

Occupational Stress and Coping Mechanisms among Student Audiologists:

A mixed-method study

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“E hara taku toa i te toa takitahi, he toa takitini”

“My strength is not as an individual, but as a collective”

(Alsop & Kupenga, 2016)

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Abstract

Aims: This study aims to identify occupational stressors, their impact and coping mechanisms adopted by student audiologists.

Method: Thirty-five student audiologists enrolled in an Audiology program across twelve locations, including Australia, Canada, Hong Kong, India, Ireland, Israel, Malaysia, New Zealand, Singapore, South Africa, the United Kingdom and the United States of America were recruited for this study.

Results: Thematic analysis of open-ended responses showed clinic-related stressors such as time, management, clinical procedures and equipment as the primary sources of stress. Most student audiologists reported the negative effects of stress with health, behavioural and work-life balance aspects to be adversely affected. Social interactions and physical activities were identified as the most common coping mechanisms used to overcome stress.

Conclusion: Student audiologists are affected by occupational stress and adopt several coping mechanisms to manage stressors.

Abbreviations

- Audiology Occupational Stress Questionnaire (AOSQ)
- Compassion Fatigue (CF)
- Compassion Satisfaction (CS)
- Connor-Davidson Resilience Scale (CD-RISC)
- Evidence-based practice (EBP)
- General Adaption Syndrome (GAS)
- Personal Protective Equipment (PPE)
- Professional Quality of Life (ProQOL)
- Secondary Traumatic Stress (STS)
- World Health Organisation (WHO)

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Introduction

The word 'stress' originates from two Latin words, 'strictus' and 'stringere', which translate to 'narrow' and 'tighten' respectively and represents an individual's constricted and restrained psychosomatic experience when challenged with excess demands (Jin, 2012). A stress response is an unavoidable consequence of modern lifestyle, with modern-day stressors more likely to be of psychological origin that prevail for a longer duration, unlike stressors experienced in the past that were more physical in nature (Bartlett, 1998).

Occupational Stress is a condition experienced by an individual when unable to fulfil the demands of the workplace (Mustafa et al., 2015; Quick & Henderson, 2016; Sauter et al., 1992). A study with Swedish audiologists reported work demands such as assigning tasks beyond an employee's capability or setting unreasonable deadlines to cause occupational stress (Brännström et al., 2016).

Students and professionals in the healthcare industry have been known to experience occupational stress. While there has been considerable attention and research on occupational stress and coping mechanisms in primary medical fields among professionals and students, there have been limited studies on the impact of occupational stress on audiologists. Recent studies have found that professional audiologists suffer from the negative consequences of occupational stress (Brännström et al., 2013; Ravi et al., 2015; Severn et al., 2012). No studies to date have investigated the type of stressors, their impact on student audiologists, and the coping mechanisms used to manage or overcome these stressors. Previous studies measuring occupational stressors among audiologists from Sweden (Brännström et al., 2016), India (Ravi

et al., 2016) and New Zealand (Severn et al., 2012) were primarily focused on quantitative findings with limited qualitative data reported. The Audiology profession has no published guidelines to identify student audiologists who may be at risk of burnout or depression (Mundy, 2006) and are presumed to experience stressors similar to other health professional students. This study aims to address these research questions.

Literature Review

Stress

Bartlett (1998) defines stress as the psychological and physiological response of the body to the daily needs of life. The human nervous system is made up of numerous networks of communicating neurons and non-neuron cells, enabling various parts of the brain to interact and work in tandem to regulate body functions, thoughts, emotions, behaviour, and other activities (Gibbons, 2019). According to Schneiderman et al. (2005), stress is a physiological reaction to physical or emotional needs that causes a compensatory bodily response to equalize homeostatic imbalance due to external forces (Goldstein & Kopin, 2007).

The definition of stress has been refined significantly over the years, attributed to numerous past studies on the topic. Claude Bernard coined the term 'milieu Interieur', which translates to the internal environment and its association with homeostasis (Bernard, 1878). Homeostasis is the ability of an organism to maintain internal equilibrium while adjusting to changes in its external environment (Cooper, 2008). It is an organizing principle that supports steady internal, physical, and chemical conditions. The internal environment is constantly adjusted within limits to maintain a dynamic equilibrium resulting from a change in an organism's environment (Bernard, 1957). The structural composition of the human body (Pruessner et al., 2010) plays a vital role in maintaining homeostasis (Chovatiya & Medzhitov, 2014) and managing stress. Stress is the outcome of intense forces that challenge homeostasis or be perceived to do so (Kültz, 2020).

Hungarian endocrinologist Hans (Selye, 1956) proposed stress as a non-specific body response to any demand. The body undergoes the three physiological phases of **alarm**, **resistance**, and **exhaustion** (Cunanan et al., 2018) as it responds to stress, also referred to as General Adaption Syndrome (GAS).

During the **alarm** stage, the body experiences the initial stress reaction. The stressors cause physical or emotional imbalance (Johnson et al., 1992; Pruessner et al., 2010). As a result, the body initiates an adaptive process and evokes bodily changes such as body temperature, blood pressure, fluids, and sugar level to re-establish the homeostatic balance and protects the organism from acute stress (Chrousos, 2009; Chrousos et al., 2013). Physiological symptoms, including dilated pupils, increased heart rate, fast breathing, tremors, pale skin, and increased sensitivity to senses, including sight, sound, touch, and smell, are commonly seen during the alarm reaction stage.

During the **resistance** phase, the body makes efforts to return to the prestress state and endeavours to repair itself after its initial stress experience. Often, the body recovers quickly from acute anxiety or may encounter difficulties with prolonged stress, affecting the body's ability to return to normal functioning levels (Cunanan et al., 2018). The involuntary physiological reactions act as a protective measure guarding one against any potential hazards. However, over-activation of stress response and bodily changes may significantly affect one's mental and physical well-being.

The prevalence of prolonged and chronic stress may manifest in the **exhaustion** stage. The body depletes all its physical, emotional, and mental resources but cannot cope with stress (Cunanan

et al., 2018). Individuals with chronic stress experience symptoms of fatigue, burnout and reduced stress tolerance. Additionally, excessive stress lowers the immune system and increases the risk of tissue damage, high blood pressure, diabetes, heart disease and mental disorders (Chrousos, 2009; Kasl, 1984).

Lazarus and Folkman (1984) described the transactional model of stress and coping, describing stress as a psychological consequence of the interaction between an individual and his environment, enabling one to judge the situation as taxing or exceeding based on the ability to cope with the situation. The stress experience relies on interpreting an event and the consequence of a thinking process referred to as appraisal and differs drastically across individuals (Walinga, 2014). The cognitive appraisal includes a primary and secondary assessment (Campbell et al., 2013). Primary appraisal is the initial evaluation of a situation to establish if it is likely to threaten one's well-being.

Situations are classified as irrelevant (neutral), challenging (positive) or threatening (negative) based on the initial assessment. Situations that are likely to cause harm or loss are identified as threatening, while events likely to generate growth or gain are challenging (Lazarus & Folkman, 1984). Positive or neutral situations are not perceived as stressful and do not pose any threat. Situations that threaten one's well-being are deemed harmful and go through a second appraisal to evaluate one's ability to cope with a specific situation (Campbell et al., 2013).

