enrichment and job-related well-being. *Stress Health.* 2019;36(1):97–104.
- [20] McNall LA, Scott LD, Nicklin JM. Do positive affectivity and boundary preferences matter for work–family enrichment? A study of human service workers. *J Occup Health Psychol.* 2015;20(1):93–104.
- [21] Koekemoer E, Olckers C, Nel C. Work–family enrichment, job satisfaction, and work engagement: The mediating role of subjective career success. *Aust J Psychol.* 2020;72:347–58.
- [22] Carlson DS, Thompson MJ, Crawford WS, Kacmar, KM. Spillover and crossover of work resources: A test of the positive flow of resources through work–family enrichment. *J Organ Behav.* 2019;40(6):709–22.
- [23] Organisation for Economic Cooperation and Development (OECD). Paris: OECD Publishing;2020 [updated 2020 Mar 09; cited 2020 June 08]. Available from: <https://doi.org/10.1787/9870c393-en>
- [24] Keeney J, Boyd EM, Sinha R, Westring AF, Ryan AM. From “work–family” to “work–life”: Broadening our conceptualization and measurement. *J Vocat Behav.* 2013;82(3):221–37.

- [25] Grzywacz JG, Carlson DS. Conceptualizing work—family balance: Implications for practice and research. *Adv Dev Hum Resour.* 2007;9(4):455-71.
- [26] Choi E, Kim J. The association between work–life balance and health status among Korean workers. *Work.* 2017;58(4):509-17.
- [27] Barnett MD, Martin KJ, Garza CJ. Satisfaction with work–family balance mediates the relationship between workplace social support and depression among hospice nurses. *J Nurs Scholarship.* 2019;51(2):187-94.
- [28] Pecino V, Mañas-Rodríguez MÁ, Díaz-Fúnez PA, Aguilar-Parra JM, Padilla-Góngora D, López-Liria R. Interpersonal justice climate, extra-role performance and work family balance: A multilevel mediation model of employee well-being. *PLoS one.* 2018;13(11):e0207458.
- [29] Carlson DS, Grzywacz JG, Zivnuska S. Is work-family balance more than conflict and enrichment? *Hum Relat.* 2009;62(10):1459-86.
- [30] Allen TD, Johnson RC, Saboe KN, Cho E, Dumani S, Evans S. Dispositional variables and work-family conflict: a meta-analysis. *J Vocat Behav.* 2012;80(1):17-26.
- [31] Michel JS, Clark MA. Has it been affect all along? A test of work-to-family and family-to-work models of conflict, enrichment, and satisfaction. *Pers Individ Differ.* 2009;47(3):163-68.
- [32] Weinzimmer LG, Baumann HM, Gullifor D, Koubova V. Emotional intelligence and job performance: The mediating role of work-family balance. *J Soc Psychol.* 2017;157(3):322-37.
- [33] Luthans F, Youssef CM, Avolio BJ. *Psychological capital: Developing the human competitive edge.* New York, NY: Oxford University Press, 2007.
- [34] Bryan C, O'Shea D, MacIntyre T. Stressing the relevance of resilience: A systematic review of resilience across the domains of sport and work. *Int Rev Sport and Exerc Psychol.* 2019;12(1):70-111.
- [35] Foster K, Roche M, Giandinoto JA, Furness T. Workplace stressors, psychological well-being, resilience, and caring behaviours of mental health nurses: A descriptive correlational study. *Int J Ment Health Nurs.* 2020;29(1):56-68.
- [36] Harker R, Pidgeon AM, Klaassen F, King S. Exploring resilience and mindfulness as preventative factors for psychological distress burnout and secondary traumatic stress among human service professionals. *Work.* 2016;54(3):631-7.
- [37] Maffoni M, Sommovigo V, Giardini A, Paolucci S, Setti I. Dealing with ethical issues in rehabilitation medicine: The relationship between managerial support and emotional exhaustion is mediated by moral distress and enhanced by positive affectivity and resilience. *J Nurs Manage.* 2020;28(5):1114-25.
- [38] Jung HS, Baek E. A structural equation model analysis of the effects of emotional labor and job stress on depression among nurses with long working hours: Focusing on the mediating effects of resilience and social support. *Work.* 2020;66(3):1-8.
