



A research agenda for occupational safety, health, & well-being in hospitality & tourism management

Katherine Ciarlante ^{a,1}, Cynthia Mejia ^{b,2,*}, Emily Broker ^b

^a Department of Psychology, University of Central Florida, 4111 Pictor Lane, Orlando, FL 32816, USA

^b Rosen College of Hospitality Management, University of Central Florida, 9907 Universal Boulevard, Orlando, FL 32819, USA

ARTICLE INFO

Keywords:

Occupational safety & health
Frontline Service Workers (FLSW)
Content analysis
Interdisciplinary research
Well-being
Research framework

ABSTRACT

With the exception of the most recent years following the global pandemic, hospitality and tourism-related research specifically examining worker safety, health, and well-being has not been a topic at the forefront in the discipline. Pre-pandemic studies investigating worker well-being frequently used dependent variables such as job satisfaction, turnover intention, and organizational commitment as proxies. The purpose of this research was to identify the gaps in occupational safety, health, and well-being priorities within the contemporary hospitality and tourism and adjacent literature. Utilizing a content analysis of 531 academic journal articles reduced from 4170 originally mined, 11,109 coded segments formed 9 clusters in which 3 overarching themes emerged. Based on the emergent themes, an interdisciplinary research framework adapted from Sorensen et al. (2016) and Peters et al. (2020) is proposed to improve the design and inclusion of occupational safety, health, and well-being constructs in future hospitality and tourism management research.

1. Introduction

A large proportion of frontline service jobs have historically been characterized as relatively low-wage positions, with unstable job security and a higher-than-average risk of worker exposure to health and safety hazards compared with most other sectors of the economy (Austin and Donley, 2023; Davahli et al., 2020; Mejia et al., 2021a and 2021b; Rosenberg, 2020). Researchers have identified that frontline hospitality and tourism job hazards include physical demands, chemical and biological exposures, lack of job permanence, time pressure, interpersonal conflict, sexual harassment, and psychosocial stressors from long and irregular work hours (e.g., Ayachit and Chitta, 2022; Hsieh et al., 2013; 2016; O'Neill and Davis, 2011; Sönmez et al., 2017; 2020; Zhang et al., 2020). Although industry and academic interest in the safety and health of frontline service workers (FLSWs) has amplified in response to the COVID-19 pandemic and its aftermath, insufficient urgency persists in prioritizing FLSW safety, health, and well-being in the hospitality and tourism (H&T) sector and associated research.

Improving aversive working conditions benefit not only FLSWs, but their organizations as well. For example, work-related injuries and illnesses are estimated to result in billions of dollars of direct and indirect

costs to H&T organizations (Adams, et al., 2020; Hsieh et al., 2013; Hsieh et al., 2023; Lippert, 2020) and by creating a work environment and organizational culture that promotes employee safety and health, H&T organizations can reduce costs related to injury, illness, and safety- and health-related litigation. This, in turn, increases competitive advantage over organizations that neglect to do so by investing in employee well-being (Fabius and Phares, 2021; Mejia et al., 2021a and 2021b; Sönmez et al., 2017). Additionally, significant disparities are found in occupational safety and health (OSH) outcomes among workers in the H&T industry. Indeed, those FLSWs who work in high-risk jobs are more likely to experience negative health impacts and are often members of vulnerable groups consisting of immigrant and low-wage workers (Rosenberg et al., 2021; Zhang et al., 2020). Thus, the economic importance of the H&T industry (Page and Connell, 2020), in combination with the disproportionate negative safety and health outcomes reported by its workforce (Arjona-Fuentes et al., 2019) makes understanding and improving the experiences of FLSWs essential for both the well-being of workers and the industry and economy at large.

Many occupational health studies in hospitality and tourism fail to account for the complex interplay of factors influencing occupational safety and health in the workplace. To evolve our understanding, a more

* Corresponding author.

E-mail addresses: Katherine.Ciarlante@ucf.edu (K. Ciarlante), Cynthia.Mejia@ucf.edu (C. Mejia), Emily.Broker@ucf.edu (E. Broker).

¹ ORC ID: 0000-0001-5952-0009

² ORC ID: 0000-0003-3824-6076

systematic approach must be taken to identify gaps and priorities for future research. Based on an existing conceptual model intended “to inform the design, implementation, and evaluation of integrated approaches to promoting and protecting worker health” (Sorensen et al., 2016, p. 188), the purpose of this research was to identify the gaps in occupational safety, health, and well-being priorities within the contemporary hospitality and tourism management (HTM) and HTM-adjacent literature. The objectives of this research were to: (1) Conduct a comprehensive content analysis of interdisciplinary literature with a focus on H&T occupational health; and (2) Based on the emergent themes from the analysis, propose an interdisciplinary research agenda to explore how a contemporary occupational safety and health perspective can promote the adoption of holistic and multi-level perspectives to the study of health, safety, and well-being among service workers in the H&T industry. By adopting a broader research framework around worker occupational health and well-being, HTM research can more effectively and deeply conceptualize the multiple pathways and specific mechanisms through which work influences health outcomes, health behaviors, and important H&T organizational outcomes. This enhanced understanding of processes impacting occupational health outcomes in the H&T industry can then be used in practice to improve service worker well-being through the design and implementation of targeted health and safety interventions, such as eliminating or controlling hazards, adapting organizational policies, practices, and programs, or engaging in healthy work design (Peters et al., 2020; Sorensen et al., 2016).

2. Literature review

The U.S. Occupational Safety and Health Act of 1970 established the Occupational Safety and Health Administration (OSHA) under the U.S. Department of Labor, and the National Institute for Occupational Safety and Health (NIOSH) within the U.S. Department of Health and Human Services. OSHA’s purpose is to ensure the safety and health of workers and to enforce a set of standards (OSHA, 2023), while the mission of NIOSH is to advance scientific research and education in the field of occupational safety, inclusive of worker well-being (D’Alessandro et al., 2021). Contemporary worker well-being research extends beyond subjective job evaluation constructs such as satisfaction, stress, and/or burnout (Ilies et al., 2015). In this study, worker well-being refers to the search for fulfillment of people’s psychological needs at work, stimulated by increasing concerns for quality of life (Ilies et al., 2015).

2.1. Occupational health research and Total Worker Health (TWH)

Interest in issues related to occupational safety and health has steadily risen in recent years in response to growing recognition of the significant individual and organizational costs associated with occupational injury and illnesses, along with the disparities found in occupational health outcomes across workers and industries (Lippert et al., 2020). As a result, NIOSH has promoted Total Worker Health (TWH) as a strategy for combining health advocacy and protection efforts to simultaneously promote the health and well-being of workers while preventing injury and illness (Tamers, 2020). Expanding on the traditional disciplines of occupational safety and health (e.g., occupational medicine, occupational health nursing, industrial hygiene) (Schill, 2017), TWH takes a multi-faceted approach to this research by concurrently considering a broader set of work and non-work factors which affect worker safety, health, and well-being, including workplace conditions and the organization of work (Feltner et al., 2016). Prioritizing a hazard-free environment for all workers (Tamers et al., 2019), TWH recognizes that the work environment can either mitigate or enhance threats to worker safety and health and argues for the effectiveness of intervention efforts and work design, that combine safety and health protection and promotion (Tamers, 2020). Integrated conceptual models based on TWH and other occupational health theories (see

Bradley et al., 2016; Dennerlein et al., 2020; Punnett et al., 2020; Schulte et al., 2015; Sorensen et al., 2016; 2021), have been introduced to steer research on the determinants of worker safety and health with regard to interventions (Sorensen et al., 2016). Specifically, researchers have used these models to develop and test safety- and health-related hypotheses and establish priorities regarding future occupational health research (Sabbath et al., 2018).

Rather than utilizing individual-level approaches to enhancing occupational health outcomes, which places the onus for improving well-being on the individual worker and their behavior, TWH posits that the most effective methods for improving worker safety and health involve organizational-level interventions. These primary prevention approaches include both (1) designing or modifying the work environment in ways that reduce hazards and promote well-being; and (2) recognizing how work in general is stressful by identifying the physical, organizational, and contextual factors that have the potential to influence safety and health at work (Tamers et al., 2019; Tamers, 2020). Researchers have distinguished issues relevant to safety, health, and well-being, which can be addressed via TWH, including those related to the prevention and control of hazards (e.g., biological/chemical agents, ergonomic risks, psychosocial factors), organization of work and the promotion of safe and healthy work (e.g., fatigue/burnout, stress prevention, work-life fit, job quality, safety culture /climate), organizational policies (e.g., information privacy, benefits/leave, healthcare, minimum guaranteed hours), technology (e.g., sensors/wearable technology, artificial technology), work arrangements (e.g., precarious and part-time employment, contract work, organizational restructuring), and new employment patterns (e.g., changing demographics, vulnerable workers, global workforce) (Schill, 2017; Tamers et al., 2019). Research-based evidence is increasing for the effectiveness of workplace health interventions that align with TWH principles (Anger et al., 2015; Change et al., 2021; Feltner et al., 2016; Hammer et al., 2021), and overall, this indicates the value of applying TWH principles to the study of occupational health issues across a wide range of industries and disciplines.

