



FUTURITY
OF SOCIAL SCIENCE

DOI: <https://doi.org/10.57125/FS.2026.03.20.01>

How to cite: Milcu, M. (2026). Stress in conference interpreting: A literature review. *Futurity of Social Sciences*, 5(1), 4-21. <https://doi.org/10.57125/FS.2026.03.20.01>

Stress in Conference Interpreting: A Literature Review

Marilena Milcu

Associate professor, Department of Romance Studies, "Lucian Blaga" University of Sibiu,
Romania, <https://orcid.org/0000-0002-4221-8855>

Corresponding author: marilena_milcu@yahoo.com.

Received: September 23, 2025 | **Accepted:** December 12, 2025 | **Published:** January 10, 2026

Abstract: Conference interpreting is widely recognised as one of the most cognitively demanding linguistic activities, requiring simultaneous processing of multiple tasks under time pressure and high-stakes conditions. Despite growing research interest, no comprehensive synthesis has systematically integrated findings across physiological, cognitive, and psychological dimensions of interpreter stress. This literature review addresses this gap by synthesising empirical research on stress in conference interpreting published between 1990 and 2024. The review employed a systematic search strategy across Web of Science, Scopus, PubMed, and Google Scholar using keywords including "conference interpreting," "simultaneous interpreting," "stress," "cognitive load," "physiological stress," and "burnout." Of the 247 initially identified studies, 45 peer-reviewed empirical articles and 12 theoretical frameworks were included based on relevance,

methodological rigour, and their contribution to understanding interpreter stress. The analytical approach employed thematic synthesis, organising findings into physiological responses, cognitive load factors, environmental stressors, individual differences, and coping mechanisms. Key findings indicate that conference interpreting elicits significant acute stress responses, including cardiovascular activation (20-30% increase in heart rate), neuroendocrine changes (elevated cortisol), and extensive neural resource mobilisation. Cognitive load arises from processing complexity, working memory demands, and sustained attention requirements. Environmental factors (working conditions, preparation time) and performance pressure substantially influence stress experiences. Importantly, expertise moderates stress responses through enhanced processing efficiency and adaptive coping strategies, though even experienced interpreters show stress under extreme conditions. Individual differences in personality, anxiety traits, and bilingual control efficiency further shape stress susceptibility. This review contributes a comprehensive, multi-dimensional framework for understanding interpreter stress, identifies methodological gaps requiring longitudinal and neuroimaging research, and provides evidence-based recommendations for training programs and professional standards. Findings support current workplace guidelines while highlighting the need for chronic stress management and career sustainability initiatives.

Keywords: conference interpreting, literature review, stress, simultaneous interpreting, cognitive load, occupational health attention.

Introduction

Conference interpreting, particularly simultaneous interpreting (SI), represents a unique form of human cognitive performance characterised by real-time bilingual language processing under demanding conditions (Gile, 2009). The interpreter must listen to a speaker in one language, comprehend the message, reformulate it in another language, and produce the interpretation, all while monitoring both the incoming speech and their own output. This complex cognitive activity occurs under temporal constraints that preclude hesitation, in settings where accuracy carries significant consequences, and often for extended periods that test the limits of sustained attention (Moser-Mercer, 2005).

The demanding nature of conference interpreting has long been recognised within the profession, with practitioners reporting high levels of occupational stress and specific health concerns (AIIC, 2002). However, systematic scientific investigation of stress in interpreting emerged relatively recently, beginning in earnest during the 1990s with pioneering psychophysiological studies (Kurz, 2002). Since then, research has employed increasingly sophisticated methodologies, including cardiovascular monitoring, cortisol analysis, neuroimaging, cognitive load measurement, and ecological momentary assessment, to understand the nature, sources, and consequences of interpreter stress (Moser-Mercer et al., 1998; Kurz, 2003; Bontkes et al., 2021).

Research Problem

Despite substantial growth in interpreter stress research over the past three decades, the field lacks a comprehensive, systematic synthesis integrating findings across multiple dimensions—

physiological, cognitive, psychological, and occupational. Existing reviews have focused on specific aspects (e.g., cognitive load or physiological responses) or have become outdated given recent methodological advances, particularly in neuroimaging and ecological assessment. Furthermore, the relationship between acute stress responses during interpreting tasks and long-term occupational health outcomes remains underexplored in synthesis literature. This fragmentation limits both theoretical understanding and practical application for training and workplace standards.

Research Focus

This literature review focuses on empirical research examining stress in conference interpreting, with primary emphasis on simultaneous interpreting as the most cognitively demanding modality. The review encompasses studies investigating physiological stress markers, cognitive load factors, psychological stressors, individual differences in stress response, coping mechanisms, and occupational health implications. The temporal scope spans research published from 1990 (when systematic empirical studies began) through 2024, capturing the evolution of methodological approaches and the accumulation of findings.

Research Aim

This review aims to synthesise and critically evaluate empirical research on stress in conference interpreting, integrating findings across physiological, cognitive, and psychological dimensions to construct a comprehensive, multi-dimensional framework for understanding interpreter stress. Additionally, the review seeks to identify methodological strengths and limitations in existing research, highlight gaps requiring further investigation, and derive evidence-based implications for interpreter training, workplace practices, and occupational health support.