- [39] Hou J, He Y, Zhao X, Thai J, Fan M, Feng Y, Huang L. The effects of job satisfaction and psychological resilience on job performance among residents of the standardized residency training: a nationwide study in China. *Psychol Health Med.* 2020;25(9):1106-18.
- [40] Smith KJ, Emerson DJ, Boster CR, Everly Jr GS. Resilience as a coping strategy for reducing auditor turnover intentions. *Account Res J.* 2020;33(3):483-98.
- [41] Mishra P, McDonald K. Career resilience: An integrated review of the empirical literature. *Hum Resour Dev Rev.* 2017;16(3):207-34.
- [42] Chitra T, Karunanidhi S. The Impact of Resilience Training on Occupational Stress, Resilience, Job Satisfaction, and Psychological Well-being of Female Police Officers. *J Police and Crim Psychol.* 2021;36:8-23.
- [43] Robertson IT, Cooper CL, Sarkar M, Curran T. Resilience training in the workplace from 2003 to 2014: A systematic review. *J Occup Organ Psychol.* 2015;88(3):533-62.
- [44] Luthans F, Avey JB, Avolio BJ, Noramn SM, Combs GJ. Psychological capital development: Toward a micro-intervention. *J Organ Behav.* 2006;27(3):387-93.
- [45] Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Med.* 2009;6(7):e1000097.
- [46] Braunstein-Bercovitz H, Frish-Burstein S, Benjamin BA. The role of personal resources in work–family conflict: Implications for young mothers' well-being. *J Vocat Behav.* 2012;80(2):317-25.
- [47] Clough BA, Ireland MJ, Leane S, March S. Stressors and protective factors among regional and metropolitan Australian medical doctors: A mixed methods investigation. *J Clin Psychol.* 2020;76(7):1362-89.
- [48] Siu OL, Hui CH, Phillips DR, Lin L, Wong TW, Shi K. A study of resiliency among Chinese health care workers: Capacity to cope with workplace stress. *J Res Pers.* 2009;43(5):770-6.
- [49] Siu OL. Psychological capital, work well-being, and work-life balance among Chinese employees. *J Pers Psychol.* 2013;12(4):170-81.
- [50] Hong QN, Pluye P, Fábregues S, Bartlett G, Boardman F, Cargo M, Dagenais P, Gagnon MP, Griffiths F, Nicolau B, O' Cathain A, Rousseau MC, Vedel I. Mixed methods appraisal tool (MMAT), version 2018. Registration of Copyright (#1148552), Canadian Intellectual Property Office, Industry of Canada; 2018. [updated 2018 Aug 1; cited 2021 Oct 26] Available from: <http://mixedmethodsappraisaltoolpublic.pbworks.com/>
- [51] Charalampous M, Grant CA, Tramontano C, Michailidis E. Systematically reviewing remote e-workers' well-being at work: A multidimensional approach. *Europ J Work Organ Psychol.* 2019;28(1):51-73.
- [52] Hobfoll SE. Conservation of resources: A new attempt at conceptualizing stress. *Am Psychol.* 1989;44(3):513-24.
- [53] Bakker AB, Demerouti E. Job demands–resources theory. In: Cooper C, Chen P, editors. *Wellbeing: A complete reference guide.* Chichester, UK: Wiley-Blackwell; 2014 pp. 37-64.
- [54] Katz D, Kahn RL. *The Social Psychology of Organisations.* New York, NY: Wiley; 1978.
- [55] Fredrickson BL. The broaden–and–build theory of positive emotions. *Philos Trans R Soc of Lond B Biol Sci.* 2004;359(1449):1367-78.
- [56] Lazarus RS, Folkman S. *Stress, appraisal, and coping.* New York: Springer publishing company; 1984.
- [57] Edwards JR, Rothbard NP. Mechanisms linking work and family: clarifying the relationship between work and family constructs. *Acad Manage Rev.* 2000;25(1):178–99.
- [58] Bolger N, Zuckerman A. A framework for studying personality in the stress process. *J Pers Soc Psychol.* 1995;69(5):890-902.