2.2. Occupational health and hospitality and tourism management (HTM) research

The unique nature of the hospitality and tourism (H&T) industry, including its demographic makeup, rising worker precarity, instability of wages, widespread use of non-standard work arrangements (Schneider and Harknett, 2019), and the complex interplay of factors influencing service worker safety, health, and well-being, indicates the need for a more systematic approach to the study of occupational health in the discipline. Although prior hospitality and tourism management (HTM) research has explored a number of safety- and health-related issues, including the impact of specific safety hazards and targeted health interventions, this area of research has been relatively limited in scope and siloed in nature. For example, Subramony and colleagues (2021) identified “emotional regulation and management” and “service stress and strain” as distinct clusters in their bibliometric review of FLSW research. While this research focused on topics such as emotional regulation, mistreatment/incipit, stress, and burnout as important for understanding FLSW safety and health, their findings revealed how HTM research in occupational health has been generally focused on a limited number of topics and subtopics (e.g. stress and well-being and emotional labor), while neglecting to study many others altogether. Occupational health research in the hospitality context has also tended to focus on guest-centric issues, such as food safety, rather than worker safety (Hu et al., 2021). Additionally, existing HTM health, safety, and well-being research has often focused on antecedents and outcomes of safety risks and hazards, without accounting for the broader contexts in which these risk factors exist. This includes inter-relationships between work conditions, employee characteristics, workplace policies, programs, and practices, and socio-political-economic trends, which

independently and collectively impact occupational health outcomes (Sorensen et al., 2016; 2020). While a narrower research approach does have significant value, for example, allowing researchers to identify the negative health effects which are attributable to specific occupational stressors (Lin et al., 2021), this same narrow approach has significant limitations in the absence of meaningful, relevant, and contemporary occupational health imperatives applied to HTM research and to the industry more extensively.

2.3. Shifting H&T research priorities in the aftermath of the pandemic

The COVID-19 pandemic produced new threats to the well-being of hospitality and tourism FLSWs, including those threats created by the direct risk of virus transmission to workers in addition to widespread furloughs and layoffs. The aftermath of the pandemic amplified existing social and health inequities, heightened by the lack of FLSWs' access to preventative healthcare (Benjamin et al., 2020). Health and safety measures enacted during the pandemic, such as lockdowns and travel restrictions, appear to have inflicted a greater socio-economic burden on vulnerable workers already enduring inequality (Bibby et al., 2020). For example, employees who were economically insecure pre-Covid and who lacked social safety nets, were and remain the most likely to be harmed by the disruptions in income and other benefits created by furloughs and long-term unemployment (Sonmez et al., 2020). Thus, the pandemic and its aftermath increased safety and health risks to hospitality and tourism FLSWs, while also bringing subsequent socioeconomic and health inequities affecting them into greater focus (Benjamin et al., 2020). This has created a critical and ongoing need for organizations and academics to prioritize an interdisciplinary understanding toward improving occupational health in the H&T industry.

Relatively emergent in HTM research, the socioeconomic imperative revealed in the pandemic's aftermath also indicates a need for research exploring specific factors affecting FLSW occupational health. Adams and colleagues (2020) specifically identified the need for more research to focus on factors beyond the typical and well-understood occupational exposures, including threats to worker health and safety in H&T, and the need for health, safety, and well-being interventions that target at-risk workers (Adams et al., 2020). These gaps demonstrate the significant value in applying a more robust and contemporary conceptual framework, which advances the literature and encourages interdisciplinary researchers to build knowledge around those specific factors, hazards and exposures, conditions of work, organizational policies, and processes impacting the health and safety outcomes of vulnerable FLSWs in the hospitality and tourism industry.

2.4. Proposing a contemporary occupational health-HTM research framework

In addition to these pressing needs, the H&T industry is further impacted by other Future of Work issues regarding work-related stress and health, including changing workforce demographics, work-life balance issues, rapid technological change, and globalization (Tamer et al., 2019). The pandemic and its aftermath have further exposed how the changing nature of H&T work on the front lines continues to play a role in the experiences of workers (Schulte et al., 2019). The dynamic and complex nature of these changes throughout the industry requires an updated and contemporary research framework which can respond more rapidly to ongoing and evolving workplaces, demographics, and employee-employer relationships (Sorensen et al., 2021). Despite major setbacks to the H&T industry recently, evidenced in the difficulties hiring and retaining workers in the wake of the pandemic (Liu-Lastres et al., 2023; Sönmez et al., 2020), the H&T industry is anticipated to continue its recovery and positive growth trajectory in the coming years (AHLA, 2023). Thus, the post-pandemic imperative to address the safety and health issues of H&T workers necessitates a greater understanding of the systems and factors that influence their work and work conditions

and how they can be designed or changed to improve well-being outcomes. These will become increasingly valuable moving forward for the sake of both workers and their organizations.

Given the broad landscape of past, present, and continued future threats to H&T worker safety, health, and well-being, and the extent to which an interdisciplinary occupational health and HTM approach to mitigation and interventions exist in the literature, this study addressed two research questions:

R1. What is the current state-of-the-art on well developed, designed, and executed H&T worker safety, health, and well-being research, which is grounded in occupational health theory?

R2. How can identified gaps in HTM and related research inform interdisciplinary researchers as to the future priorities for investigating contextual factors, worker and workplace factors, worker outcomes, and enterprise outcomes that advances an informed interdisciplinary research agenda?

3. Methodology

To assess the trajectory of the relationships between occupational safety, health, and well-being within H&T and H&T-adjacent research streams, a content analysis methodology was utilized to determine the extent to which occupational health and HTM research has been convergent in prior research. Employed in earlier hospitality and tourism studies (Park et al., 2023; Vasist and Krishnan, 2022), Krippendorff's (2019) six-component content analysis procedure was adopted for this research and included the following steps: (1) Unitizing; (2) Sampling; (3) Coding; (4) Data reduction; (5) Inference; and (6) Narration. In the *unitizing* step, a codebook was created *a priori* by the researchers involved in the study, which designated the coding context units. The *sampling* of the academic journal articles was subject to an iterative process of inclusion criteria and is described in greater detail below. The *coding* procedure, also described below, was accomplished through human intelligence through the use of qualitative software. Based on the frequencies of the codes within the codebook, the data clustered into themes, thus *reducing the data* into more manageable units. Based on Krippendorff's (2019) distinction between deductive, inductive, and abductive inference, the interpretation of results from this study closely followed *inferences* that were abductive in nature, characteristic of content analysis. Finally, in the *narration* step, the code frequencies and emergent themes were recorded and presented both in visual format and as narrative with identifiers.

3.1. Literature search and inclusion criteria

To be included in the content analysis, papers had to be focused on the hospitality and tourism industry. Second, we included only papers with an occupational safety and health (OSH) focus, which investigated at least one occupational safety and health topic. This OSH focus was established based on the list of topics and subtopics outlined below (e.g., stress and well-being, physical health, injury and illness, etc.; see Table 1) (Chari et al., 2018). Third, we only included papers that were primarily employee- or worker-focused, rather than customer-focused. For example, a study that focused exclusively on the well-being of customers or guests, and not that of workers, would not be included in the review. Fourth, we only included papers that were published in a select list of peer-reviewed journals. We focused our review on journal articles to align with previous arguments that academic journals are best for reviewing and evaluating prior research output (Yoo and Weber, 2005) and we identified top journals in hospitality and tourism, applied psychology, organizational behavior and human resources management, and other OSH related fields (e.g., environmental science and public health) based on SJR journal rankings. In total, we chose to include articles published in thirty academic journals representing multiple fields of study (see Appendix A). Finally, we only included articles where

Table 1

List of Possible Topics and Subtopics in Occupational Health and Safety (Adapted from Chari et al., 2018).

Main Topic	Subtopic(s)	Keywords
1. Stress & Well-being	occupational stress burnout & emotional exhaustion subjective well-being quality of work life chronic pain	job stress burnout emotional exhaustion well-being physical health pain
2. Physical Health	musculoskeletal disorders cardiovascular disease	musculoskeletal disorders cardiovascular disease
3. Mental & Emotional Health	mental health disorders mental exhaustion	mental health depression anxiety mental exhaustion
4. Injuries & Illness	injuries illness	accidents injuries illness
5. Safety	workplace safety safety climate	safety behavior safety motivation safety performance safety climate
6. Occupational Hazards and Exposures	environmental hazards exposure risk	physical hazards chemical hazards biological hazards
7. Psychosocial Stressors	job demands control and support role stressors workload	job demands job strain job control social support role stressors workload time pressure
8. Emotional Labor	emotion regulation deep and surface acting	emotional labor emotion regulation deep acting surface acting
9. Work and Nonwork Dynamics	work-non-work balance work-family interface	work-nonwork balance work-family conflict family-work conflict
10. Workplace Mistreatment	interpersonal mistreatment violence and aggression sexual harassment customer mistreatment	interpersonal mistreatment incivility bullying violence aggression sexual harassment customer mistreatment
11. Coping & Resilience	coping resilience post-traumatic growth and recovery	coping strategies resilience post-traumatic growth recovery
12. Occupational Health Interventions	health and wellness promotion programs stress management interventions	health behaviors wellness programs exercise programs stress management

the entirety of the text was available in English.

Articles were selected for inclusion in this study following a multiple step search and evaluation process that included published academic articles until December 2023. First, a broad search was completed in four popular online databases, namely, Hospitality and Tourism Complete (EBSCOhost), APA PsychInfo (EBSCOhost), Business Source Premier (EBSCOhost), and Google Scholar, using the keywords presented in Table 1. These databases have been utilized in prior HTM content analyses of similar nature (Mejia et al., 2021a and 2021b; Horan et al., 2023) and were selected to ensure that articles published in multiple relevant disciplines were identified. The searches were designed to cover twelve main OSH topics and the full search terms were created by

combining the OSH keywords with (“hospitality” OR “tourism”) and (“worker” OR “employee”) to identify articles focused on H&T workers. After searches in each individual database were completed, duplicate articles (between and within searches) were removed. A total of 4170 articles were initially identified and retrieved.