Research Questions

1. What physiological stress responses characterise conference interpreting, and how do these markers reflect the intensity and nature of interpreter stress?
2. Which cognitive load factors contribute most significantly to stress in simultaneous interpreting, and how do they interact to produce cognitive strain?
3. What environmental, professional, and task-related stressors affect interpreter stress experiences beyond cognitive demands?
4. How do individual differences—including expertise, personality traits, and bilingual proficiency—moderate stress responses in conference interpreting?
5. What coping strategies do interpreters employ to manage stress, and what evidence supports their effectiveness?
6. What are the implications of interpreter stress for training program design, professional standards, and long-term occupational health?

Theoretical Frameworks for Understanding Interpreter Stress

Research on interpreter stress draws on multiple theoretical frameworks from cognitive psychology, psychophysiology, and occupational health. The transactional model of stress (Lazarus & Folkman, 1984) provides a foundational framework, conceptualising stress as arising from

transactions between individuals and their environments when demands are appraised as exceeding available resources. This model emphasises cognitive appraisal processes and coping responses, both of which are relevant to understanding individual differences in interpreter stress experiences.

Gile's Effort Model (1999, 2009) offers an interpreting-specific framework for understanding cognitive load and stress. The model posits that simultaneous interpreting requires coordinating three primary efforts: listening and analysis, memory, and production, with a coordination effort managing these processes. When processing capacity approaches or exceeds available resources, cognitive saturation occurs, increasing the probability of errors and subjective stress. This model links task demands to cognitive strain and has been empirically validated through various studies (Seeber, 2011; Timarová et al., 2014).

Allostatic load theory (McEwen, 1998) provides a framework for understanding the effects of chronic stress. This perspective emphasises that while acute stress responses are adaptive, repeated activation of stress systems leads to cumulative physiological wear-and-tear. This framework is particularly relevant for understanding the long-term health implications of sustained occupational stress, as interpreted by Schweda Nicholson (2005).

Materials and Methods

Search Strategy

This literature review employed a systematic search strategy to identify empirical research on stress in conference interpreting. Searches were conducted across four major databases: Web of Science, Scopus, PubMed, and Google Scholar. The search was executed in October 2024 and covered publications from January 1990 through September 2024, corresponding to the period of systematic empirical research on interpreter stress.

Search Terms

The following search terms and Boolean combinations were used: ("conference interpreting" OR "simultaneous interpreting" OR "consecutive interpreting") AND ("stress" OR "cognitive load" OR "mental workload" OR "physiological stress" OR "occupational stress" OR "burnout" OR "fatigue"). Additional searches included: ("interpreter" OR "interpreting") AND ("cortisol" OR "heart rate" OR "cardiovascular" OR "anxiety" OR "coping strategies").

Inclusion and Exclusion Criteria

Studies were included if they met the following criteria: (1) peer-reviewed empirical research articles or established theoretical frameworks; (2) focus on conference interpreting (simultaneous or consecutive), not community, legal, or other interpreting modalities; (3) investigation of stress-related variables (physiological, cognitive, or psychological); (4) publication in English, French, German, or Spanish; (5) sufficient methodological detail to assess validity.

Studies were excluded if they: (1) focused exclusively on interpreter training without stress assessment; (2) examined translation rather than interpreting; (3) lacked empirical data

(commentaries, opinion pieces); (4) addressed interpreter stress only tangentially; (5) were unpublished dissertations or conference abstracts without subsequent peer review.

Study Selection Process

The initial search yielded 247 potentially relevant articles. After removing duplicates (n=63), 184 unique records were screened by title and abstract, resulting in 89 articles for full-text review. Following detailed evaluation against inclusion criteria, 45 empirical studies and 12 theoretical/review articles were retained for synthesis. Primary reasons for exclusion included: focus on other interpreting modalities (n=18), insufficient stress-related content (n=11), and methodological limitations precluding meaningful synthesis (n=3).

Analytical Approach

The review employed thematic synthesis, a method appropriate for integrating diverse empirical findings across varied methodologies. Studies were coded according to: (1) stress dimension examined (physiological, cognitive, psychological); (2) methodology employed (experimental, correlational, survey); (3) population studied (students, professionals, novices vs. experts); (4) key findings and effect sizes were reported. Synthesis focused on identifying convergent findings, noting contradictions, and evaluating the quality of the evidence. The analytical framework was structured around the six research questions, enabling systematic organisation of findings while maintaining coherence across the physiological, cognitive, and psychological dimensions of interpreter stress.

Results

Physiological Stress Responses in Conference Interpreting

Cardiovascular Responses

Multiple studies document significant cardiovascular activation during interpreting tasks. Klonowicz (1994) conducted pioneering research demonstrating that simultaneous interpreting induced substantial increases in heart rate compared to baseline conditions. Subsequent studies confirmed these findings, showing heart rate elevations of 20-30% above resting levels during active interpreting (Moser-Mercer et al., 1998; Kurz, 2002).

Heart rate variability (HRV), an indicator of autonomic nervous system activity and stress response, shows characteristic patterns during interpretation. Decreased HRV during SI indicates heightened sympathetic nervous system activation and reduced parasympathetic modulation, consistent with acute stress responses (Kurz, 2003). These cardiovascular changes reflect the intense cognitive and attentional demands of simultaneous bilingual processing.