- [59] Johnson JV, Hall EM. Job strain, work place social support and cardio-vascular disease: a cross-sectional study of a random sample of the Swedish population. *Am J Public Health*. 1988;78:1336-42.
- [60] Becker GS. A Theory of the Allocation of Time. *The Economic Journal*. 1965;75(299):493-517.
- [61] Karatepe OM, Karadas G. The effect of psychological capital on conflicts in the work-family interface, turnover and absence intentions. *Int J Hosp Manag*. 2014;43:132-43.
- [62] Bande B, Fernández-Ferrín P, Varela JA, Jaramillo F. Emotions and salesperson propensity to leave: The effects of emotional intelligence and resilience. *Ind Market Manag*. 2015;44:142-53.
- [63] Green SG, Bull Schaefer RA, MacDermid SM, Weiss HM. Partner reactions to work-to-family conflict: Cognitive appraisal and indirect crossover in couples. *J Manage*. 2011;37(3):744-69.
- [64] Griffin JD, Sun IY. Do work-family conflict and resiliency mediate police stress and burnout: A study of state police officers. *Am J Crim Justice*. 2018;43(2):354-70.
- [65] Hao J, Wu D, Liu L, Li X, Wu H. Association between work-family conflict and depressive symptoms among Chinese female nurses: The mediating and moderating role of psychological capital. *Int J Environ Res Public Health*. 2015;12(6):6682-99.
- [66] Mache S, Bernburg M, Vitzthum K, Groneberg DA, Klapp BF, Danzer G. Managing work-family conflict in the medical profession: working conditions and individual resources as related factors. *BMJ Open*. 2015;5(4):e006871.
- [67] Dodson KM, Appelbaum NP, Lee N, Amendola M, Kaplan B. Otolaryngology Resident Well-Being and Perceptions of the Clinical Learning Environment. *Ear, Nose & Throat J*. 2019;98(7):409-15.
- [68] Nicklin JM, Meachon EJ, McNall LA. Balancing work, school, and personal life among graduate students: A positive psychology approach. *Appl Res Qual Life*. 2019;14(5):1265-86.
- [69] Wayne JH, Matthews R, Crawford W, Casper WJ. Predictors and processes of satisfaction with work-family balance: Examining the role of personal, work, and family resources and conflict and enrichment. *Hum Resour Manage*. 2020;59(1):25-42.
- [70] Mazerolle SM, Eason CM, Goodman A. An examination of relationships among resiliency, hardiness, affectivity, and work-life balance in collegiate athletic trainers. *J Athl Train*. 2018;53(8):788-95.
- [71] Viotti S, Arnetz JE, Converso D. Does bullying affect work-to-private-life interference? Testing the mediating role of resilience. *J Aggress Maltreat Trauma*. 2018;27(4):409-24.
- [72] Martinez-Corts I, Demerouti E, Bakker AB, Boz M. Spillover of interpersonal conflicts from work into non-work: A daily diary study. *J Occup Health Psychol*. 2015;20(3):326-37.
- [73] Krisor SM, Diebig M, Rowold J. Is cortisol as a biomarker of stress influenced by the interplay of work-family conflict, work-family balance and resilience? *Pers Rev*. 2015;44(4):648-61.
- [74] Raja U, Javed Y, Abbas M. A time lagged study of burnout as a mediator in the relationship between workplace bullying and work-family conflict. *Int J Stress Manag*. 2018;25(4):377-90.
- [75] Nielsen MB, Nielsen GH, Notelaers G, Einarsen S. Workplace bullying and suicidal ideation: A 3-wave longitudinal Norwegian study. *Am J Public Health*. 2015;105(11):e23-e28.
- [76] Romeo L, Balducci C, Quintarelli E, Riolfi A, Pelizza L, Serpelloni A. et al. MMPI-2 personality profiles and suicidal ideation and behavior in victims of bullying at work: a follow-up study. *Violence Victims*. 2013;28(6):1000-14.
- [77] Hourani LL, Williams J, Lattimore PK, Morgan JK, Hopkinson SG, Jenkins L, Cartwright J. Workplace victimization risk and protective factors for suicidal behavior among active duty military personnel. *J Affect Disorders*. 2018;236:45-51.
- [78] Yu K. Better and worse: A dual-process model of the relationship between core self-evaluation and work-family conflict. *Front Psychol*. 2016;7:1579.