Next, papers were evaluated based on our inclusion and exclusion criteria. This initial evaluation was completed by one member of the research team based on the pre-established criteria. Articles published outside of the list of target journals were first removed resulting in a combined list of 711 articles (17.1 % retained). The same researcher coded the remaining articles for inclusion as “yes”, “no”, or “unsure” based on meeting the criteria: (1) employee or worker focus; (2) OHS focus or OHS as a primary or secondary topic or construct under investigation; and (3) hospitality and tourism industry focus. For those papers with primary data sources, this initial coding for inclusion was relatively straightforward; however meta-analyses papers presented a greater degree of difficulty for gauging inclusion in the study due to the multiple types and levels of workers in the samples. Therefore, these articles coded as “no” or “unsure” were then reviewed by two researchers on the team who independently reviewed each study and used consensus coding to determine each article’s ultimate inclusion, or exclusion, in the content review. This process was utilized to ensure that all relevant articles were retained. Ultimately, a total of $n = 531$ articles (12.7 %) were identified and selected for inclusion, published between the years of 1987 and 2023 (see Appendix C for full list of referenced papers across the 12 main search topics).

3.2. Coding procedure

Prior to coding the documents, the researchers organized a codebook in which the codes were reliant on a descriptive rationale closely following (see Appendix B): the typical sections of an academic journal article (e.g., Introduction, Literature Review, Method, etc.); journal type according to discipline (e.g., Hospitality and Tourism, Business Management, Psychology); article type (e.g., conceptual/theory, empirical study - qualitative, empirical study - quantitative, etc.); study design (e.g., true experimental, quasi-experimental, longitudinal, etc.); discipline of authors; pre- or post-covid data collection; industry sector; participants’ job type (front-line or management); whether or not the article was occupational health-centric; primary and secondary occupational health topics; primary and secondary analytic methods; whether or not the study was interdisciplinary; and the level of analysis. To establish reliability of the findings, the researchers applied a manifest coding technique to the data, wherein the coders maintained distance and separation from the data by reading the surface text and assigning descriptive meanings according to the codebook protocol in Appendix B (Kleinheksel et al., 2020; Potter and Levine-Donnerstein, 1999). Due to the large number of journal articles ($n = 531$), a decision was made to assign the bulk of the coding to one researcher on the team to achieve greater consistency, and for another researcher on the team to verify the findings by conducting an independent analysis on a subset of journal articles ($n = 34$) to check for accuracy of the coded clusters generated, and to establish conceptual validity of the findings (Krippendorff, 2019). MAXQDA v.22 software for qualitative research was used to code the data (Kuckartz and Radiker, 2023), resulting in 11,109 coded segments (see Appendix B for frequencies) across the 531 documents.

4. Results & discussion

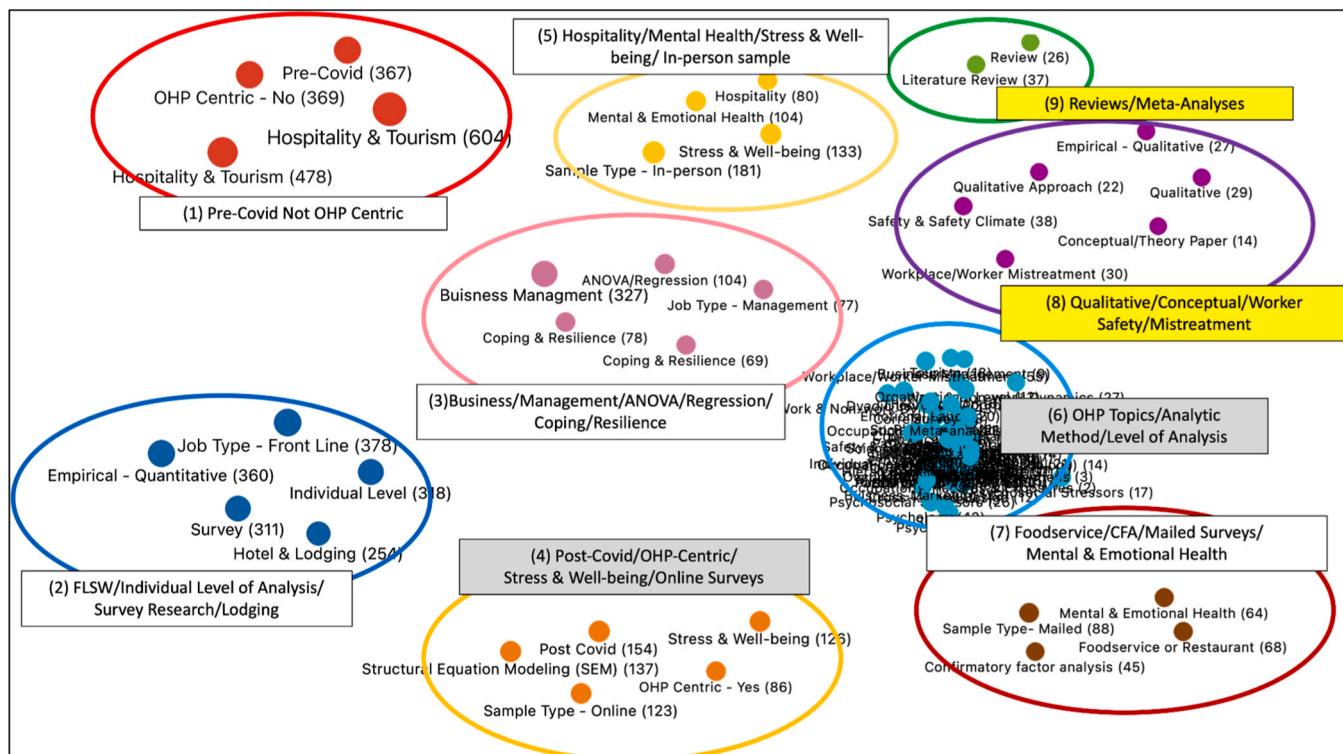
The papers in this study were coded according to journal type of which $n = 426$ (91.8 %) were from the HTM discipline, and the remainder of journal types ($n = 38$; 8.2 %) were from psychology ($n = 16$; 3.4 %), non-psychology occupational health ($n = 10$; 2.2 %), business management ($n = 8$; 1.7 %), and “other” types of journals ($n = 4$; 0.9 %) (see Table 1 and Appendix A). Table 2

Table 2

Frequency Comparisons of Journal Type vs. OHS Primary Topic*.

Journal Type	OHS Primary Topic	Freq.	%	Total Freq. (Total %)
Hospitality & Tourism	Stress & Well-being	125	26.94	426 (91.8 %)
	Coping & Resilience	67	14.44	
	Mental & Emotional Health	61	13.15	
	Workplace/Worker Mistreatment	49	10.56	
	Work & Non-work Dynamics	38	8.19	
	Safety & Safety Climate	31	6.68	
	Emotional Labor	19	4.09	
	Psychosocial Stressors	16	3.45	
	Physical Health	11	2.37	
	Occupational Hazards & Exposures	7	1.51	
Business Management	Injury & Illness	2	0.43	8 (1.7 %)
	Stress & Well-being	3	0.65	
	Work & Non-work Dynamics	2	0.43	
	Mental & Emotional Health	1	0.22	
	Physical Health	1	0.22	
	Safety & Safety Climate	1	0.22	
Occupational Health (Non-Psychology)	Occupational Hazards & Exposures	6	1.29	10 (2.2 %)
	Physical Health	1	0.22	
	Safety & Safety Climate	1	0.22	
	Stress & Well-being	1	0.22	
	Workplace/Worker Mistreatment	1	0.22	
Psychology	Workplace/Worker Mistreatment	5	1.08	16 (3.4 %)
	Safety & Safety Climate	3	0.65	
	Stress & Well-being	3	0.65	
	Work & Non-work Dynamics	2	0.43	
	Coping & Resilience	1	0.22	
	Mental & Emotional Health	1	0.22	
	Psychosocial Stressors	1	0.22	
Other	Emotional Labor	1	0.22	4 (0.9 %)
	Mental & Emotional Health	1	0.22	
	Stress & Well-being	1	0.22	
	Work & Non-work Dynamics	1	0.22	
TOTAL (valid)		464	100.00	

* Note: Criteria for journals in this study included all of the following: (1) An employee or worker focus; (2) An OHS focus or OHS as a primary or secondary topic or construct under investigation; and (3) A hospitality and tourism industry focus.

**Fig. 1.** Nine coded clusters generated from 11,109 coded segments (n = 531 documents).

4.1. Coding results

Both multiple investigator and theoretical triangulation procedures were employed to enhance the credibility, dependability, and transferability of the inferences made from the findings (Renz et al., 2018). Theoretical triangulation is a strategy that uses multiple lenses to increase a study's validity and the ability to interpret its findings (Thurmond, 2001), which in this case included theoretical perspectives from occupational safety and health, industrial-organizational psychology, NIOSH's Total Worker Health (Tamers, 2020), and the hospitality and tourism management discipline. Based on the frequency of the coded segments and their proximity between and among the frequencies of other codes across the documents, the MAXQDA v.22 software generated nine clusters of codes (see Fig. 1) (Kuckartz and Radiker, 2023). These nine clusters were subject to further reduction and were organized according to three broad categories: (1) Research emanating from HTM and related management disciplines (supported by clusters 1, 2, 3, 5, and 7); (2) Research emanating from occupational health psychology (supported by clusters 4 and 6 labels highlighted in gray); and (3) Lack of contextual specificity (supported by clusters 8 and 9 labels highlighted in yellow). In the following sections, each theme is presented along with its associated clusters and sub-themes.