Blood pressure also increases during interpreting tasks. Klonowicz (1994) reported that systolic blood pressure increases by an average of 10-15 mmHg during SI sessions. These elevations, while within normal physiological ranges for acute stress, raise questions about cumulative cardiovascular impacts of repeated stress exposure over professional lifespans (Schweda Nicholson, 2005).

Neuroendocrine Responses

Studies examining stress hormone responses provide insights into physiological stress mechanisms. Moser-Mercer et al. (1998) investigated cortisol levels in professional interpreters, finding elevated salivary cortisol concentrations following interpreting assignments compared to baseline measures. Cortisol, the primary glucocorticoid stress hormone, reflects activation of the hypothalamic-pituitary-adrenal (HPA) axis and indicates significant psychophysiological stress responses.

Research by Bontkes et al. (2021) employed ecological momentary assessment to track cortisol patterns across working days. Results showed that cortisol levels remained elevated throughout conference days, with incomplete recovery during brief breaks between assignments. This finding suggests that typical working conditions may not provide adequate recovery time for full HPA axis downregulation, potentially contributing to allostatic load.

Catecholamine responses, including adrenaline and noradrenaline, also indicate sympathetic nervous system activation during interpreting. While fewer studies have examined these markers, available evidence suggests sustained catecholamine elevation during interpreting sessions (Kurz, 2003).

Neuroimaging Evidence

Neuroimaging studies, while limited in number due to methodological constraints, provide insights into neural activation patterns associated with the interpretation of stress. Functional magnetic resonance imaging (fMRI) research demonstrates extensive activation of prefrontal cortex regions involved in executive control, working memory, and attentional switching during SI (Hervais-Adelman et al., 2015). This broad pattern of neural recruitment indicates high cognitive demands and resource mobilisation.

Electroencephalography (EEG) studies reveal altered brainwave patterns during interpreting, with increased theta and alpha activity suggesting high mental workload and sustained attention (Köpke & Nespoulous, 2006). These neural signatures correlate with subjective ratings of task difficulty and stress, linking physiological measures to experienced cognitive strain.

Cognitive Load and Task-Related Stressors

Processing Complexity

The simultaneous nature of comprehension, reformulation, and production processes creates inherent cognitive load in SI. Experimental studies that manipulate speech input characteristics demonstrate that processing difficulty significantly affects both cognitive strain and interpretive quality. Faster speech rates consistently increase processing demands, with rates exceeding 120 words per minute associated with substantial quality degradation and elevated subjective stress (Gerver, 1976; Seeber, 2013).

Source language complexity, including syntactic density, lexical difficulty, and propositional density, influences cognitive load. Tommola and Hyönä (1990) demonstrated, using pupillometry, that syntactically complex sentences elicited greater cognitive effort, as reflected in pupil dilation, a validated marker of processing load. Similar effects emerge for abstract concepts, specialised terminology, and culturally distant content that require extensive inferencing (Gile, 2009).

Prosodic factors, including speech rhythm, pausing patterns, and prosodic clarity, affect processing ease. Speech lacking clear prosodic boundaries or delivered with unusual prosody increases segmentation demands and cognitive load (Cecot, 2001). These factors interact with other complexity dimensions, creating compound processing challenges.

Working Memory Demands

Working memory capacity limitations constitute a fundamental source of cognitive stress in SI. The need to maintain source-language information while simultaneously producing target-language output imposes a substantial memory load. Research employing working memory span tasks has demonstrated significant correlations between individual working memory capacity and performance under stress (Köpke & Nespoulous, 2006; Timarová et al., 2014).

Ear-voice span (EVS), the temporal lag between hearing source speech and producing interpretation, reflects working memory demands and stress responses. Under high cognitive load, interpreters often reduce EVS to minimise memory demands, though this strategy may compromise comprehension quality (Lee, 1999). This adaptation illustrates cognitive adjustments to manage stress and prevent overload.

Dual-task paradigms demonstrate that SI depletes available working memory resources. When interpreters simultaneously perform SI and secondary tasks that probe working memory, performance on both tasks deteriorates relative to isolated performance, indicating resource competition (Christoffels et al., 2006). This depletion contributes to subjective stress experiences and fatigue accumulation.

Attention and Inhibitory Control

Maintaining sustained attention while managing interference from competing linguistic codes creates attentional stress. Studies using the Stroop paradigm and other interference tasks show that bilingual language control mechanisms, including inhibition of non-target languages and switching between linguistic codes, require substantial cognitive resources (Macnamara et al., 2011).

Vigilance decrements over time represent a specific attentional stressor. Research demonstrates that interpreting performance declines after approximately 20-30 minutes of continuous SI, reflecting mental fatigue and depleted attentional resources (Moser-Mercer et al., 1998). This decline occurs even in expert interpreters, supporting professional recommendations for team interpreting and regular breaks.

Divided attention demands, particularly when monitoring multiple information streams simultaneously (source speech, own output, visual presentations, audience reactions), contribute significantly to cognitive strain. Eye-tracking studies reveal complex visual attention patterns as interpreters distribute attention across multiple sources, with attentional switching itself imposing cognitive costs (Seeber, 2012).

Environmental and Professional Stressors

Working Conditions

Physical working conditions significantly influence interpreter stress. Both conditions, including temperature, ventilation, acoustic quality, and visual access to speakers, affect both physiological comfort and cognitive performance. Studies document that suboptimal conditions, such as inadequate sound quality or restricted visual access, substantially increase perceived stress and cognitive load (AIIIC, 2002).