The interaction between the primary and secondary appraisals defines the emotional reaction to an event(s) as harm-loss, threat or challenge appraisal. A harm-loss assessment refers to an event when a loss has occurred due to the situation, and the required resources to effectively

manage the stress are unavailable. A threat state is when a situation is likely to cause harm or loss in the future, and one does not have sufficient resources to cope successfully. Conversely, a challenge appraisal occurs when the situation is demanding but one is equipped with adequate resources to meet or exceed the task demands. A harm-loss and threat appraisals are stressful, while challenge appraisals do not impose any threat (Campbell et al., 2013).

Sources of stress

Stressors are broadly grouped into two sources- internal and external. ***Internal*** stressors are the most common source of stress that originates within, such as stress-inducing thoughts or behaviours. Examples of internal stressors include uncertainty, lack of control, fear of failing and setting unrealistic expectations. ***External*** stressors originate from the environment and are often difficult to control, including life events such as relationship difficulties, job loss, financial struggle or significant life events such as the death of a loved one or divorce (Riordan & Saltzer, 1992). Furthermore, external forces such as political, economic, social, and technological changes may impose additional challenges that negatively affect a work setting (Franco et al., 2002). For example, health reforms designed to reduce healthcare costs by downsizing staff have led to excessive workload, reduced patient care and higher employee turnover (Murphy & Murphy, 1996) with high stress and anxiety seen in healthcare professionals. Irrational decisions and poor leadership led to chronic stress and burnout amongst frontline staff resulting from excessive workload, staff shortage, inadequate medical knowledge of testing, short supply of medicines and protection kits, and being unable to support safe physical distancing (Jafree et al., 2021).

Stress is a ubiquitous experience (Zawadzki et al., 2022). An optimal level of stress is constructive as it generates physiological arousal levels to perform better in accomplishing everyday tasks (Weinstein & Ryan, 2011). Ideal stress levels create euphoria, increase motivation and mental concentration, and generate energy and keenness, while too little stress may lead to boredom and inefficiency. Excessive pressure may cause burnout, manifest compassion fatigue, and negatively affect overall well-being (Craig & Sprang, 2010; Robins et al., 2015) and present with physical, emotional, and behavioural symptoms (Bartlett, 1998; Buell & Eliot, 1979).

Occupational Stress

Ravi et al. (2015) define occupational stress as an outcome of the nature of work and its environment, which produces psychological and physiological effects on an individual. The World Health Organisation (WHO) describes occupational stress as a response demonstrated by a worker when presented with work demands that do not match their competencies and challenge the worker's ability to cope (Leka et al., 2003; Rao & Chandraiah, 2012). Occupational stress may negatively impact one's job performance and overall well-being and affect others (Brännström et al., 2013). It may affect healthcare professionals who provide care and support to patients experiencing various problems (Finn & Tomz, 1997). A greater risk of burnout and reduced compassion satisfaction is strongly associated with excessive and prolonged occupational stress.

Compassion Satisfaction (CS) is the positive feeling encountered by individuals when able to perform the job well (De La Rosa et al., 2018). Conversely, **Compassion Fatigue (CF)** is the

outcome of being exposed to clients experiencing trauma or distress that may negatively impact the clinician's mental and physical health, safety, and overall well-being. Healthcare professionals providing care and support to traumatised patients may experience negative physical, psychological, and emotional consequences and may experience a sense of fear and avoidance (Stamm, 2005). Occupational stress can adversely affect workers, reducing compassion, which subsequently minimises job satisfaction, creating a pessimistic feeling towards the job and colleagues (Stamm, 2010). Healthcare professionals commonly report emotional exhaustion due to prolonged stress from stressors. (Leiter & Maslach, 2016). Several studies report a decline in patient care quality due to excessive occupational stress encountered by healthcare professionals (Bruce et al., 2005; Campbell et al., 2001; S. Marriage & K. Marriage, 2005). The **Professional Quality of Life** (ProQOL) Stamm (2010) is a self-administered questionnaire that evaluates the positive (CS) and the negative aspects (CF) of healthcare professionals.

Compassion fatigue further incorporates two elements: **Secondary Traumatic Stress (STS)** and **Burnout**. STS is the emotional duress resulting from exposure to work-related primary or secondary trauma. It is a traumatic response often resulting from being constantly subjected to distressing details of an event experienced by another person (De La Rosa et al., 2018). Burnout is the outcome of prolonged work-related distress causing feelings of exhaustion, lack of productivity, hopelessness, or dissatisfaction with job performance (Byrne, 1993; Maslach, 1998; Stamm, 2010). Burnout has three dimensions- the feeling of energy exhaustion, feelings of cynicism and mental detachment from one's job, and a sense of decreased professional effectiveness (Maslach, 1998; Stamm, 2010). Burnout is the outcome of poorly managed

chronic work-related distress, while secondary traumatic stress is the detrimental effect of helping others (Stamm, 2010). Burnout, CS and CF are critical indicators of occupational stress (Severn et al., 2012).

Occupational stress in healthcare professions

Healthcare professions such as medicine, nursing, and other allied disciplines are highly demanding, as workers engage in continuous strong and intense personal-emotional contact with emotionally vulnerable patients (Leiter & Maslach, 2016). The prevailing norms of the primary medical industry set standards for healthcare professionals to be selfless, compassionate, and willing to work long hours (Swanwick, 2018). This has been found to generate significant work-related stress (Ferrans, 1990), with excessive stress leading to adverse ill-health (Mohren et al., 2003; Ursin & Eriksen, 2004). Healthcare workers are exposed to physical, emotional, and psychological distress and are more susceptible to burnout and depression (Martin et al., 1997; Parola et al., 2017).

Occupational stress among audiologists

Numerous studies on occupational stress and professional quality of life have been done with several healthcare professionals. However, only a few studies have been conducted in the field of Audiology in New Zealand (Severn et al., 2012), India (Manchaiah et al., 2015; Ravi et al., 2015), Sweden (Brännström et al., 2016), America (Emanuel, 2021; Zimmer et al., 2022) and Australia (Simpson et al., 2021). The Audiology Occupational Stress Questionnaire (AOSQ) was used as a measure of stress in some of these studies, including New Zealand (Severn et al., 2012), India (Ravi et al., 2015), and Sweden (Brännström et al., 2016).

Severn et al. (2012), investigating occupational stress amongst New Zealand Audiologists, reported six stressors, namely, time demand, audiological management, patient contact, clinical guidelines, patient accountability and administration. However, the study did not include stressors and coping mechanisms among student audiologists. The stressors reported were found to be different to other studies. Seven stressors, including time spent at work, accountability, workplace leadership, paper workload, equipment and clinical protocols, health concerns and job controls, were identified in the Swedish study (Brännström et al., 2016).