4.2. Research emanating from the hospitality and tourism discipline

Clusters 1, 2, 3, 5, and 7 in Fig. 1 were categorized broadly as research emanating from the HTM discipline, and of the papers subject to content analysis in this study, the majority ($n = 369$; 70 %) were not 'OHS-centric', which means that the papers did not have dependent variables featuring worker health, safety, or well-being. Instead, the findings from our research revealed the vast majority of HTM research leveraged the typical organizational leader-member exchange dependent variables (i.e., job satisfaction, organizational commitment, turnover) as a proxy for the established and multi-dimensional well-being dependent variables such as those related to life satisfaction, dispositional affect, moods, emotions, psychological well-being, job satisfaction, job affect, and work engagement (Chari et al., 2022; Pelly, 2023; Pradhan and Hati, 2022; Wijngaards et al., 2022). In some cases, and regardless of the dependent variable(s) under investigation, HTM researchers utilized measures of well-being as independent variables. In all cases (see cluster #1 in Fig. 1), occupational health measures in HTM-focused papers were absent from the pre-pandemic HTM literature (before March 2020) in the sample of journal articles in this study.

It can also be gleaned from the findings that service worker research in HTM was primarily quantitative and at the individual level of analysis, employing survey methodologies, with a large proportion of sampling from the hotel and lodging sub-sector (cluster #2). While emanating from a tangential field, H&T worker occupational health research in business management appeared to have utilized ANOVA and regression as the method of analysis, with a focus on coping and resilience among managerial-level participants (cluster #3). Topics of mental and emotional health, and stress and well-being appeared to have sampled hospitality workers, collecting data in person (cluster #5). Mailed surveys to foodservice and restaurant workers primarily sought data about mental and emotional health utilizing confirmatory factor analysis as the analytical strategy (cluster #7). Consistent with prior HTM literature (Fong et al., 2016; Kim et al., 2023; Viglia and Dolnicar, 2020), the findings from this study also demonstrated a lack of experimental and interventionist research designs in examining H&T worker safety, health, and well-being.

4.3. Research emanating from occupational health and safety (OHS)

The results revealed a total of 86 papers out of 531 (16 %) that were deemed OHS-centric, supported by clusters 4 and 6 (labels highlighted in gray in Fig. 1). As previously stated, the criteria for papers to be

included in the content analysis had to possess all three of the following: (1) An employee or worker focus; (2) An OSH focus or OSH as a primary or secondary topic or construct under investigation; and (3) A hospitality and tourism industry focus (e.g., restaurant, foodservice, airline industry, cruise industry, spa industry, travel industry call centers, destination management organizations, etc.). Research emanating from occupational health psychology as an overarching theme resonated most closely with clusters 4 and 6 generated from the analysis (labels highlighted in gray), in that all of the OHS-centric papers utilized either a H&T sample or H&T workers subsumed under a meta-analysis, the majority of which were studies conducted after the start of the COVID-19 pandemic (i.e. data collected after March 2020) with online samples using structural equation modeling as the method of analysis, and focusing on stress and well-being (see Fig. 1). This finding is consistent with prior research in this area, as it is clear that researchers worldwide became almost exclusively dependent on online survey designs during lockdowns, particularly to reach H&T workers and consumers (Huang and Wang, 2023), and that stress and well-being were salient constructs, especially at the beginning of the pandemic (Park et al., 2022).

Research emanating from the occupational health discipline with a relative focus on H&T and service worker safety, health, and well-being were reliant on large panel data samples. Articles from psychology journals and occupational health (non-psychology) journals predominantly aggregated H&T service workers from the lodging and foodservice sub-sectors into larger pools of participants that included banking workers, technology firm workers, random participants who were recruited to participate in simulated office settings, university undergraduate and MBA students, participants from primary health care, education, telecommunications and information technology, engineering consulting firms, social services, and construction. Occupational health publications with a tangential focus on H&T worker safety and health were somewhat dependent on conceptual research, meta-analyses, and secondary data in business management journals compared with papers from the H&T discipline, the majority of which were published prior to the onset of the pandemic.

4.4. Lack of contextual specificity

In addition to the findings specific to the HTM or occupational health disciplines, the content analysis unveiled a number of more nuanced and contextual factors as depicted by clusters 8 and 9 (highlighted in yellow in Fig. 1). For example, a number of papers in this study did not state when the data were collected, including those in top-tier journals within their respective disciplines. Many of the papers also lacked transparency in their findings as to the demographics (i.e. position, job level, or title) of the participants. This was especially evident in occupational health journal articles, where the participants often came from the 'hospitality industry', yet the studies did not specify whether the participants were from foodservice, hotel front desk operations, operations management, housekeeping, etc. Contextually, both occupational health and HTM findings can vary greatly in their interpretation when participants are from one area of the hospitality industry versus another (e.g., operations management, restaurant/hotel/theme park management, sales and marketing, etc.), and this has implications on scientific inquiry and on how findings are operationalized in practice (Horan et al., 2021). For example, meta-analytic studies utilizing data from a variety of worker types, levels, or sub-disciplines can generate findings that may not translate across frontline versus executive management workers (Horan et al., 2021).

Over 25 % of HTM papers had a stress and well-being focus. This did not equate to stress and well-being as dependent variables, but rather, researchers situated their studies and titles of their studies as 'stress and well-being' studies regardless of the dependent variables under investigation. This finding is not surprising, as the H&T industry is characterized by high job stress, a well-researched construct across disciplines. What is new to the literature is the unveiling of stress and well-being as

surface topics in HTM, with very few papers utilizing measures of stress and well-being as study foci with occupational health dependent variables and behavioral models. Stress and well-being topics were also present in the other major journal types to a lesser degree, with the exception of business management journals which returned 3 stress and well-being papers with H&T workers in the sample. Given the unevenness of the distribution of occupational health topics in the non-HTM journals broadly, H&T occupational health articles in other journal types prioritized occupational hazards and exposures in non-psychology occupational health journals, and workplace/worker mistreatment and safety climate in psychology journals. Occupational hazards and exposures were substantially lower in frequency as a topic in HTM journals, even as the pandemic started to wane.

5. A research agenda for occupational health, safety, & well-being in the hospitality & tourism discipline

Based on the results of the content analysis where interdisciplinary journal articles with a focus on H&T worker occupational health were targeted, an adapted conceptual research framework for the study of health, safety, and well-being in HTM is presented (Sorensen et al., 2016; 2020). This will allow for the identification of existing gaps in the combined occupational health-HTM research, using a research framework that focuses specifically on the unique dynamics and relationships present in the industry. According to our findings, prior HTM research centered on worker well-being has examined the system of factors influencing occupational health outcomes as a proxy for turnover, worker satisfaction, and organizational commitment. To advance a deeper level of understanding on the occupational health of FLSWs in the H&T discipline, the proposed framework seeks to clarify the interplay between the factors represented and promote a more holistic and deeper approach to the study of occupational health processes in hospitality.

Researchers have indicated a need for future hospitality and tourism research that “fully capture[s] the underlying dynamic, structural, and

systematic complexity of hospitality worker health” (Sönmez et al., 2017, p. 95). Overall, this indicates that a holistic and multi-level approach is necessary to study the dynamic relationships between societal, workplace, and worker-related factors relevant to occupational health and to address the complex challenges impacting H&T worker safety, health, and wellbeing. Supported by the findings of the content analysis, this systems-level perspective with an emphasis on the effects of both conditions of work and broader contextual factors, the proposed framework is suited for addressing the complex range of factors influencing occupational health research in HTM.

5.1. An interdisciplinary framework of OSH perspectives and H&T worker well-being

Adopted from the work of Sorensen et al. (2016) and Peters et al. (2020), the proposed integrated framework (see Fig. 2) shares some key characteristics with prior conceptual models (Bradley et al., 2016; Peters et al., 2022; Punnett et al., 2020; Schulte et al., 2015), chiefly a focus on multiple mechanisms and pathways through which contextual factors and work conditions influence individual and enterprise outcomes related to worker health and safety. However, this framework expands on prior conceptual models in several significant ways, including a broader range of contextual factors, more specific H&T worker outcomes (e.g., behavioral, psychosocial), a greater focus on methodological considerations impacting research (i.e., time and level), and the representation of more complex relationships between factors. The proposed framework also places emphasis on the dynamic nature of these relationships centered on the cyclical nature of occupational safety and health processes. The goal of this framework is to promote future research that aims to define best practices and strategies for addressing challenges to safety, health, and well-being present in the hospitality and tourism industry.