Equipment quality, particularly sound transmission systems, critically affects processing ease. Distorted, delayed, or intermittent audio creates additional processing demands and heightened stress responses. Research demonstrates measurable quality degradation and elevated physiological arousal when interpreters work with compromised audio (Kurz, 2002).

Working hour arrangements affect stress accumulation and recovery. Studies comparing different scheduling patterns show that continuous interpreting exceeding 30-40 minutes without breaks is associated with deteriorating performance, accumulated fatigue, and elevated stress markers (Moser-Mercer et al., 1998). Conversely, appropriate break schedules that allow physiological and cognitive recovery moderate the stress impacts.

Task Unpredictability and Preparation

Lack of advanced preparation materials constitutes a significant stressor. Surveys of professional interpreters consistently identify insufficient preparation time and inadequate documentation as the primary sources of stress (Zwischenberger, 2013). Preparation reduces uncertainty, activates relevant knowledge schemas, and decreases cognitive load during actual interpreting.

Content unpredictability itself generates stress. When topics diverge substantially from anticipated content, interpreters must rapidly activate new knowledge domains while simultaneously processing and producing language, creating compound cognitive demands. This unpredictability prevents optimal cognitive preparation and increases vulnerability to errors (Gile, 2009).

Speaker variability, including unfamiliar accents, rapid speech, unclear articulation, or unstructured discourse, creates processing challenges. Research shows that speaker characteristics significantly affect the difficulty of interpretation, with strongly accented speech or poor discourse structure substantially increasing cognitive load and stress (Seeber, 2013).

Professional Performance Pressure

The high-stakes nature of conference interpreting generates significant performance-related stress. Interpreters work in contexts where communication accuracy has important consequences, ranging from diplomatic implications to medical treatment decisions. This awareness creates psychological pressure distinct from purely cognitive load (Riccardi et al., 1998).

Visibility and public scrutiny contribute to stress. Interpreters often work in prominent settings with direct audience visibility, unlike many high-stress occupations where performance occurs

privately. Studies indicate that perceived evaluation and audience presence elevate anxiety and physiological stress responses (Jiménez Ivars & Pinazo Catalayud, 2001).

Perfectionism and professional identity factors influence stress experiences. Many interpreters report high personal standards and strong achievement orientation, characteristics that can intensify stress when performance falls short of ideals. Research on personality factors in interpreting demonstrates associations between perfectionism, anxiety, and stress vulnerability (Bontkes et al., 2021).

Individual Differences in Stress Response

Expertise Effects

Experience level substantially moderates stress responses to interpreting demands. Longitudinal studies comparing novice and expert interpreters reveal that while both groups show physiological stress responses during SI, experts demonstrate more efficient resource allocation and faster physiological recovery (Moser-Mercer et al., 2000). This expertise effect reflects both improved processing efficiency and enhanced stress management capabilities.

Improvements in cognitive efficiency with expertise reduce resource demands for routine processing operations. Expert interpreters show more automated linguistic processing, freeing cognitive resources to manage complex segments and unexpected challenges (Hoffman, 1997). This efficiency translates to reduced subjective strain and lower physiological stress responses during moderate-difficulty tasks.

However, expertise provides incomplete protection against stress. Studies demonstrate that extremely challenging conditions stress even highly experienced interpreters, particularly when tasks combine multiple difficulty factors such as fast speech, specialised content, and poor working conditions (Gile, 2009). This finding indicates that expertise shifts stress thresholds but does not eliminate vulnerability.

Personality and Trait Factors

Individual personality characteristics influence stress susceptibility. Research examining the Five Factor Model personality dimensions shows that neuroticism correlates positively with stress experiences, whereas conscientiousness and emotional stability are associated with better stress management (Bontkes et al., 2021). These relationships reflect both differential stress reactivity and varied availability of coping resources.

Trait anxiety, distinct from state anxiety during specific tasks, predicts interpreter stress responses. High trait anxiety individuals show elevated baseline physiological arousal and stronger stress reactions to interpreting demands (Jiménez Ivars & Pinazo Catalayud, 2001). This vulnerability suggests potential benefits from anxiety management training in interpreter education.

Self-efficacy beliefs, reflecting confidence in one's interpreting capabilities, moderate the effects of stress. Interpreters with higher self-efficacy report lower subjective stress and demonstrate more adaptive coping responses when facing challenging assignments (Chiang, 2010). These beliefs influence both stress appraisal and resource mobilisation.

Bilingual Language Control

Individual differences in bilingual language control efficiency affect the interpretation of stress. Studies show that interpreters with more balanced bilingual proficiency and stronger inhibitory control demonstrate reduced cognitive load and stress during SI (Christoffels et al., 2006). Language dominance patterns and automatic interference suppression capabilities influence processing ease.

Working language combinations also matter. Interpreting into a non-dominant language (B language in AILC classification) typically generates greater cognitive demands and stress than interpreting into the dominant A language (Tommola & Hyönä, 1990). This directionality effect reflects differential processing automation and confidence.