Zimmer et al. (2022) reported low levels of burnout and compassion fatigue, along with increased compassion satisfaction among American audiologists. These findings were different to the Severn et al. (2012) study, which reported 'time pressure' as a significant predictor of burnout along with low-level compassion satisfaction. 'Patient contact' was found to be a strong indicator of compassion fatigue among New Zealand audiologists. Additionally, the increased stress level was reported by younger audiologists working in public settings as compared to experienced or private working audiologists. Conversely, no significant relationship between gender, location, years of experience or work environment and stress was found in the American study (Zimmer et al., 2022). The study by Brännström et al. (2016) reported similar stress levels across public and private audiologists, with the years of experience having no impact on the level of stress.

Stress among healthcare students

Based on the earlier assumption that students were only expected to study and that studying was not recognised as stressful, it was presumed that students were least affected by stress (Reddy et al., 2018). However, the reality has been far different and alarming. Several studies on mental health have reported a warning proportion of university students to suffer from depression, anxiety, and suicidal tendency globally (Batra et al., 2021; Kassir et al., 2021; Kohls et al., 2021; Steinmetz et al., 2021; Wang et al., 2020; Wathélet et al., 2020). Fuse-Nagase et al. (2021) investigating the mental health symptoms among undergraduate students across 82 universities reported a suicide rate of 17.6 in total (per 100,000) during 2020-21. These alarming suicidal rates of 21.8 for men and 11.3 for women recorded were the highest suicidal death rates seen in the last eight and six years respectively. Stress in students is seen to have multiple effects and could negatively affect academic performance, cognitive functioning, and learning (Pascoe et al., 2020).

Birks et al. (2009) reported that university students experience many stressors, such as academic demands, adjusting to an unfamiliar environment and new people, and being able to manage financially, emotionally, and socially independently. Additionally, healthcare students experience other potential stressors relating to providing support and care to distressed patients, often over a prolonged period and the need for continuous learning of applied clinical skills. Other aspects, such as the rapid growth seen in the healthcare sector in recent years, advancements in technology, new knowledge and content, increasing demand for healthcare services, and increased responsibilities borne by healthcare workers have contributed to the rising stress levels seen in healthcare students (Higgs et al., 1999).

Students pursuing healthcare courses experienced a higher prevalence of stress and depression (Adlaf et al., 2001; Dahlin et al., 2005; Dyrbye et al., 2005; Jones & Johnston, 1997; Monk, 2004; Pau & Croucher, 2003; S. L. Shapiro et al., 2000) than the general population (Deary et al., 2003; Ibrahim et al., 2013). Studies with healthcare students revealed a significant positive correlation between stress and burnout (Morgantini et al., 2020). Students showed burnout-related symptoms of cynicism, loss of empathy and detachment (Kachel et al., 2020). Westman and Eden (1996) reported a U-shaped curve representing a non-linear relationship between stress and performance. Low-stress levels correlate to a low level of performance, and a rise in pressure to an optimal level creates a surge in performance. However, a further increase in stress results in a negative relationship between performance and stress, with increased pressure beyond the optimal level associated with a reduction in performance (Tamar Jacob et al., 2013; Sarid et al., 2004; Seaward, 2021). Healthcare students experience numerous sources of stress, including academic (performance and grades), clinical (productivity demands, complex cases) and personal (work-life balance, financial).

Academic Stressors

Healthcare schools provide theoretical and practical scientific education to future healthcare professionals enabling them to deliver high-quality patient-centred care (Aththiligoda et al.; Snell et al., 2000). Academic burnout is the outcome of excessive and prolonged academic pressure causing adverse emotional, psychological, and physical effects on a student (Ezeudu et al., 2020). The condition may manifest itself with multiple symptoms, such as cynicism, emotional exhaustion, and incompetence (Hwang & Kim, 2022; Oloidi et al., 2022). The feeling of being depleted and drained due to academic demands is referred to as emotional

exhaustion. At the same time, cynicism is the sense of disconnection as students distance themselves from their studies, impacting student learning outcomes (Schaufeli et al., 2002). Incompetence refers to a decreased sense of self-efficacy, with students constantly feeling unskilled and low in confidence (Bitran et al., 2019). Other severe consequences include disengagement symptoms such as low motivation, diminishing academic performance, and eventually leaving school before course completion (Jagodics & Szabó, 2022). While increased stress levels and decreasing patient empathy are intertwined (Voltmer et al., 2021), academic stress has been found to be a significant indicator of poor mental health among medical students (Voltmer et al., 2021; Voltmer et al., 2012). Dyrbye et al. (2008), examining stress among students in medical schools, reported that 47% of students experienced depressive symptoms, 50% with burnout and 25% with suicidal ideations.

A study investigating stressors across programs and years of study among Physical Therapy, Communication Disorders and Nutrition Science students reported academic demands to be the primary source of stress (T. Jacob et al., 2013). Increased stress and anxiety experienced by nursing students have been attributed to excessive workload, rigid curriculum, intense competitive settings and nursing license examination preparation (Lee & Lim, 2017). Similarly, Ruzhenkova et al. (2018) reported anxiety, burnout, distress and depression among medical students due to the intense academic workload and pressures of school and residency, with senior students being better able to cope better than students in their initial years of study (S. L. Shapiro et al., 2000; Vitaliano et al., 1989). The prevalence of stress was reported to be highest during the first three years of the study, progressively reducing over the later years of the course (Inam, 2007; Rosiek et al., 2016; S. L. Shapiro et al., 2000).

The reduction in the stress level assumed that students became accustomed to academic pressure over time (Tucker et al., 2006). Medical students reported a higher prevalence of depression (12.9%), with a greater incidence among women than men (Dahlin et al., 2005). The overall anxiety level across both men and women medical students was the same during the first year of study (Shah & Ahmed, 2013). However, there is a degree of inconsistency, with few studies suggesting women are more likely to develop stress than men in the initial years of study (Abdulghani et al., 2011; Saeed et al., 2016).

Clinical Stressors

Healthcare professions such as nursing (González-García et al., 2021; McKenna & Plummer, 2013), medicine (Alsiö et al., 2019; Tan et al., 2014), speech pathology (Lincoln et al., 2004), audiology and other allied health disciplines (Esteghamati et al., 2016) have a clinical component attached to their professional training program. Healthcare students are required to complete certain clinical hours as part of their curriculum, as it offers a set of professional and clinical competencies and academic credits (Alsiö et al., 2019; Ataş & Talo Yildirim, 2020; Esteghamati et al., 2016; Michel, 2018).

Clinical training is integral to healthcare learning, with evidence suggesting clinical supervision is imperative for professional performance (Lyth, 2000; Todd & Freshwater, 1999). Workplace-based knowledge allows the application of relevant theory to evidence-based clinical practice, facilitates student-client engagement and develops attitudes and behaviours essential for the provision of high-quality patient care (Chapman & Orb, 2001; Littlewood et al., 2005). Hence, the quality of the clinical environment and the competency of clinical supervisors play a critical

role in enhancing clinical practice (González-García et al., 2021). A student failing clinical placement may feel professionally ineffective (Tully, 2004) and may reconsider other career options (Beck, 1993). Clinical education experience can be particularly stressful for students with no previous clinical exposure (Admi, 1997; Mahat, 1998). Scully (2011) reported increased stress and anxiety among novice nursing students as students struggled to consolidate best practice theory learnt in the classroom into real-life clinical settings.