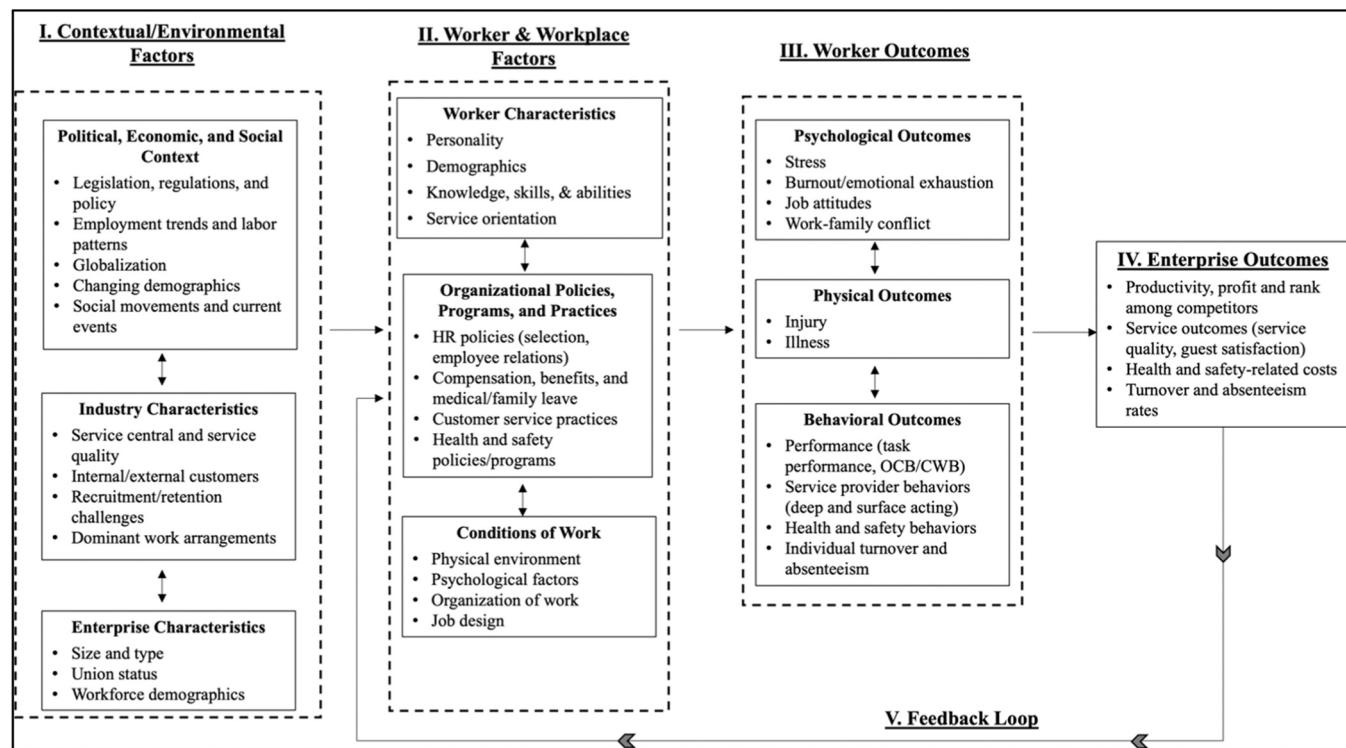


Fig. 2. An interdisciplinary framework of contemporary occupational safety and health perspectives to the study the safety, health, and well-being of workers in the H&T industry (Sorensen et al., 2016; Peters et al., 2020).

5.2. Guidance for interdisciplinary occupational health and HTM research

The proposed framework is a guide for future H&T worker safety, health, and well-being research informed by an interdisciplinary occupational health perspective and includes (see Fig. 2): (I.) Contextual/Environmental Factors (Macro-level); (II.) Worker & Workplace Factors (Micro- and Individual-level); (III.) Worker Outcomes; (IV.) Enterprise Outcomes; and (V.) a Feedback Loop. The double-headed arrows in Fig. 2 depict a bi-directional relationship, or mutual causality that implies a dynamic and interactive relationship within each factor or outcome, commonly found in the industrial-organizational psychology literature (Lam et al., 2016). The remainder of this section will present each of these factors and potential interventions.

5.2.1. Contextual/environmental factors (I.)

Determinants of H&T occupational safety, health, and well-being outcomes are embedded in the broader contextual and environmental factors at the societal level in which a person works. In the *political, economic, and social context*, local, regional and national legislation, regulations, and policy shape well-being outcomes. For example, in the H&T industry, regulations vary across regions (Díaz-Carrión et al., 2020; Le and Phi, 2021), as does minimum wage (Jardim et al., 2022). These factors not only influence H&T workers, but they also influence the economics of a region. Similarly, employment trends and labor patterns, particularly in the post-pandemic context, exert influence on the FLSWs who remain employed in a sector suffering from a labor shortage (Liu-Lastres et al., 2023). Globalization and changing demographics impact H&T workers in the macro environment, and where on the one hand, hospitality and tourism work is plentiful throughout the world, work visas and citizenship create barriers to employment. Social movements and current events can either support the H&T FLSW labor force, or become hostile against certain demographics of workers, as in the case of migrant laborers (Berg and Fiddian-Qasmiyah, 2018).

Hospitality and tourism (H&T) *industry characteristics* are largely service centric with a focus on service quality for competitive advantage (Parasuraman et al., 1991; Sasser et al., 1997). The H&T industry has multiple stakeholders consisting of various levels of internal customers (i.e., employees, management, interdepartmental peers, vendors) and external customers (i.e., typically paying customers or guests). Due to perceptions of low pay, long work hours, and problematic work-life balance, the industry has historically suffered from recruitment and retention problems, which have become even more salient in the aftermath of the pandemic and the Great Resignation (Liu-Lastres et al., 2023). Workers in the H&T industry work when others 'play', thus making work arrangements a dominating factor in a FLSW's life (Chen, 2017) when they are scheduled for work on weekends, holidays, and in the evenings.

The *enterprise characteristics* of specific H&T organizations, including the size and type of organization and the unionization status and the demographic makeup of the FLSWs in the organization, have the capacity to influence health and well-being outcomes via their influence on worker and workplace-related factors. Unionization is often dictated in regions subject to the enterprise, as are workforce demographics. For example, in the U.S. those H&T organizations located in large metropolitan centers have greater access to a talent pool, than do H&T organizations in rural or less-populated regions of the country and this has push/pull implications on wages and unionization (Austin and Donley, 2023).

Future interdisciplinary research should take into account the contextual and environmental factors that impact H&T workers either directly or indirectly within the broader scope of the worker or workplace phenomenon under investigation. One of the findings of the content analysis in this study revealed that H&T worker research emanating from occupational safety and health often aggregated several types of workers in studies using large samples from panel data. This is a

problematic methodological design in that the contextual and environmental factors for H&T workers differ greatly from state-employed emergency workers, or white-collar executives who work from home, in cubicles, or in dedicated office spaces. A lack of consideration or understanding of the broader contextual or environmental determinants of H&T worker well-being will raise questions around the generalizability of the findings, which then has implications on interventions applied to practice.

5.2.2. Worker and workplace factors (II.)

In addition to contextual and environmental factors determinants of H&T worker occupational health, there are more proximal worker and workplace factors influencing H&T worker safety, health, and well-being. These factors are often the solitary aims of research questions both inside and outside the H&T discipline, demonstrated in the findings of the content analysis. For example, studies examining H&T worker selection and hiring practices will not fully connect implications on worker well-being without considering the previously mentioned contextual and environmental factors driving contemporary human resource challenges within any one particular industry sub-sector.

More commonly studied in the H&T discipline, the nuances of *worker characteristics* should be integrated into occupational health research. Personality, demographics, knowledge, skills, and abilities, and service orientation can significantly influence the experiences and behaviors of workers and thus should be critically examined as determinants of occupational well-being, such that these factors may be potentially subject to interventionist methodologies. Linking worker characteristics to more complex contextual and environmental factors such as globalization and social movements can help to build more fulsome research questions that are designed to incorporate occupational health as part of the research design.

Considering workplace factors that predict occupational health outcomes *organizational policies, programs, and practices*, future research will need to consider the rapidly changing recruitment and retention practices specific to the H&T industry. For example, research assessing recruitment strategies in a strained H&T job market will need to highlight fair wages, flexible work schedules and job sharing, and access to continued education to attract top talent (Marinakou and Giousmpasoglou, 2019). Benefits aimed toward supporting employee well-being, medical and family leaves, and other health and safety-related programs will be important to investigate to demonstrate trends and impacts on the retention of future generational cohorts (Sakdiyakorn et al., 2021). Finally, researchers will need to stay current on the impacts of normalized customer mistreatment on the frontline H&T workforce borne out of the pandemic (Torres et al., 2021).

More obvious types of worker and workplace factors for future research fall under the category of *conditions of work*. While these issues, such as physical work environment, psychological factors, organization of work, and job design, typically emanate from the fields of industrial-organizational and human factors psychology, there are increasing opportunities for interdisciplinary research and funding in this area. Examples of emergent interdisciplinary conceptual and empirical *conditions of work* research that can be expanded upon include topics related to ergonomics (Zhang et al., 2020), hotel housekeeper safety and health (Mejia et al., 2021a and 2021b), and national park worker heat stress (Methner and Eisenberg, 2018).

5.2.3. Worker outcomes (III.)

Research related to outcomes directly impacting workers, whether distally (contextually or environmentally) or through more direct workplace factors, were found in the present study the most investigated in the HTM literature. The findings from this content review revealed that *psychological outcomes* such as stress, burnout, job attitude, and work-family conflict were all among those dependent variables under investigation that served as a proxy for 'well-being' papers. More HTM and occupational health interdisciplinary research is needed in this area

to fine tune H&T-related well-being measures, or to develop service industry-specific worker well-being scales as integrated, purposeful, and independent variables.

The results of this study revealed that injury and illness were *physical outcomes* studied in terms of food safety climate, industrial accidents, and managerial behavior, for example. This was an interesting finding given that hospitality and foodservice workplaces can be characterized as hazardous work environments where many underrepresented and at-risk populations face threats to health and safety daily, including young adults (Guerin et al., 2020), minority workers (Lippert et al., 2020), and hotel housekeepers (Mammen, 2022). Given the few papers ($n = 17$) in injury and illness that emerged from the lexical search in this study, the opportunity for future research in this area is abundant. Studies on injury and illness can be directly related to the previously mentioned psychological worker outcomes, such as stress, burnout, and job attitudes, drawing a direct connection between safety, health, and well-being in the hospitality industry.