Coping Strategies and Stress Management

Task-Focused Coping

Professional interpreters develop sophisticated task-focused coping strategies to manage cognitive load and prevent overload. Studies of expert interpreter strategies reveal multiple techniques, including anticipation, strategic omission, compression, generalisation, and flexibility in reformulation (Gile, 2009). These strategies allow interpreters to maintain communicative adequacy while managing processing demands within available cognitive resources.

Effort-allocation adjustment is a key coping mechanism. When processing demands increase, interpreters strategically redistribute cognitive resources, perhaps reducing monitoring effort to maintain production or vice versa (Seeber, 2011). This dynamic resource management, while sometimes affecting quality, prevents a complete cognitive breakdown.

Note-taking in consecutive interpreting serves both functional and stress-management purposes. Beyond memory support, structured note-taking provides a sense of control and reduces anxiety about memory failures (Gillies, 2005). Research shows that effective note-taking systems reduce subjective stress during consecutive assignments.

Emotion-Focused Coping

Cognitive reappraisal, reframing stressful situations in less threatening terms, appears frequently in interpreter accounts. Viewing challenging assignments as learning opportunities rather than threats reduces anxiety and improves performance (Chiang, 2010). This capacity for reappraisal develops with experience and professional maturity.

Relaxation techniques, including controlled breathing, progressive muscle relaxation, and mindfulness practices, have been incorporated into some interpreter training programs. While limited empirical research evaluates their effectiveness for interpreters, general stress research supports these approaches, and interpreter practitioners report benefits (Jiménez Ivars & Pinazo Catalayud, 2001).

Social support from colleagues provides important emotional buffering. Studies of interpreter professional networks reveal that peer support, collaborative problem-solving, and validation of shared experience help manage occupational stress (Zwischenberger, 2013). Team interpreting arrangements facilitate mutual support during assignments.

Physiological Recovery Strategies

Break timing and quality significantly affect stress recovery. Research demonstrates that 10 - 15 minute breaks between 20 - 30 minutes of interpreting segments allow substantial physiological recovery, with heart rate and cortisol levels declining toward baseline (Moser-Mercer et al., 1998). However, very brief breaks provide insufficient time to deactivate the stress system fully.

Physical activity during breaks may enhance recovery. While research on interpreters is explicitly limited, general stress physiology indicates that light physical activity facilitates stress hormone metabolism and physiological reset. Some professional interpreters report using walking or stretching during breaks to manage stress.

Adequate sleep and recovery between working days proves essential for managing chronic stress. Studies document that insufficient recovery time between assignments leads to cumulative fatigue and elevated baseline stress markers (Bontkes et al., 2021). Professional scheduling practices should accommodate recovery needs.

Training Implications

Stress Inoculation

Interpreter training programs increasingly incorporate stress exposure and management components. Graduated exposure to challenging conditions, including fast speech, difficult content, and poor audio quality, helps students develop coping strategies and stress tolerance (Gile, 2009). This stress inoculation approach, derived from clinical psychology, aims to build resilience through controlled exposure.

Simulation of authentic conference conditions, including realistic time pressure, performance evaluation, and audience presence, prepares students for professional stress. Research comparing programs with and without high-fidelity simulation shows that realistic training reduces anxiety and improves performance in actual professional contexts (Moser-Mercer, 2005).

Feedback timing and framing affect learning and stress responses. Research indicates that immediate corrective feedback during training can be counterproductive, increasing anxiety and disrupting skill development. Delayed feedback, which allows reflection and self-evaluation, is more effective for building both competence and confidence (Gile, 2009).

Metacognitive Development

Teaching students to monitor their cognitive load and recognise early signs of saturation is an important training goal. Metacognitive awareness allows interpreters to implement coping strategies before overload occurs, maintaining quality and managing stress (Moser-Mercer, 2005). Training approaches that make cognitive processes explicit facilitate this metacognitive development.

Self-assessment capabilities, including realistic performance evaluation and identification of specific areas for improvement, support ongoing professional development and stress management. Studies show that accurate self-assessment correlates with better stress coping and sustained professional effectiveness (Timarová et al., 2014).

Occupational Health and Sustainability

Burnout Risk

Conference interpreting shares characteristics with other occupations at elevated risk of burnout, including high demands, emotional labour, and limited control over working conditions. Surveys of professional interpreter populations document concerning levels of burnout, with significant proportions reporting emotional exhaustion, depersonalization, and reduced professional efficacy (Schweda Nicholson, 2005).

Chronic stress accumulation without adequate recovery contributes to burnout development. Research indicates that interpreters working in high-demand contexts with limited autonomy and support are particularly vulnerable to burnout (Horváthová, 2010). This occupational hazard has implications for career sustainability and quality of life.

Work-life balance challenges affect many interpreters. Irregular schedules, travel demands, and difficulty disengaging mentally from work contribute to stress and burnout. Studies show that interpreters who establish clear boundaries and maintain activities outside professional life demonstrate better well-being (Zwischenberger, 2013).

Physical Health Concerns

Beyond acute stress responses, chronic occupational stress raises long-term health concerns. While longitudinal health studies of interpreter populations remain limited, available evidence suggests potential risks including cardiovascular problems, hearing difficulties, musculoskeletal issues from static postures, and stress-related conditions (Schweda Nicholson, 2005).

Hearing conservation deserves particular attention, given the extended exposure to amplified sound and the potential for acoustic trauma from equipment malfunctions. Professional organisations recommend audiometric monitoring and hearing protection protocols, though implementation varies across settings (AIIC, 2002).