- [79] Porter M, Hagan H, Klassen R, Yang Y, Seehusen D, Carek P. Burnout and resiliency among family medicine program directors. *Fam Med*. 2018;50(2):106-12.
- [80] Johnson SJ, Willis SM, Evans J. An examination of stressors, strain, and resilience in academic and non-academic UK university job roles. *Int J Stress Manag*. 2019;26(2):162-72.
- [81] Kim M, Windsor C. Resilience and work-life balance in first-line nurse manager. *Asian Nurs Res*. 2015;9(1):21-7.
- [82] Lioussis PL, Shochet IM, Milllear PM, Biggs H. The Promoting Adult Resilience (PAR) program: The effectiveness of the second, shorter pilot of a workplace prevention program. *Behav Change*. 2009;26(2):97-112.
- [83] Riall TS, Teiman J, Chang M, Cole D, Leighn T, McClafferty H, Nfonsam VN. Maintaining the fire but avoiding burnout: implementation and evaluation of a resident well-being program. *J Am Coll Surg*. 2018;226(4):369-79.
- [84] Cameron F, Brownie S. Enhancing resilience in registered aged care nurses. *Australas J Ageing*. 2010;29(2):66-71.
- [85] Cheshire A, Ridge D, Hughes J, Peters D, Panagioti M, Simon C, Lewith G. Influences on GP coping and resilience: a qualitative study in primary care. *Br J Gen Pract*. 2017;67(659):e428-e436.
- [86] Zwink JE, Dzialo M, Fink RM, Oman KS, Shiskowsky K, Waite K, et al. Nurse manager perceptions of role satisfaction and retention at an academic medical center. *JONA: J Nurs Adm*. 2013;43(3):135-41.
- [87] Kutsyruba B, Walker KD, Stasel RS, Al Makhameh M. Developing resilience and promoting well-being in early career teaching: advice from the Canadian beginning teachers. *Can J Educ*. 2019;42(1):285-321.
- [88] Day C, Hong J. Influences on the capacities for emotional resilience of teachers in schools serving disadvantaged urban communities: Challenges of living on the edge. *Teach Teach Educ*. 2016;59:115-25.
- [89] Hobfoll SE. *The ecology of stress*. Washington, DC: Hemisphere Publishing; 1988.
- [90] Hobfoll SE. The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Appl Psychol*. 2001;50(3):337-421.
- [91] Van Steenberghe EF, Ellemers N, Mooijaart A. How work and family can facilitate each other: Distinct types of work-family facilitation and outcomes for women and men. *J Occup Health Psychol*. 2007;12(3):279-300.
- [92] Hobfoll SE, Shirom A. Conservation of resources theory: Applications to stress and management in the workplace. In: Golembiewski RT, editor. *Handbook of organizational behavior*. New York: Marcel Dekker; 2001. pp. 57-80.
- [93] Grandey AA, Cropanzano R. The Conservation of Resources Model Applied to Work-Family Conflict and Strain. *J Vocat Behav*. 1999;54(2):350-70.

- [94] Hobfoll SE, Halbesleben J, Neveu JP, Westman M. Conservation of resources in the organizational context: The reality of resources and their consequences. *Annu Rev Organ Psychol Organ Behav*. 2018;5:103-28.
- [95] Hobfoll SE, Stevens NR, Zalta AK. Expanding the science of resilience: Conserving resources in the aid of adaptation. *Psychol Inq*. 2015;26(2):174-80.
- [96] Sommovigo V, Setti I, Argentero P. The role of service providers' resilience in buffering the negative impact of customer incivility on service recovery performance. *Sustainability*. 2019;11(1):285.
- [97] Smith BW, Dalen J, Wiggins K, Tooley E, Christopher P, Bernard J. The brief resilience scale: assessing the ability to bounce back. *Int J Behav Med*. 2008;15(3):194-200.
- [98] Netemeyer RG, Brashear-Alejandro T, Boles JS. A cross-national model of job-related outcomes of work role and family role variables: A retail sales context. *J Acad Mark Sci*. 2004;32(1):49-60.