Organizational behaviorists from the hospitality discipline have produced a substantial number of worker *behavioral outcome* studies in recent years with a focus on performance and organizational citizenship, deep and surface acting, turnover and absenteeism. It is notable that an uptick in research focusing on health and safety behaviors in the hospitality industry emerged during the pandemic, with a plethora of highly cited papers reporting on COVID-19 safety compliance (Hu et al., 2021; Kim et al., 2021; Sonmez et al., 2020; etc.). Taken together with psychological worker outcomes, hospitality research with a focus on behavioral outcomes appears saturated and unless new theoretical behavioral models emerge, this area of study may stagnate. One solution to such inertia might be for researchers to utilize qualitative methodologies for epistemological and ontological exploration through grounded theory (Sharma et al., 2022).

5.2.4. Enterprise outcomes (IV.)

Well documented in the services literature is the relationship between happy and healthy workers and satisfied, loyal customers (Heskett et al., 2008). In the aftermath of the pandemic, consumers are becoming increasingly aware of matters pertaining to the hospitality and tourism workforce such as living wages, suitable working hours, priorities of safety and health, and adequate benefits (Sharma et al., 2023). Optimal *enterprise outcomes* are a result of prioritizing hospitality worker safety and health. Improved productivity, increased service quality and guest satisfaction, lower insurance costs, and decreased turnover are the end products of focusing on employee well-being. However, so many of these worker and workplace characteristics, especially those in human resources, are difficult to quantify and determine a return on investment. Future research in this area should attempt to determine these quantifiable enterprise outcomes through multi-level modeling of contextual/environmental factors, worker and workplace factors, and worker outcomes.

5.2.5. Feedback loop (V.)

Feedback loops account for “circular causality” in the relationship between health and safety-related *antecedents* and *outcomes* (Kompier and Taris, 2011) by recognizing the effects that variables traditionally treated as outcomes of health and safety-related processes (e.g., worker illnesses and injury rates) can have on variables traditionally treated as antecedents (e.g., health and safety training). However, hospitality and tourism worker safety, health, and well-being are embedded in a multi-level and complex set of factors and outcomes that cannot be examined in totality by linear or piecemeal studies. Research examining more comprehensive and systematic phenomenon involving H&T occupational safety and health requires a holistic approach. Future studies should employ experimental methods iteratively and longitudinally to capture the nuances of circular causation. Like Heskett et al.’s (2008) service-profit chain feedback loop, where higher internal service quality (i.e. improved treatment of workers) begets higher external

service quality (i.e. higher guest satisfaction) and so on, the feedback loop presented in the interdisciplinary framework adapted from Sorensen et al. (2016) and Peters et al. (2020) presents a comparable systems view.

6. Conclusion

The purpose of this research was to identify the gaps in connecting occupational health, safety, and well-being priorities within the contemporary HTM literature. Addressing individual health and safety effects in the workplace, as well as their broader organizational impact, requires an understanding of the multitude of factors that independently and collectively influence health and safety matters in a hospitality and tourism organization. Integrated conceptual models have been utilized to design interventions in order to identify important indicators of employee health (i.e., worker outcomes), organizational policies, and work conditions that can be adapted or changed to both protect and promote health and safety (e.g., Sorensen et al., 2016; Peters et al., 2022). Previous research involving the application of conceptual models to occupational health issues, indicates that studies which focus on linear factors relevant to well-being, such as organizational policies, work conditions, and health outcomes, are insufficient and excessively narrow in focus. To fully capture the complexity of occupational health processes, occupational health research must evolve to explore the relationships between these factors to fully understand the processes through which occupational health outcomes emerge.

6.1. Limitations and future research

This study was subject to limitations. As the lexical search to retrieve the documents analyzed in this study included articles up to 2023, studies published after this time were not included in the content analysis. Future research should capture those post-pandemic years to track the frequency of worker safety and health articles and if they increased or leveled out over time. Papers included in this research were limited to those written in English language, and future research should work to include papers from a wider variety of international origins. Although every effort was made to carefully rationalize the narrowing down of papers from 4170 to the final 531 analyzed, future research can incorporate big data mining tools or AI to process a larger set of documents for modeling and thematic analyses.

Funding

This publication was supported by grant number T42OH008438, funded by the National Institute for Occupational Safety and Health (NIOSH) under the Centers for Disease Control and Prevention (CDC). Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the NIOSH or CDC or the Department of Health and Human Services.

CRedit authorship contribution statement

Cynthia Mejia: Writing – review & editing, Writing – original draft, Validation, Supervision, Software, Investigation, Funding acquisition, Formal analysis. **Emily Broker:** Visualization, Validation, Software, Methodology, Formal analysis. **Katherine Ciarlante:** Writing – original draft, Visualization, Validation, Methodology, Investigation, Data curation, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.ijhm.2024.103887](https://doi.org/10.1016/j.ijhm.2024.103887).

References

Adams, M., Li, W.V., Saylor, K., Rosemberg, M.A.S., 2020. Interventions to promote hotel workers' health: A scoping review. *Am. J. Ind. Med.* 63 (12), 1095–1103. <https://doi.org/10.1002/ajim.23190>.

AHLA. (2023). *A new era for U.S. hotels: The American Hotel & Lodging Association 2023 state of the hotel industry report*. AHLA. (https://www.ahla.com/sites/default/files/AHLA.SOTI_Report.2023_final_.002.pdf).

Anger, W.K., Elliott, D.L., Bodner, T., Olson, R., Rohlman, D.S., Truxillo, D.M., Montgomery, D., 2015. Effectiveness of total worker health interventions. *J. Occup. Health Psychol.* 20 (2), 226. <https://doi.org/10.1037/a0038340>.

Arjona-Fuentes, J.M., Ariza-Montes, A., Han, H., Law, R., 2019. Silent threat of presenteeism in the hospitality industry: Examining individual, organisational and physical/mental health factors. *Int. J. Hosp. Manag.* 82, 191–198. <https://doi.org/10.1016/j.ijhm.2019.05.005>.

Austin, C., Donley, A., 2023. The Precariat and the Pandemic: Assessing the Well-Being of Metro Orlando's Hospitality Workers During the COVID-19 Pandemic. *Sociol. Inq.* 93 (1), 8–34. <https://doi.org/10.1111/soin.12497>.

Ayachit, M., Chitta, S., 2022. A systematic review of burnout studies from the hospitality literature. *J. Hosp. Mark. Manag.* 31 (2), 125–144. <https://doi.org/10.1080/19368623.2021.1957743>.

Benjamin, S., Dillette, A., Alderman, D.H., 2020. "We can't return to normal": Committing to tourism equity in the post-pandemic age. *Tour. Geogr.* 22 (3), 476–483. <https://doi.org/10.1080/14616688.2020.1759130>.

Berg, M.L., Fiddian-Qasmiyah, E., 2018. Introduction to the issue: Encountering hospitality and hostility. *Migr. Soc.* 1 (1), 1–6. <https://doi.org/10.3167/arms.2018.010102>.

Bibby, J., Everest, G., Abbs, I., 2020. Will COVID-19 be a watershed moment for health inequalities? *The Health Foundation* 7.

Bradley, C.J., Grossman, D.C., Hubbard, R.A., Ortega, A.N., Curry, S.J., 2016. Integrated Interventions for Improving Total Worker Health: A Panel Report From the National Institutes of Health Pathways to Prevention Workshop: Total Worker Health—What's Work Got to Do With It? *Ann. Intern. Med.* 165 (4), 279–283.

Chang, C.H., Shao, R., Wang, M., Baker, N.M., 2021. Workplace interventions in response to COVID-19: an occupational health psychology perspective. *Occup. Health Sci.* 5 (1), 1–23. <https://doi.org/10.1007/s41542-021-00080-x>.

Chari, R., Chang, C.C., Sauter, S.L., Sayers, E.L.P., Cerully, J.L., Schulte, P., Schill, A.L., Uscher-Pines, L., 2018. Expanding the paradigm of occupational safety and health: a new framework for worker well-being. *J. Occup. Environ. Med.* 60 (7), 589. (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6553458/>).

Chari, R., Sauter, S.L., Sayers, E.L.P., Huang, W., Fisher, G.G., Chang, C.C., 2022. Development of the national institute for occupational safety and health worker well-being questionnaire. *J. Occup. Environ. Med.* 64 (8), 707–717. <https://doi.org/10.1097/JOM.0000000000002585>.

Chen, B.T., 2017. Service innovation performance in the hospitality industry: The role of organizational training, personal-job fit and work schedule flexibility. *J. Hosp. Mark. Manag.* 26 (5), 474–488. <https://doi.org/10.1080/19368623.2017.1264344>.

D'Alessandro, M.M., Schwartz, S.B., Levinson, A., & Cichowicz, J.K. (2021). Who does what? The roles of NIOSH, OSHA, and the FDA in respiratory protection in the workplace. NIOSH Science Blog, CDC [Online]. (https://blogs.cdc.gov/niosh-science-blog/2021/09/09/respirator_roles/).

Davahli, M.R., Karwowski, W., Sonmez, S., Apostolopoulos, Y., 2020. The hospitality industry in the face of the COVID-19 pandemic: Current topics and research methods. *Int. J. Environ. Res. Public Health* 17 (20), 7366. <https://doi.org/10.3390/ijerph17207366>.