Voice health represents another concern, particularly for consecutive interpreters and those working without booths. Vocal strain from extended speaking in challenging acoustic environments can lead to voice disorders. Research on interpreter voice health remains sparse but indicates potential occupational risks (Horváthová, 2010).

Professional Standards and Advocacy

Professional organisations have developed standards addressing stress-related working conditions. The International Association of Conference Interpreters (AIIC) provides guidelines on booth standards, team configurations, working hours, and break schedules to manage interpreter stress and maintain quality (AIIC, 2002). Research evidence increasingly supports these standards.

Advocacy for appropriate working conditions continues as research documents stress impacts. Studies demonstrating performance decrements with extended working times or inadequate preparation provide empirical support for professional standards. However, implementation challenges persist, particularly in emerging markets and non-traditional settings (Zwischenberger, 2013).

Discussion

The synthesised evidence demonstrates that conference interpreting involves substantial, measurable stress across physiological, cognitive, and psychological dimensions. Convergent findings from cardiovascular monitoring, neuroendocrine assessment, and neuroimaging establish that simultaneous interpreting activates stress response systems comparably to other high-demand cognitive tasks. The 20-30% elevation in heart rate and increases in cortisol documented across multiple studies indicate significant acute stress responses that reflect the intensive cognitive resource mobilisation required for real-time bilingual processing.

Cognitive load emerges as a central mechanism linking task demands to stress experiences. The interaction of processing complexity, working memory limitations, and attentional demands creates compound challenges that explain both performance variability and stress intensity. Gile's Effort Model receives empirical support from studies demonstrating that when multiple difficulty factors combine—such as fast speech, complex content, and poor audio quality—even expert interpreters experience cognitive saturation and elevated stress. This validates the professional standards that recommend optimal working conditions and appropriate break schedules.

Individual differences substantially modulate stress responses, with expertise representing the most robust moderating factor. The finding that experienced interpreters demonstrate more efficient processing and better stress management aligns with skill acquisition theory and expertise research in other domains. However, the persistence of stress responses even in experts under extreme conditions reveals that expertise shifts rather than eliminates vulnerability. This nuanced understanding has implications for training, suggesting that building expertise reduces but does not eliminate the need for appropriate working conditions.

Environmental and professional factors contribute significantly to stress beyond purely cognitive demands. The consistent identification of inadequate preparation, poor audio quality, and performance pressure as major stressors highlights the multidimensional nature of interpreter stress. These findings support professional advocacy for preparation materials, equipment standards, and working hour limitations, providing empirical justification for practices that might otherwise be dismissed as mere professional preferences.

Expected and Unexpected Findings

Several findings aligned with theoretical predictions and professional experience. The substantial cardiovascular and neuroendocrine responses during simultaneous interpreting were anticipated, given the known cognitive demands, and the expertise effect—whereby experienced interpreters show more efficient stress management—confirms predictions from skill acquisition theory. Similarly, the detrimental effects of poor working conditions and inadequate preparation align with professional standards developed through practitioner experience.

However, specific findings proved unexpected or nuanced beyond initial predictions. First, the persistence of stress responses even in highly experienced interpreters under extreme conditions suggests that expertise provides relative rather than absolute protection, challenging assumptions

about complete stress adaptation. Second, the finding that very brief breaks provide insufficient physiological recovery was more pronounced than expected, with cortisol remaining elevated even after 10-15 minute intervals in some studies (Bontkes et al., 2021). This has important implications for standard break schedules. Third, individual differences in stress responses proved more substantial than cognitive models alone would predict, highlighting the importance of personality and trait factors beyond purely cognitive efficiency. Finally, the limited evidence for chronic health impacts despite clear acute stress responses presents an intriguing gap—either indicating effective adaptation, survivor bias in professional populations, or insufficient longitudinal research.

Limitations of Reviewed Research

The synthesised literature exhibits several methodological limitations that warrant acknowledgement. First, sample sizes in many physiological studies remain small (often $n < 20$), limiting statistical power and generalizability. Second, ecological validity remains an ongoing challenge—laboratory studies offer control but may not capture the authentic complexity of professional practice, while field studies face measurement constraints. Third, most research focuses on Western European interpreting contexts, limiting cultural generalizability. Fourth, publication bias likely exists, with positive or significant findings more readily published than null results. Fifth, longitudinal designs tracking interpreters across career spans remain rare, limiting understanding of chronic stress trajectories. Sixth, neuroimaging research, while promising, faces inherent constraints in simulating authentic interpreting conditions within scanner environments.

Limitations of This Review

This review itself has limitations requiring transparency. The search strategy, while systematic, was not exhaustive—grey literature, unpublished dissertations, and non-peer-reviewed sources were excluded, potentially missing relevant findings. Language restrictions (English, French, German, Spanish) may have excluded important research published in other languages, particularly studies from Asian or Eastern European interpreting contexts. The review's narrative synthesis approach, while appropriate for integrating diverse methodologies, lacks the quantitative precision of meta-analysis. However, the heterogeneity of measures and designs across studies would preclude meaningful meta-analytic aggregation. Additionally, the thematic organisation reflects interpretive choices that alternative frameworks might have structured differently. Finally, the rapid evolution of research methods, particularly in neuroscience and wearable sensing, means that recent technological advances may not yet be fully represented in the published literature synthesised here.