Additionally, a student's attitude, behaviour, and performance are influenced by their supervisor's perspective (Yee, 1969). A study examining nursing staff turnover reported that nurses with a supportive supervisor were less likely to quit their profession (Halter et al., 2017) and was proposed as a solution to resolve the ever-increasing attrition rate of nurses (Buchan & Dovlo, 2004). Adequate supervision includes providing constructive and regular feedback to students, allowing time for students to reflect on their practice and utilising a style of leadership that will improve a student's performance, skills, and competencies (Clynes & Raftery, 2008; Gray & Smith, 2000; Ladany et al., 2013). Conversely, an authoritative supervision style may lead to stress and anxiety, creating a sense of self-doubt, and loss of motivation, reducing creativity and initiative, subsequently deterring students' growth and performance (Ladany et al., 2013; Saras, 1994).

Evidence-based practice (EBP) guides healthcare professionals to make informed clinical decisions supporting safe, high-quality, effective, and efficient health services. The theory-practical gap is the disconnection between theory and clinical practice (Greenway et al., 2019; Rolfe, 1996). A theory-practice gap is a common source of stress reported in previous studies in the field of medicine (Beane et al., 2017), nursing (Hanberg & Brown, 2006; Shoghi et al., 2019),

dental (August et al., 2018; Chutinan et al., 2021), occupational therapy (Steward, 1996), speech and language therapy (Greenwell & Walsh, 2021; Zipoli Jr & Kennedy, 2005) and other allied health disciplines. Calleja et al. (2016) suggested that the inability of students to engage with constructive feedback and adapt self-correction behaviour resulted in a theory-practical gap.

Clinical placements across different healthcare providers, learning new technology, maintaining professional relationships with supervisors and patients, and dealing with traumatised patients with deteriorating medical conditions are additional sources of stress encountered during clinical training (McKenna & Plummer, 2013).

Financial Stressors

Economic hardship may negatively impact a student's experience of their education programme (Cuthbertson et al., 2004; Rhead, 1995). Many countries provide financial aid through student loans to support higher education (Johnstone & Marcucci, 2007; Mitchell, 2020; Shen & Ziderman, 2009). For example, the NZ student loans scheme was introduced in 1992 to reduce the barrier to participation due to tuition fees and to pursue higher education, allowing students to repay the amount upon course completion (Sorensen & Winn, 1993). An increasing number of students are undertaking paid part-time employment due to varied factors such as poverty, insufficient parent contribution, low income, debt, rise in tuition fees and cost of living (Curtis & Shani, 2002; Ford et al., 1995; Webster et al., 2017; Woodhall, 1987). Several studies have reported financial stress as an indicator of students' well-being (Bernice Andrews & John M Wilding, 2004; Roberts et al., 1999). A change in the United Kingdom

education policy to replace student grants with student loans has laid significant financial stress on students (Belfield et al., 2017), and a comparative study between the years 2015-16 and 2005-06 reported an increase in student suicide death by 79% and mental health problems by five times (Thorley, 2017).

Rochford et al. (2009), examining financial problems among undergraduate nursing students, reported the number of hours worked weekly as a predictor of a student's grades, course performance and experience. Economic challenges and depression (B. Andrews & J. M. Wilding, 2004; Carney et al., 2005), along with full-time study with part-time employment, have been found to adversely affect students' academic performance (Blaga, 2012; Kosi et al., 2013).

COVID-19

The coronavirus outbreak enforced additional challenges on healthcare students and professionals (Lee et al., 2021). The healthcare workforce suffered from stress, anxiety, distress and burnout following the outbreak of COVID (Huckins et al., 2020; Kecojevic et al., 2020). Following the lockdown orders, healthcare schools remained closed, with clinical training cancelled, and students had to quickly adapt to the new online learning settings (Kecojevic et al., 2020; Kisely et al., 2020; Lee et al., 2021). Students had to leave on short notice due to concerns for the safety of their family and friends (Brown & Kafka, 2020). Many students with part-time income lost their jobs and encountered financial hardship (Begum et al., 2020). The pandemic impacted the professional practice of healthcare and limited healthcare services. The healthcare system battled with staff shortages and absenteeism due to illness or the need to care for a family member. In Denmark, final-year medical students were recruited as temporary

residents to mitigate staff shortages (Rasmussen et al., 2020). Healthcare professionals and trainees assigned tasks during COVID had to learn new ways to ensure safety and infection control, such as using a Personal Protective Equipment (PPE) kit and maintaining social distancing during clinical procedures (Gold, 2020; Kisely et al., 2020).

Impact of stress

Stress and burnout can impact professional and personal lives. Excessive stress can result in poor academic performance (Mladen et al., 2019), lack of professionalism (Dyrbye et al., 2010; Gallegos et al., 1990), low-quality patient care (Williams et al., 2007) and physical and emotional problems (Mladen et al., 2019).

Chronic stress may manifest in the form of attitude problems such as feelings of isolation, distrust and cynicism. Cynicism is commonly seen in healthcare students (Testerman et al., 1996) and may result in burnout, derogatory and cynical humour, and a drastic decline in empathy towards patients (Kopelman, 1983). The pathophysiologic due to excessive and prolonged stress may lead to behavioural symptoms of anger, nervousness or irritability (Li et al., 2008). Other symptoms include binge-eating habits (Medisauskaite & Kamau, 2019), absenteeism (Deary et al., 2003; Hughes, 2002) and usage of psychoactive substances such as smoking, alcohol, and drugs to cope with stress. Among medical students, substance usage was highest during the first three years of study (Inam, 2007; Johnson et al., 1990). Chronic stress may result in students dropping out. The dropout rates of students pursuing healthcare courses, including nursing, medicine, occupation therapy, speech and language, and audiology, are higher than the general population (Watson et al., 2008).

Coping Mechanisms

Coping refers to the cognitive, emotional and behavioural responses mobilized to mitigate a stressful situation (Alqarni & Alasmee, 2020; Mivšek et al., 2018; Seyedfatemi et al., 2007).

Coping and cognitive appraisals are significantly related. They rely on what is at stake and the options available for managing the situation (Folkman et al., 1986).

According to Folkman and Lazarus (1988), coping strategies can be broadly classified into problem-focused and emotion-focused approaches. Problem-focused coping methods also referred to as adaptive or positive strategies, are designed to adapt or modify the situation when managing the demands of a stressful event, while emotion-focused coping strategies regulate feelings associated with stress and enable the individual to engage in activities to self-distract. The type of coping strategies adopted is dependent on the response of the environment and the action taken. Problem-focused plans are likely to be implemented when the results of a stressful event are evaluated as being amendable to change, whereas emotion-focused forms of coping are applied when it is predicted to be unchangeable (Folkman & Lazarus, 1980).

Factors such as organisational climate and management processes can either reduce or increase burnout. Occupational stress and burnout are suggested to be reduced with management regulating employee empowerment and demonstrating leadership behaviour (Gill et al., 2010). Supervisory and social support plays a critical role in managing stress and anxiety and is inversely related to burnout (Surana et al., 2011). Several initiatives have been undertaken by healthcare schools to mitigate the increasing depression and burnout

encountered by their students. For example, a comprehensive wellness programme, WellMed, has been implemented by the Albert Einstein College of Medicine to address the increasing risk of depression. The programme has partnered with the Department of Psychiatry, which enables students to have direct access to advanced psychiatric services (Ludwig et al., 2015).