Dennerlein, J.T., Burke, L., Sabbath, E.L., Williams, J.A., Peters, S.E., Wallace, L., Sorenson, G., 2020. An integrative total worker health framework for keeping workers safe and healthy during the COVID-19 pandemic. *Hum. Factors* 62 (5), 689–696. <https://doi.org/10.1177/0018720820932699>.

Díaz-Carrión, R., Navajas-Romero, V., Casas-Rosal, J.C., 2020. Comparing working conditions and job satisfaction in hospitality workers across Europe. *Int. J. Hosp. Manag.* 90, 102631 <https://doi.org/10.1016/j.ijhm.2020.102631>.

Fabius, R., Phares, S., 2021. Companies that promote a culture of health, safety, and well-being outperform in the marketplace. *J. Occup. Environ. Med.* 63 (6), 456–461. <https://doi.org/10.1097/JOM.00000000000002153>.

Feltner, C., Peterson, K., Palmieri Weber, R., Cluff, L., Coker-Schwimmer, E., Viswanathan, M., Lohr, K.N., 2016. The effectiveness of Total Worker Health interventions: a systematic review for a National Institutes of Health pathways to prevention workshop. *Ann. Intern. Med.* 165 (4), 262–269. <https://doi.org/10.7326/M16-0626>.

Fong, L.H.N., Law, R., Tang, C.M.F., Yap, M.H.T., 2016. Experimental research in hospitality and tourism: A critical review. *Int. J. Contemp. Hosp. Manag.* 28 (2), 246–266. <https://doi.org/10.1108/IJCHM-10-2014-0506>.

Guerin, R.J., Reichard, A.A., Derk, S., Hendricks, K.J., Menger-Ogle, L.M., Okun, A.H., 2020. Nonfatal occupational injuries to younger workers—United States, 2012–2018. *Morbidity and Mortality Weekly Report*, 69(35), 1204 (https://www.cdc.gov/mmwr/volumes/69/wr/mm6935a3.htm?s_cid=mm6935a3_w).

Hammer, L.B., Brady, J.M., Brosoit, R.M., Mohr, C.D., Bodner, T.E., Crain, T.L., Brockwood, K.J., 2021. Effects of a Total Worker Health® leadership intervention on employee well-being and functional impairment. *J. Occup. Health Psychol.* 26 (6), 582. <https://doi.org/10.1037/ocp0000312>.

Heskett, J.L., Sasser, W.E., Wheeler, J., 2008. *The Ownership Quotient: putting the service profit chain to work for unbeatable competitive advantage*. Harvard Business Press.

Horan, K., Beltramo, J.M., Mejia, C., Shoss, M.K., 2023. Essential service worker valorization: a deonance perspective. *Curr. Issues Tour.* 26 (16), 2582–2594. <https://doi.org/10.1080/13683500.2022.2090909>.

Horan, K.A., Shoss, M.K., Mejia, C., Ciarlante, K., 2021. Industry context as an essential tool for the future of healthy and safe work: Illustrative examples for occupational health psychology from the hospitality industry. *Int. J. Environ. Res. Public Health* 18 (20), 10720. <https://doi.org/10.3390/ijerph182010720>.

Hsieh, Y.C.J., Apostolopoulos, Y., Sönmez, S., 2013. The world at work: hotel cleaners. *Occup. Environ. Med.* 70 (5), 360–364. <https://doi.org/10.1136/oemed-2012-100986>.

Hsieh, Y.C., Shapoval, V., Sönmez, S., Apostolopoulos, Y., 2023. Work Challenges and Health of Immigrant Hotel Housekeepers: Part 2. *Workplace Health Saf.* 71 (5), 255–262. <https://doi.org/10.1177/21650799221148678>.

Hu, X., Yan, H., Casey, T., Wu, C.H., 2021. Creating a safe haven during the crisis: How organizations can achieve deep compliance with COVID-19 safety measures in the hospitality industry. *Int. J. Hosp. Manag.* 92, 102662 <https://doi.org/10.1016/j.ijhm.2020.102662>.

Huang, S., Wang, X., 2023. COVID-19 two years on: A review of COVID-19-related empirical research in major tourism and hospitality journals. *Int. J. Contemp. Hosp. Manag.* 35 (2), 743–764. <https://doi.org/10.1108/IJCHM-03-2022-0393>.

Ilies, R., Aw, S.S., Pluut, H., 2015. Intraindividual models of employee well-being: What have we learned and where do we go from here? *Eur. J. Work Organ. Psychol.* 24 (6), 827–838. <https://doi.org/10.1080/1359432X.2015.1071422>.

Jardim, E., Long, M.C., Plotnick, R., Van Inwegen, E., Vigdor, J., Wething, H., 2022. Minimum-wage increases and low-wage employment: Evidence from Seattle. *Am. Econ. J.: Econ. Policy* 14 (2), 263–314. <https://doi.org/10.1257/pol.20180578>.

Kim, S., Kim, P.B., Lee, G., 2021. Predicting hospitality employees' safety performance behaviors in the COVID-19 pandemic. *Int. J. Hosp. Manag.* 93, 102797 <https://doi.org/10.1016/j.ijhm.2020.102797>.

Kim, J., Kim, S., Jhang, J., Kwon, Y., Baah, N.G., 2023. Experimental design studies in hospitality and tourism research: constructive recommendations. *Int. J. Contemp. Hosp. Manag.* <https://doi.org/10.1108/IJCHM-06-2022-0720>.

Kleinheksel, A.J., Rockich-Winston, N., Tawfik, H., Wyatt, T.R., 2020. Demystifying content analysis. *Am. J. Pharm. Educ.* 84 (1), 7113 <https://doi.org/10.5688/ajpe7113>.

Komppa, M.A., Taris, T.W., 2011. Understanding the causal relations between psychosocial factors at work and health—a circular process. *Scand. J. Work, Environ. Health* 259–261. (<https://www.jstor.org/stable/23064854>).

Krippendorff, K., 2019. *Content Analysis: An Introduction to its Methodology*, 4th Ed. Sage Publications, Inc. Online ISBN: 9781071878781.

Kuckartz, U., Radiker, S., 2023. *Qualitative Text Analysis: A Guide to Methods, Practice & Using Software*, 2nd Ed. SAGE Publications Inc, Thousand Oaks, CA. ISBN: 978-1-5296-0914-1.

Lam, C.F., Wan, W.H., Roussin, C.J., 2016. Going the extra mile and feeling energized: An enrichment perspective of organizational citizenship behaviors. *J. Appl. Psychol.* 101 (3), 379. <https://doi.org/10.1037/apl0000071>.

Le, D., Phi, G., 2021. Strategic responses of the hotel sector to COVID-19: Toward a refined pandemic crisis management framework. *Int. J. Hosp. Manag.* 94, 102808 <https://doi.org/10.1016/j.ijhm.2020.102808>.

Lin, W., Shao, Y., Li, G., Guo, Y., Zhan, X., 2021. The psychological implications of COVID-19 on employee job insecurity and its consequences: The mitigating role of organization adaptive practices. *J. Appl. Psychol.* 106 (3), 317. <https://doi.org/10.3390/ijerph18073654>.

Lippert, J., Rosing, H., Tendick-Matesanz, F., 2020. The health of restaurant work: A historical and social context to the occupational health of food service. *Am. J. Ind. Med.* 63 (7), 563–576. <https://doi.org/10.1002/ajim.23112>.

Liu-Lastres, B., Wen, H., Huang, W.J., 2023. A reflection on the Great Resignation in the hospitality and tourism industry. *Int. J. Contemp. Hosp. Manag.* 35 (1), 235–249. <https://doi.org/10.1108/IJCHM-05-2022-0551>.

Mammen, R., 2022. Assessment of ergonomic problems and prevalence of pain among low wage hotel housekeepers in Orlando. *J. Hum. Resour. Hosp. Tour.* 21 (2), 246–271. <https://doi.org/10.1080/15332845.2022.2031609>.

Marinakou, E., Giousmpasoglou, C., 2019. Talent management and retention strategies in luxury hotels: evidence from four countries. *Int. J. Contemp. Hosp. Manag.* 31 (10), 3855–3878. <https://doi.org/10.1108/IJCHM-10-2018-0862>.

Mejia, C., Ciarlante, K., Chheda, K., 2021a. A wearable technology solution and research agenda for housekeeper safety and health. *Int. J. Contemp. Hosp. Manag.* 33 (10), 3223–3255. <https://doi.org/10.1108/IJCHM-01-2021-0102>.

Mejia, C., Pittman, R., Beltramo, J.M., Horan, K., Grinley, A., Shoss, M.K., 2021b. Stigma & dirty work: In-group and out-group perceptions of essential service workers during COVID-19. *Int. J. Hosp. Manag.* 93, 102772 <https://doi.org/10.1016/j.ijhm.2020.102772>.

Methner, M., Eisenberg, J., 2018. Evaluation of heat stress and heat strain among employees working outdoors in an extremely hot environment. *J. Occup. Environ. Hyg.* 15 (6), 474–480. <https://doi.org/10.1080/15459624.2018.1456663>.

O'Neill, J.W., Davis, K., 2011. Work stress and well-being in the hotel industry. *Int. J. Hosp. Manag.* 30 (2), 385–390. <https://doi.org/10.1016/j.ijhm.2010.07.007>.

OSHA. (2023). About OSHA. (<https://www.osha.gov/aboutosha>).

Page, S.J., Connell, J., 2020. Economic impacts. In: Page, S.J., Connell, J. (Eds.), *Tourism: A Modern Synthesis*, 5th Ed. Routledge, London. <https://doi.org/10.4324/9781003005520>.