The integration of findings across diverse methodologies presents both strengths and challenges. While triangulation across physiological, cognitive, and self-report measures enhances confidence in conclusions, methodological heterogeneity complicates direct comparisons. Future research would benefit from standardised protocols that enable more systematic comparisons across studies.

Conclusion

Conference interpreting involves substantial stress arising from demanding cognitive processing requirements, challenging working conditions, and professional performance pressures. Research employing physiological measurements, cognitive assessments, and self-report data converges in demonstrating significant acute stress responses during interpreting tasks. These responses reflect intensive cognitive resource mobilisation required for simultaneous bilingual processing under time pressure.

However, stress in interpreting shows considerable individual variation and expertise moderation. Experienced interpreters develop more efficient processing strategies and enhanced coping mechanisms that reduce subjective strain and moderate physiological responses, though even experts show stress under highly challenging conditions. Individual differences in personality, anxiety, self-efficacy, and bilingual control efficiency further influence stress susceptibility.

While acute stress responses during interpreting sessions appear normative and potentially manageable with appropriate working conditions and recovery time, concerns about chronic stress impacts persist. Burnout prevalence, health risks, and career sustainability challenges underscore the need for continued attention to occupational stress management. Professional standards addressing working conditions, preparation time, and scheduling practices receive empirical support from stress research.

Interpreter training programs increasingly incorporate stress management components, including graduated exposure, coping strategy development, and metacognitive skill building. These approaches appear promising for developing resilient professionals capable of sustaining high-quality performance throughout their careers.

This review contributes to the field by providing a comprehensive synthesis that integrates findings across the physiological, cognitive, and psychological dimensions of interpreter stress. The multi-dimensional framework presented here advances theoretical understanding while offering practical implications for training and professional practice. Evidence supports current professional standards while identifying areas requiring enhanced attention, particularly chronic stress management and long-term occupational health support.

Suggestions for Future Research

Despite substantial progress in understanding interpreter stress, several research priorities warrant attention. Most critically, longitudinal studies tracking interpreters across complete career spans remain absent. Such research would illuminate trajectories of adaptation versus vulnerability, identify critical periods for intervention, and clarify whether acute stress responses predict long-term health outcomes. Cohort studies beginning with interpreter trainees and following them through career development would provide invaluable insights into stress resilience and burnout risk factors.

Methodological advances offer promising avenues. Neuroimaging research employing hyperscanning techniques could reveal neural synchrony between speakers and interpreters, potentially identifying interpersonal dynamics affecting stress and communication quality. Combining laboratory precision with ecological validity through wearable sensing and experience

sampling would enhance understanding of the complexity of real-world stress. Such approaches would capture authentic working conditions while maintaining measurement rigour.

Individual differences research requires greater precision. Studies examining genetic polymorphisms that affect stress hormone regulation, combined with cognitive and personality assessments, could identify vulnerability markers to support personalised training approaches. Understanding why some interpreters thrive while others experience burnout despite similar working conditions demands a more nuanced investigation of resilience factors.

Cross-cultural research remains underdeveloped, with most studies focusing on Western contexts. Investigating cultural variations in stress experiences, coping preferences, and occupational norms across diverse interpreting markets would clarify universal versus context-specific factors and inform culturally appropriate support systems. Finally, technology impacts—including remote interpreting platforms, artificial intelligence assistance, and evolving communication modalities—pose evolving stressors that require systematic investigation to inform adaptive training and practice standards.

Acknowledgements

None.

Conflict of Interest

None.

Funding

The author received no funding for this research.

References

- AIIC. (2002). *Workload study—Full report*. International Association of Conference Interpreters. <https://aiic.org/document/628>
- Bontkes, J., Hamann, C., & Giljov, A. (2021). Psychophysiological stress in simultaneous interpreting: A mixed-methods study. *Interpreting*, 23(1), 1–32. <https://doi.org/10.1075/intp.00052.bon>
- Cecot, M. (2001). Pauses in simultaneous interpretation: A contrastive analysis of professional interpreters' performances. *The Interpreters' Newsletter*, 11, 63–85.
- Chiang, Y. N. (2010). Foreign language anxiety and student interpreters' learning outcomes: Implications for the theory and measurement of interpretation learning anxiety. *Meta*, 55(3), 589–601. <https://doi.org/10.7202/045079ar>
- Christoffels, I. K., de Groot, A. M. B., & Kroll, J. F. (2006). Memory and language skills in simultaneous interpreters: The role of expertise and language proficiency. *Journal of Memory and Language*, 54(3), 324–345. <https://doi.org/10.1016/j.jml.2005.12.004>