Mindfulness-based stress reduction is an effective mindful training programme aimed at improving coping skills and minimising psychological distress (Rosenzweig et al., 2003). Other solutions, such as establishing multi-disciplinary teams to resolve student-specific clinical clerkship issues, responding timely to student feedback and providing well-guided progress throughout the course, are also being done to manage stress (Moffat et al., 2004).

While certain situations may create anxiety for some, the exact circumstances can be stimulating for others (Cincotta, 2005). The implementation of conscious strategies to reduce unpleasant situations' physical, psychological or social harm is coping (Carroll, 2013; Dewe, 1991). Coping styles are behavioural and cognitive efforts to overpower or minimize the effects of stressors. Active and Avoidance coping are two coping mechanisms.

Active coping is a vital component of resilience that enables one to indulge in an adaptive approach to reduce stress. Responses aim to change the nature of a stressful event to minimise harm or modify thinking and feeling about the event, thereby changing one's response. Factors such as the type of coping strategy used and the availability of support services are predictors of well-being (Galvin & Smith, 2015).

Active coping includes changing environments, planning activities, problem-solving, seeking information, searching for social support and professional guidance, and having a new outlook on issues when managing a stressful situation (Zeidner & Endler, 1995).

Avoidance coping is one of the emotional-focused coping mechanisms involving cognitive and behavioural attempts to deny, reduce or avoid a stressful situation and has been found to be associated with distress and depression (Holahan et al., 2005; Penley et al., 2002).

Rationale for the study

With no literature available on occupational stressors amongst student audiologists, this study aims to establish a holistic view of the topic by analysing and interpreting responses obtained from AOSQ open-ended questions and linking them to the AOSQ factor scores obtained from the closed-ended questions. The study aims to gain a better understanding of occupational stressors, their impact, and coping mechanisms for student audiologists.

Research Aim

Aim of the study

The study aims to identify underlying themes related to the nature of occupational stressors experienced by student audiologists, the impact of stressors on everyday living, and coping mechanisms frequently used to manage the stressors.

Research Questions

1. What are the different occupational stressors experienced by student audiologists?
2. How do the stressors affect student audiologists?
3. What are the different coping mechanisms adopted by student audiologists to relieve stress?

Methodology

Participants

The participants for the study were recruited through word of mouth, advertisements through professional bodies and the study author's network of personal contacts. A total of 204 Audiologists (Female= 181 and Male= 23) were recruited across 12 locations, including Australia, Canada, Hong Kong, India, Ireland, Israel, Malaysia, New Zealand, Singapore, South Africa, the United Kingdom and the United States of America. Of the 204 participants, 35 were student audiologists enrolled in an Audiology program and are the population of interest for the current study.

Research Design

A mixed-method study reporting on the qualitative data aimed at identifying the underlying themes based on the open-ended responses obtained from the AOSQ (Severn et al., 2012). The population of interest is student audiologists. The study design can be described as a cross-sectional survey-type research design. The study measures qualitative data to gather a holistic view of the topic.

Procedure

The advertisement for the study included a weblink that directed interested participants to the Qualtrics online survey. Interested participants recruited through the audiology newsletters, word of mouth and contact network were provided access to the structured questionnaire via the Qualtrics online survey portal through weblink Qualtrics portal collected the qualitative data for analysis. The quantitative data is stored in Microsoft Office Excel.

The survey questionnaire comprised demographic questions, the Audiology Occupational Stress Questionnaire (AOSQ), the Connor-Davidson Resilience Scale (CD-RISC), and the Compassion fatigue and Compassion satisfaction sub-scales of the Professional Quality of life (Pro-QOL).

Demographic variables of interest included age, country, gender, ethnicity, years of studying audiology, health conditions and if there was any impact on student's ability to pursue their studies, type of qualification (Bachelor, Master or Doctorate) and duration of the course (full or part-time)

AOSQ (Severn et al., 2012) is a two-part questionnaire comprising content and an open-ended section. The content section includes 37 closed-set questions from five themes: 1. Paperwork and administration, 2. Patient content and clinical time 3. Professional responsibility and health 4. Management of professional life at work 4. Management of social life outside work. A total of 36 content section questions are scored using a 7-point Likert scale system, ranging from *never stressful to extremely stressful*, respectively, while one question obtains ranking responses to stressors. The open-ended section comprises three open-ended questions aimed

at identifying the most significant stressors, their impact on the individual and the coping mechanisms used to relieve occupational stress.

Pro-QOL (Stamm, 2005) is a 30-item questionnaire that evaluates the professional quality of life experienced by healthcare workers. Pro-QOL responses are measured using a 5-point Likert scale: Never, Rarely, Sometimes, Often and Very Often. The Pro-QOL measures three elements: compassion satisfaction, compassion fatigue and burnout. A score of 23 or greater is considered compassion satisfaction. Conversely, a score less than 23 is considered compassion fatigue. Burnout and secondary traumatic stress (STS) comprise compassion fatigue. A response score of 43 or lower has a minimal risk of burnout, while a score higher than 43 is associated with a greater chance of burnout when measuring the burnout element on the sub-scale.

CD-RISC 10 is a shortened version of CD-RISC (Connor & Davidson, 2003) and comprises ten statements that evaluate the psychological resilience of the respondents by indicating how well each statement relates to them. The level of resilience of being able to bounce back after a stressful event is scored using a 5-point Likert scale system, ranging from *Not at all true*, *Often true*, *Rarely true*, *Sometimes true*, and *True nearly all the time*, respectively. Scores for each statement indicated by the respondent are summed to obtain the overall resilience score, and a higher score indicates a higher level of resilience.

Data Analysis

The responses obtained from the three open-ended questions were coded and peer-reviewed to draw similarities or differences across data findings. The application of thematic analysis allowed a better understanding of the participants responses through themes. Six stages of thematic analysis by Braun and Clarke (2006) were used to identify essential themes from the responses. The stages included 1. Data familiarisation, 2. Generation of initial codes, 3. Searching for themes, 4. Reviewing themes, 5. Defining and naming themes, 6. Producing the report.

Data familiarizing was the first step of thematic analysis. Prolonged engagement with the data enabled the deriving of meaning, patterns and a deeper understanding of the content. Raw data was archived in a systematic manner and was stored in a central repository. This permitted an audit trail and a comparison with future data analyses and interpretations for appropriateness. The data was extrapolated into Microsoft Excel, with three spreadsheets created for stressors, effects of stress and the coping mechanisms within the same excel file, along with unique participant codes.

Generation of codes was the second stage. Sorting and organizing of data helped in identifying specific characteristics of the content. The coding of transcripts was carried out by highlighting excerpts related to the initial set of codes. Patterns emerged as discrete extracts of data were analysed, categorised and labelled to specific codes using colour indicators. Having more than one researcher to analyse each data set through peer debriefing in the coding process

improved the credibility of the study. Minutes of team meetings and changes to the analytic approach were well-documented to establish trustworthiness.