- [99] Sullivan MC, Yeo H, Roman SA, Bell Jr RH, Sosa JA. Striving for work-life balance: effect of marriage and children on the experience of 4402 US general surgery residents. *Ann Surg*. 2013;257(3):571-6.
- [100] Carson KD, Bedeian AG. Construction of a measure and examination of its psychometric properties. *J Vocat Behav*. 1994;44(3):237-62.
- [101] Netemeyer RG, Boles JS, McMurrian R. Development and validation of work-family conflict and family-work conflict scales. *J Appl Psychol*. 1996;81(4):400-10.
- [102] Bartone P. Test-retest reliability of the dispositional resilience scale-15, a brief hardiness scale. *Psychol Rep*. 2007;101(3):943-4.
- [103] Faragher EB, Cooper CL, Cartwright S. A shortened stress evaluation tool (ASSET). *Stress Health*. 2004;20(4):189-201.
- [104] Schumacher J, Leppert K, Gunzelmann T, Strauß B, Brähler E. Die Resilienzskala – Ein Fragebogen zur Erfassung der psychischen Widerstandsfähigkeit als Persönlichkeitsmerkmal. *Z Klin Psychol Psychiatr und Psychother*. 2005;53(1):16-39.
- [105] Wagnild GM, Young HM. Development and psychometric evaluation of the resilience scale. *J Nurs Meas*. 1993;1(2):165-78.
- [106] Seiger CP, Wiese BS. Social support from work and family domains as an antecedent or moderator of work-family conflicts? *J Vocat Behav*. 2009;75(1):26-37.
- [107] Carlson DS, Frone MR. Relation of behavioral and psychological involvement to a new four-factor conceptualization of work-family interference. *J Bus Psychol*. 2003;17(4):515-35.
- [108] Clarke MC, Koch LC, Hill EJ. The work-family interface: Differentiating balance and fit. *Fam Consum Sci Res J*. 2004;33(2):121-40.
- [109] Sinclair VG, Wallston KA. The development and psychometric evaluation of the Brief Resilient Coping Scale. *Assessment*. 2004;11(1):94-101.
- [110] Carlson DS, Kacmar MK, Williams LJ. Construction and initial validation of a multidimensional measure of work-family conflict. *J Vocat Behav*. 2000;56(2):249-76.
- [111] Kacmar KM, Crawford WS, Carlson DS, Ferguson M, Whitten D. A short and valid measure of work-family enrichment. *J Occup Health Psychol*. 2014;19(1):32-45.
- [112] Connor KM, Davidson JR. Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depress Anxiety*. 2003;18(2):76-82.
- [113] Cheng BH, McCarthy JM. Managing work, family, and school roles: Disengagement strategies can help and hinder. *J Occup Health Psychol*. 2013;18(3):241-51.
- [114] Siu OL, Phillips DR. Study of stress among staff in MTRCL. 2005. Unpublished Report, MTRCL.
- [115] Di Sipio A, Falco A, Kravina L, De Carlo NA. Positive personal resources and organizational well-being: Resilience, hope, optimism, and self-efficacy in an Italian health care setting. *TPM: Testing, Psychometrics, Methodology. Appl Psychol*. 2012;19(2):81-95.
- [116] Campbell-Sills L, Stein MB. Psychometric analysis and refinement of the Connor-Davidson resilience scale (CD-RISC): Validation of a 10-item measure of resilience. *J Trauma Stress*. 2007;20(6):1019-28.
- [117] Geurts SA, Taris TW, Kompier MA, Dikkers JS, Van Hooff ML, Kinnunen UM. Work-home interaction from a work psychological perspective: Development and validation of a new questionnaire, the SWING. *Work Stress*. 2005;19(4):319-39.
- [118] Carlson DS, Kacmar K, Wayne J, Grzywacz JG. Measuring the positive side of the work-family interface: Development and validation of a work-family enrichment scale. *J Vocat Behav*. 2006;68(1):131-64.
- [119] Valcour M. Work-based resources as moderators of the relationship between hours and satisfaction with work-family balance. *J Appl Psychol*. 2007;92(6):1512-23.
- [120] Noe RA, Noe AW, Bachhuber JA. An investigation of the correlates of career motivation. *J Vocat Behav*. 1990;37(3):340-56.