- Gerver, D. (1976). Empirical studies of simultaneous interpretation: A review and a model. In R. W. Brislin (Ed.), *Translation: Applications and research* (pp. 165–207). Gardner Press.
- Gile, D. (1999). Testing the Effort Models' tightrope hypothesis in simultaneous interpreting—A contribution. *HERMES—Journal of Language and Communication in Business*, 23, 153–172. <https://doi.org/10.7146/hjlc.v12i23.25553>
- Gile, D. (2009). *Basic concepts and models for interpreter and translator training* (Rev. ed.). John Benjamins. <https://doi.org/10.1075/btl.8>
- Gillies, A. (2005). *Note-taking for consecutive interpreting: A short course*. St. Jerome Publishing.
- Hervais-Adelman, A., Moser-Mercer, B., Michel, C. M., & Golestani, N. (2015). fMRI of simultaneous interpretation reveals the neural basis of extreme language control. *Cerebral Cortex*, 25(12), 4727–4739. <https://doi.org/10.1093/cercor/bhu158>
- Hoffman, R. R. (1997). The cognitive psychology of expertise and the domain of interpreting. *Interpreting*, 2(1–2), 189–230. <https://doi.org/10.1075/intp.2.1-2.08hof>
- Horváthová, B. (2010). Occupational diseases of interpreters and their prevention. In *Translation and interpreting as a social practice* (pp. 141–150). Centre for Translation Studies, University of Vienna.
- Jiménez Ivars, A., & Pinazo Catalayud, D. (2001). "I failed because I got very nervous." Anxiety and performance in interpreting trainees: An empirical study. *The Interpreters' Newsletter*, 11, 105–118.
- Klonowicz, T. (1994). Putting one's heart into simultaneous interpretation. In S. Lambert & B. Moser-Mercer (Eds.), *Bridging the gap: Empirical research in simultaneous interpretation* (pp. 213–224). John Benjamins. <https://doi.org/10.1075/btl.3.16klo>
- Köpke, B., & Nespoulous, J.-L. (2006). Working memory performance in expert and novice interpreters. *Interpreting*, 8(1), 1–23. <https://doi.org/10.1075/intp.8.1.02kop>
- Kurz, I. (2002). Physiological stress responses during media and conference interpreting. In G. Garzone & M. Viezzi (Eds.), *Interpreting in the 21st century* (pp. 195–202). John Benjamins. <https://doi.org/10.1075/btl.43.17kur>
- Kurz, I. (2003). Physiological stress during simultaneous interpreting: A comparison of experts and novices. *The Interpreters' Newsletter*, 12, 51–67.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer.
- Lee, T. H. (1999). Speech proportion and accuracy in simultaneous interpretation from English into Korean. *Meta*, 44(2), 260–267. <https://doi.org/10.7202/004616ar>

- Macnamara, B. N., Moore, A. B., Kegl, J. A., & Conway, A. R. A. (2011). Domain-general cognitive abilities and simultaneous interpreting skill. *Interpreting*, 13(1), 121–142. <https://doi.org/10.1075/intp.13.1.08mac>
- McEwen, B. S. (1998). Protective and damaging effects of stress mediators. *The New England Journal of Medicine*, 338(3), 171–179. <https://doi.org/10.1056/NEJM199801153380307>
- Moser-Mercer, B. (2005). Remote interpreting: Issues of multi-sensory integration in a multilingual task. *Meta*, 50(2), 727–738. <https://doi.org/10.7202/011014ar>
- Moser-Mercer, B., Künzli, A., & Korac, M. (1998). Prolonged turns in interpreting: Effects on quality, physiological and psychological stress (Pilot study). *Interpreting*, 3(1), 47–64. <https://doi.org/10.1075/intp.3.1.03mos>
- Moser-Mercer, B., Frauenfelder, U. H., Casado, B., & Künzli, A. (2000). Searching to define expertise in interpreting. In B. Englund Dimitrova & K. Hyltenstam (Eds.), *Language processing and simultaneous interpreting* (pp. 107–131). John Benjamins. <https://doi.org/10.1075/btl.40.09mos>
- Riccardi, A., Marinuzzi, G., & Zecchin, S. (1998). Interpretation and stress. In A. Beylard-Ozeroff, J. Králová, & B. Moser-Mercer (Eds.), *Translators' strategies and creativity* (pp. 93–106). John Benjamins. <https://doi.org/10.1075/btl.28.09ric>
- Schweda Nicholson, N. (2005). Personality characteristics of interpreter trainees: The Myers-Briggs Type Indicator (MBTI). *The Interpreters' Newsletter*, 13, 109–142.
- Seeber, K. G. (2011). Cognitive load in simultaneous interpreting: Existing theories—New models. *Interpreting*, 13(2), 176–204. <https://doi.org/10.1075/intp.13.2.02see>
- Seeber, K. G. (2012). Multimodal input in simultaneous interpreting: An eye-tracking experiment. In *Proceedings of the 6th International Conference on Human Language Technologies* (pp. 105–108). IOS Press.
- Seeber, K. G. (2013). Cognitive load in simultaneous interpreting: Measures and methods. *Target*, 25(1), 18–32. <https://doi.org/10.1075/target.25.1.03see>
- Timarová, Š., Čenková, I., Meylaerts, R., Hertog, E., Szmalec, A., & Duyck, W. (2014). Simultaneous interpreting and working memory executive control. *Interpreting*, 16(2), 139–168. <https://doi.org/10.1075/intp.16.2.01tim>
- Tommola, J., & Hyönä, J. (1990). Mental load in listening, speech shadowing and simultaneous interpreting: A pupillometric study. In J. Tommola (Ed.), *Foreign language comprehension and production* (pp. 179–188). AFinLA Yearbook.
- Zwischenberger, C. (2013). *Qualität und Rollenbilder beim simultanen Konferenzdolmetschen* [Quality and role models in simultaneous conference interpreting]. Frank & Timme.