Searching for themes was the next step. Although previous studies on similar topics were helpful, the primary themes were inductively produced from the open-end responses. The inductive analysis generated rich descriptive content and minimised the risk of research bias. Thematic networks to project hierarchical codes and themes provided a better understanding of the text at varying levels of specificity. The conceptual framework was produced with two broad higher orders, i.e. internal and external stressors aligning to their corresponding lower order codes of self, client and clinical related stressors. No codes were eliminated at this stage, and codes that did not fit in the main themes were momentarily stored under the 'miscellaneous' theme.

Reviewing themes refers to the refining of coded data extracts into a set of themes that concisely describe the text. Multiple themes similar to each other were merged, while some themes were disintegrated into separate themes. Dissimilar themes or themes with poor supporting data were removed at this stage to outline a clear pattern.

Defining and naming themes was the next step. Themes were assigned clear names that immediately conveyed the story that the themes were telling. Upon the completion of the theme names, it was then presented for peer debriefing for completeness and clarity. This ensured the names precisely conveyed the feeling of what the theme was about.

Report generation was the final stage in thematic analysis. Microsoft SmartArt graphic was used to graphically represent the hierarchical relationships between the higher and lower orders of themes and subthemes.

Results

Stressors

The stressors were broadly classified into groups -internal and external stressors, as shown in figure 1. The results of the current study indicated a higher proportion of student audiologists (n= 108) were impacted by internal than external (n=2) stressors. Thematic analysis of the responses revealed four main themes: self, client, clinic (internal) and covid (external). Among the internal stressors, clinic-related stressors were found to be most reported by participants (n= 77) as compared to self (n= 21) and client-related (n=10) stressors.

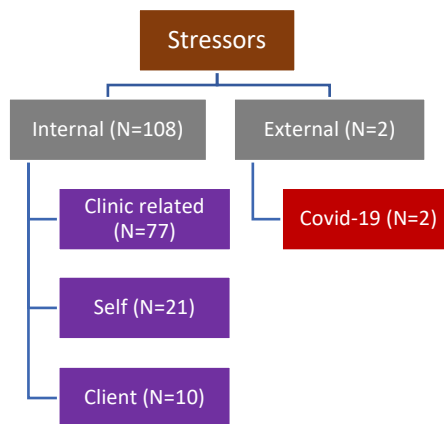


Figure 1: Internal and External stressors reported by student audiologists

Theme 1: Clinic-related

Theme 1 described the stressors related to time pressure, management & supervision, clinical protocols & procedures and challenges with equipment & resource, as shown in figure 2. In regard to time, participants (n=28) described how time constraints around client consult and report writing evoked stress.

Participant 6: not enough time for reports

Participant 22: time restriction of a consult

Another clinic-related theme that emerged was management and supervision. Participants (n=22) reported feeling stressed due to poor leadership, supervision style and inadequate support from peers.

Participant 20: Supervisors not teaching properly

Participant 30: Inconsistent leadership/guidance

With regard to clinical protocols, participants (n=21) described stress caused due to lack of knowledge and experience in diagnostic assessment and device fitting. Additionally, student audiologists experienced stress associated with seeking suitable solutions for their clients.

Participant 17: Wanting to give accurate treatment (P17)

Less frequently, student audiologists (n=6) reported stress due to unfamiliarity with the range of equipment available, lack of experience in the usage of equipment due to poor accessibility and challenges with using outdated resources.

Participant 21: Having so may ["sic" "many"] students in the room during each teaching session with a client

Participant 29: Several types of equipment for the same thing

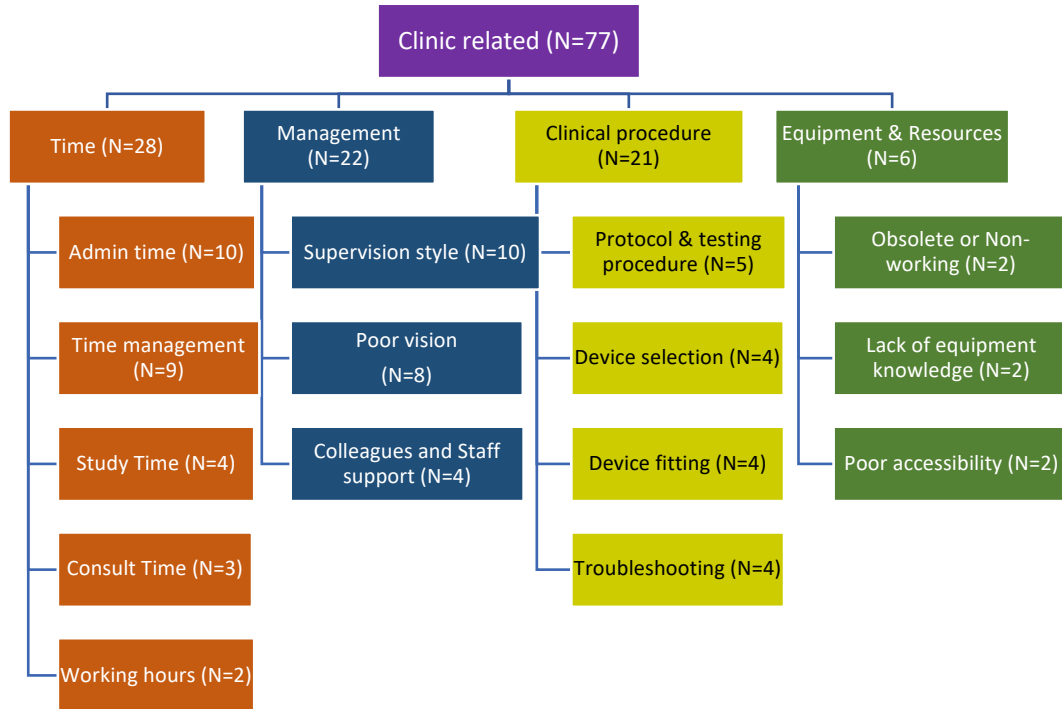


Figure 2: Clinical-related Stressors reported by student audiologists

Theme 2: Self

Theme 2 describes the personal stressors related to the participant’s psychological, physical, emotional, and financial well-being, as shown in figure 3. Stressors related to study, work-life balance, and introspection were the commonly reported themes. Students reported experiencing stress due to academic demands and new learning (n=9), work-life balance (n=5), study (n=9) and negative emotions due to feeling inexperienced (n=4). Other stressors reported by students included eating habits (n=1), health (n=1) and financial constraints (n=1) due to student loans or limited income.