Parasuraman, A., Berry, L.L., Zeithaml, V.A., 1991. Refinement and reassessment of the SERVQUAL scale. *J. Retail.* 67 (4), 420.

Park, E., Kim, W.H., Kim, S.B., 2022. How does COVID-19 differ from previous crises? A comparative study of health-related crisis research in the tourism and hospitality context. *Int. J. Hosp. Manag.* 103, 103199 <https://doi.org/10.1016/j.ijhm.2022.103199>.

Park, H., Lee, M., Back, K.J., 2023. A critical review of technology-driven service innovation in hospitality and tourism: current discussions and future research agendas. *Int. J. Contemp. Hosp. Manag.* <https://doi.org/10.1108/IJCHM-07-2022-0875>.

Pelly, D., 2023. Worker well-being and quit intentions: Is measuring job satisfaction enough? *Soc. Indic. Res.* 169, 397–441. <https://doi.org/10.1007/s11205-023-03166-x>.

Peters, S.E., Dennerlein, J.T., Wagner, G.R., Sorensen, G., 2022. Work and worker health in the post-pandemic world: a public health perspective. *Lancet Public Health* 7 (2), e188–e194. [https://doi.org/10.1016/S2468-2667\(21\)00259-0](https://doi.org/10.1016/S2468-2667(21)00259-0).

Peters, S.E., Nielsen, K.M., Nagler, E.M., Revette, A.C., Madden, J., Sorensen, G., 2020. Ensuring organization-intervention fit for a participatory organizational intervention to improve food service workers' health and wellbeing: Workplace organizational health study. *J. Occup. Environ. Med.* 62 (2), e33–e45. <https://doi.org/10.1097/JOM.00000000000001792>.

Potter, W.J., Levine-Donnerstein, D., 1999. Rethinking validity and reliability in content analysis. *J. Appl. Commun. Res.* 27 (3), 258–284. <https://doi.org/10.1080/00909889909365539>.

Pradhan, R.K., Hati, L., 2022. The measurement of employee well-being: development and validation of a scale. *Glob. Bus. Rev.* 23 (2), 385–407. <https://doi.org/10.1177/0972150919859101>.

Punnett, L., Cavallari, J.M., Henning, R.A., Nobrega, S., Dugan, A.G., Cherniack, M.G., 2020. Defining 'integration' for Total Worker Health®: A new proposal. *Ann. Work Expo. Health* 64 (3), 223–235. <https://doi.org/10.1093/annweh/wxa003>.

Renz, S.M., Carrington, J.M., Badger, T.A., 2018. Two strategies for qualitative content analysis: An intramethod approach to triangulation. *Qual. Health Res.* 28 (5), 824–831. <https://doi.org/10.1177/1049732317753586>.

Rosemberg, M.A.S., 2020. Health and safety considerations for hotel cleaners during COVID-19. *Occup. Med.* 70 (5), 382–383. <https://doi.org/10.1093/occmed/kqaa053>.

Rosemberg, M.A.S., Boutain, D.M., Hsin-Chun Tsai, J., 2021. Occupational health research beyond the work setting: Inclusive inquiry with ethnic minority and immigrant workers. *Ethn. Health* 26 (8), 1242–1260. <https://doi.org/10.1080/13557858.2019.1612517>.

Sabbath, E.L., Hashimoto, D., Boden, L.I., Dennerlein, J.T., Williams, J.A., Hopcia, K., Sorensen, G., 2018. Cohort profile: the Boston hospital workers health study (BHWHS). *Int. J. Epidemiol.* 47 (6), 1739–1740g. <https://doi.org/10.1093/ije/dyy164>.

Sakdiyakorn, M., Golubovskaya, M., Solnet, D., 2021. Understanding Generation Z through collective consciousness: Impacts for hospitality work and employment. *Int. J. Hosp. Manag.* 94, 102822 <https://doi.org/10.1016/j.ijhm.2020.102822>.

Sasser, W.E., Schlesinger, L.A., Heskett, J.L., 1997. Service Profit Chain. Simon and Schuster.

Schill, A.L., 2017. Advancing well-being through total worker health®. *Workplace Health Saf.* 65 (4), 158–163. <https://doi.org/10.1177/2165079917701140>.

Schneider, D., Harknett, K., 2019. Consequences of routine work-schedule instability for worker health and well-being. *Am. Sociol. Rev.* 84 (1), 82–114. <https://doi.org/10.1177/0003122418823184>.

Schulte, P.A., Delclos, G., Felknor, S.A., Chosewood, L.C., 2019. Toward an expanded focus for occupational safety and health: a commentary. *Int. J. Environ. Res. Public Health* 16 (24), 4946. <https://doi.org/10.3390/ijerph16244946>.

Schulte, P.A., Guerin, R.J., Schill, A.L., Bhattacharya, A., Cunningham, T.R., Pandalai, S.P., Stephenson, C.M., 2015. Considerations for incorporating "well-being" in public policy for workers and workplaces. *Am. J. Public Health* 105 (8), e31–e44. <https://doi.org/10.2105/AJPH.2015.302616>.

Sharma, G., Kulshreshtha, K., Bajpai, N., 2022. Getting over the issue of theoretical stagnation: an exploration and metamorphosis of grounded theory approach. *Qual. Quant.* 56 (2), 857–884. <https://doi.org/10.1007/s11135-021-01159-x>.

Sharma, G.D., Taheri, B., Gupta, M., Chopra, R., 2023. Over 33 years of the hospitality research: a bibliometric review of the international journal of contemporary hospitality management. *Int. J. Contemp. Hosp. Manag.* 35 (7), 2564–2589. <https://doi.org/10.1108/IJCHM-04-2022-0499>.

Sönmez, S., Apostolopoulos, Y., Lemke, M.K., Hsieh, Y.C.J., Karwowski, W., 2017. Complexity of occupational health in the hospitality industry: Dynamic simulation modeling to advance immigrant worker health. *Int. J. Hosp. Manag.* 67, 95–105. <https://doi.org/10.1016/j.ijhm.2017.08.006>.

Sönmez, S., Apostolopoulos, Y., Lemke, M.K., Hsieh, Y.C.J., 2020. Understanding the effects of COVID-19 on the health and safety of immigrant hospitality workers in the United States. *Tour. Manag. Perspect.* 35, 100717 <https://doi.org/10.1016/j.tmp.2020.100717>.

Sorensen, G., Dennerlein, J.T., Peters, S.E., Sabbath, E.L., Kelly, E.L., Wagner, G.R., 2021. The future of research on work, safety, health and wellbeing: A guiding conceptual framework. *Soc. Sci. Med.* 269, 113593 <https://doi.org/10.1016/j.socscimed.2020.113593>.

Sorensen, G., McLellan, D.L., Sabbath, E.L., Dennerlein, J.T., Nagler, E.M., Hurtado, D.A., Pronk, N.P., Wagner, G.R., 2016. Integrating worksite health protection and health promotion: A conceptual model for intervention and research. *Prev. Med.* 91, 188–196. <https://doi.org/10.1016/j.ypmed.2016.08.005>.

Subramony, M., Groth, M., Hu, X.J., Wu, Y., 2021. Four decades of frontline service employee research: an integrative bibliometric review. *Journal of Service Research* 24 (2), 230–248. <https://doi.org/10.1177/1094670521999721>.

Tamers, S., 2020. Total worker health® is the future of worker safety, health, and well-being. *Eur. J. Public Health* 30 (Supplement 5), 165–169. <https://doi.org/10.1093/eupub/ckaa165.169>.

Tamers, S.L., Chosewood, L.C., Childress, A., Hudson, H., Nigam, J., Chang, C.C., 2019. Total Worker Health® 2014–2018: The novel approach to worker safety, health, and well-being evolves. *Int. J. Environ. Res. Public Health* 16 (3), 321. <https://doi.org/10.3390/ijerph16030321>.

Thurmond, V.A., 2001. The point of triangulation. *J. Nurs. Scholarsh.* 33 (3), 253–258. <https://doi.org/10.1111/j.1547-5069.2001.00253.x>.

Torres, E.N., Ridderstaat, J., Wei, W., 2021. Negative affectivity and people's return intentions to hospitality and tourism activities: The early stages of COVID-19. *J. Hosp. Tour. Manag.* 49, 89–100. <https://doi.org/10.1016/j.jhtm.2021.08.021>.

Vasist, P.N., Krishnan, S., 2022. Demystifying fake news in the hospitality industry: A systematic literature review, framework, and an agenda for future research. *Int. J. Hosp. Manag.* 106, 103277 <https://doi.org/10.1016/j.ijhm.2022.103277>.

Viglia, G., Dolnicar, S., 2020. A review of experiments in tourism and hospitality. *Ann. Tour. Res.* 80, 102858 <https://doi.org/10.1016/j.annals.2020.102858>.

Wijngaards, I., King, O.C., Burger, M.J., van Exel, J., 2022. Worker well-being: What it is, and how it should be measured. *Appl. Res. Qual. Life* 17, 795–832. <https://doi.org/10.1007/s11482-021-09930-w>.

Yoo, J.J.E., Weber, K., 2005. Progress in convention tourism research. *J. Hosp. Tour. Res.* 29 (2), 194–222. <https://doi.org/10.1177/1096348004272177>.

Zhang, T.C., Torres, E., Jahromi, M.F., 2020. Well on the way: An exploratory study on occupational health in hospitality. *Int. J. Hosp. Manag.* 87, 102382 <https://doi.org/10.1016/j.ijhm.2019.102382>.