Participant 12: Not able to turn off at home

Participant 17: Absorbing new information

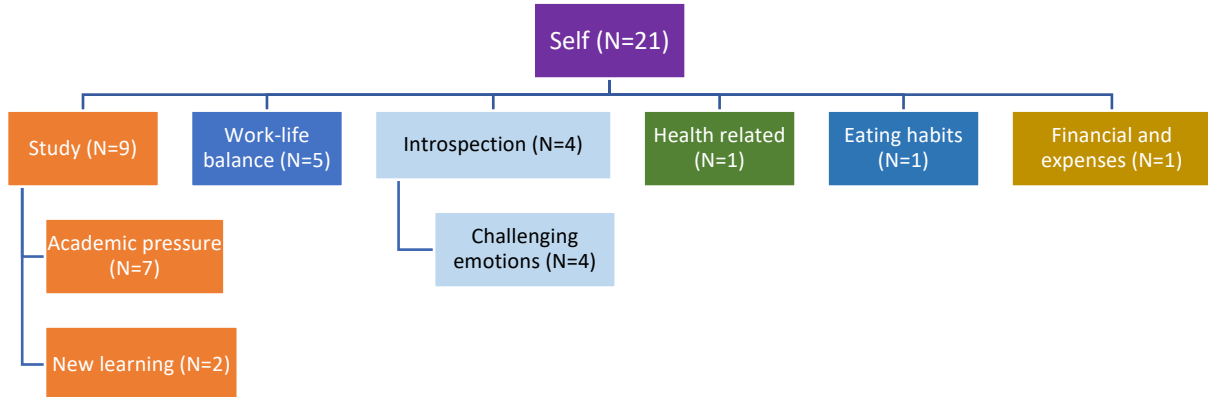


Figure 3: Self-related Stressors reported by student audiologists

Theme 3: Client-related

Theme 3 describes the stressors associated with client consultation (n=6) and dealing with challenging clients (n=4), as shown in figure 4. Stress reported was related to student audiologists' communication skills when having difficult conversations with their clients.

- Participant 28: Discussing benefits of hearing aids with certain clients

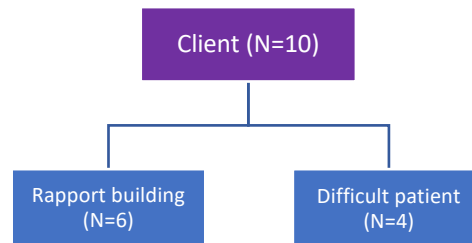


Figure 4: Client-related stressors reported by student audiologists

Theme 4: Covid

Covid emerged as a theme, with two participants reporting stress due to covid, as shown in figure 1.

Effects of Stress

The effects of stress reported by student audiologists were classified as positive, negative, or minimal-to-no stress based on their impact, as shown in figures 5, 6 and 7. Three participants reported minimal-to-no stress, while one participant experienced a positive effect of stress. The majority of student audiologists (n=42) reported the negative effects of stress. Health-related stressors, including physical, mental and sleep symptoms, were found to be the most reported impacts of stress. Student audiologists reported headaches, fatigue, sleep disruption, anxiety, fear, low motivation and confidence. Additional effects on eating habits and the ability to manage expenses and debt were reported. Poor work-life balance due to excessive working hours, lack of personal time and study time were other reported effects of stress that resulted in a negative impact on student audiologists. Furthermore, behavioural effects such as difficulty staying focussed & performance inefficacy, feeling discouraged, and strain on relationships were other adverse effects of stress reported by student audiologists.

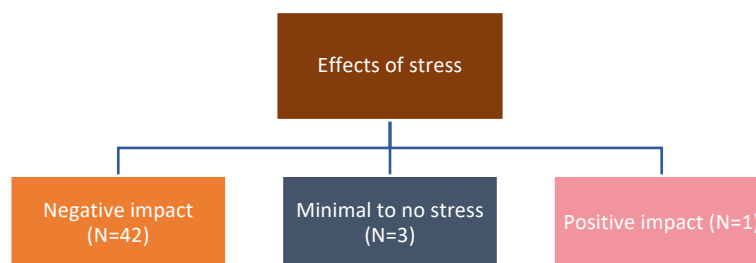


Figure 5: The effects of stress reported by student audiologists

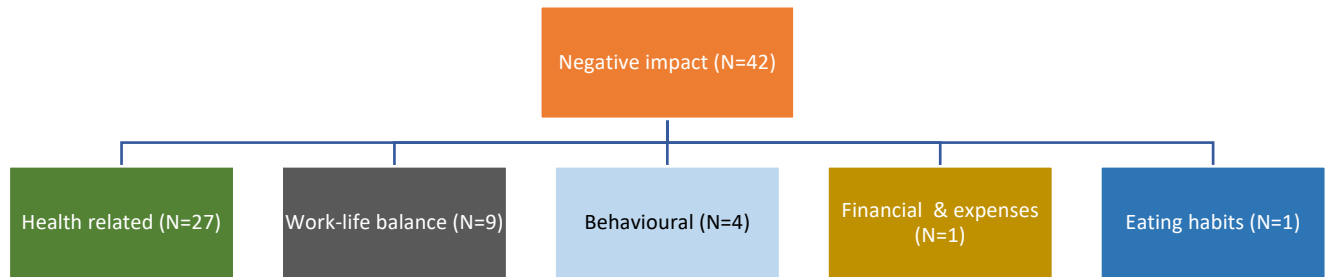


Figure 6: The adverse effects of stress reported by student audologists

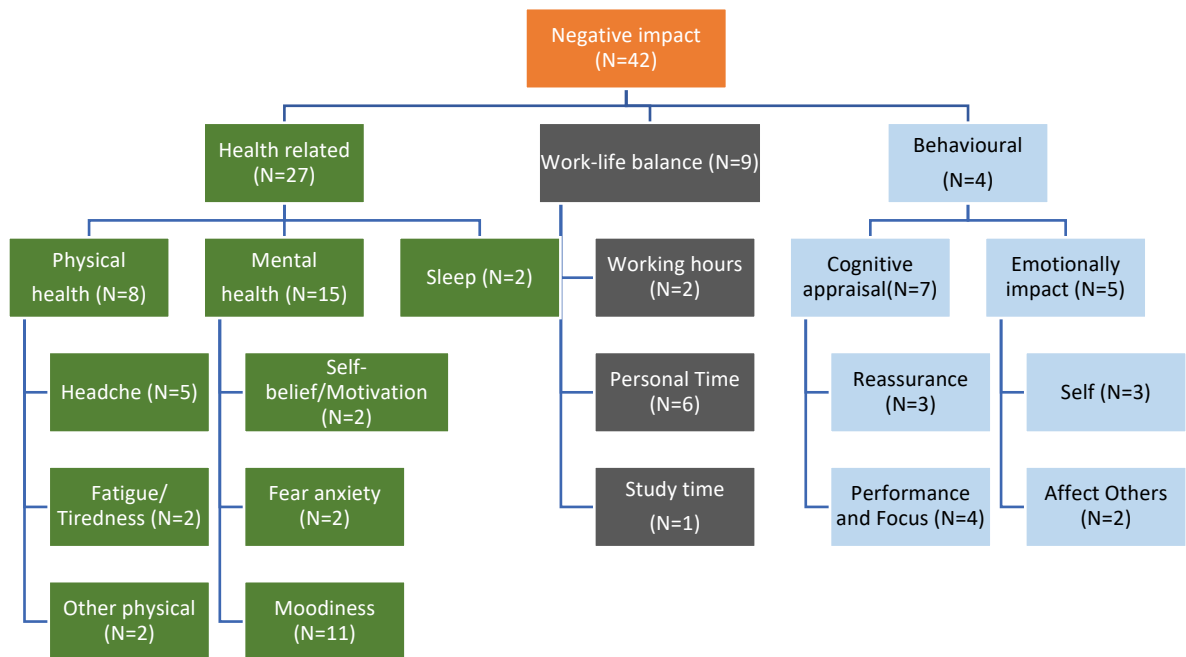


Figure 7: Health, work-life and behavioural effects of stress reported by student audologists

Coping Mechanisms

Student audiology reported using a range of coping mechanisms to help relieve stress. These were grouped into five themes, as shown in figure 8.

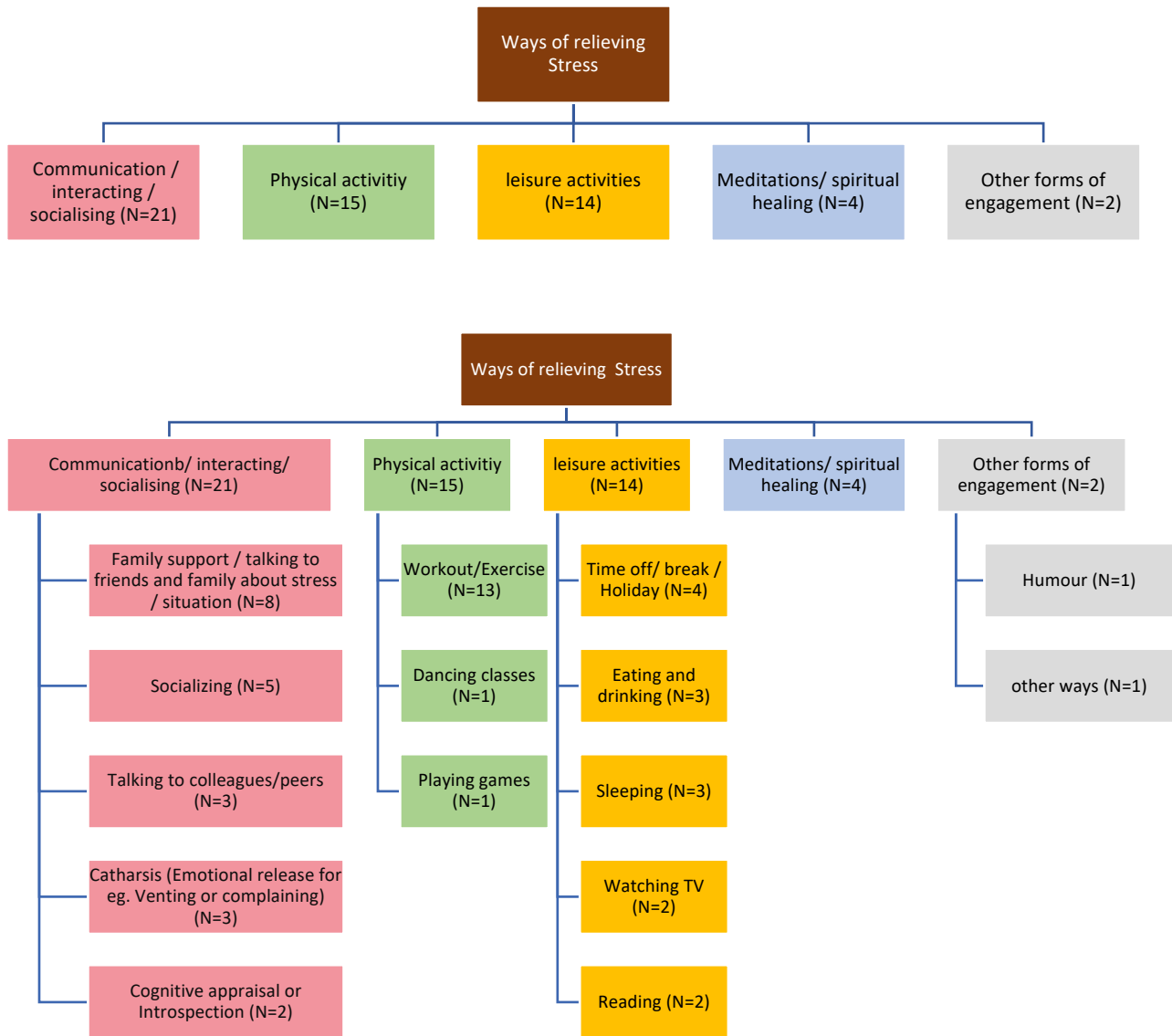


Figure 8: Coping mechanisms reported by student audiology

Theme 1: The majority of student audiologists (n=21) reported using communication and social interaction as coping mechanisms in the form of spending time with family, catharsis, debriefing with peers, meeting with friends and introspection.

Participant 18: Going out with friends for a coffee or a drink afterwards

Participant 24: Complaining

Theme 2: Engaging in physical activities such as exercise, dance and playing games was the next most commonly reported coping mechanism (n=15).

Participant 25: Exercise regularly when possible (P25)

Theme 3: Student audiologists (n=14) reported using leisure activities such as watching tv, reading, sleeping, taking time off and eating/drinking to relieve stress.

Participant 26: Taking breaks when possible (P26)

Theme 4: Meditation and spiritual healing, such as participating in yoga and church, were reported as coping mechanisms by four participants.

Participant 6: Yoga

Theme 5: Humour and seeking constructive ways to mitigate stress were reported as some other ways student audiologists (n=2) relieved stress.

Discussion

The study aimed to identify different occupational stressors experienced by student audiologists, the effects of those stressors and the coping mechanisms adopted by students to relieve stress. High levels of occupational stress were reported by student audiologists in this study. Prolonged stress has been associated with an increased risk of compassion fatigue and burnout and may present with physical, emotional, and behavioural symptoms (Bartlett, 1998; Buell & Eliot, 1979).

The findings of this study share similarities with previous studies exploring occupational stress among audiologists in New Zealand (Severn et al., 2012), America (Emanuel, 2021; Zimmer et al., 2022), India (Ravi et al., 2015) and Sweden (Brännström et al., 2016). Demand on time was found to be the most commonly identified sub-theme among student audiologists in this study. Time demand was also recognised as the most common stressor in the study by Severn et al. (2012), with a third of the audiologists reporting moderate or higher levels of stress due to demands on time.

Managing large caseloads and short appointment durations were identified as contributors to their stress. Ravi et al. (2015) found paperwork and administration to be the most significant stressors for audiologists working in educational settings (82.5%), with stressors being attributed to preparing for lectures and examinations, increased record keeping and marking papers.

For student audiologists in the current study, in addition to these stressors, time demand was also attributed to other factors. Student audiologists are required to manage the needs of study

alongside clinical demands, which was reflected in the participant responses. Stressful clinical experiences can negatively impact the ability of students to resolve problems and impair their learning and cognitive thinking (Shipton, 1994). Participants in the present study reported experiencing stress in relation to allocating study time, keeping up with readings, inflexible hours, report writing and keeping within the short time durations allocated for consults. Several studies have reported high stress and anxiety levels experienced by students during their clinical training (Sarid et al., 2004; Seaward, 2021). Clinical education has been perceived as a stressful event by novice nursing students (McKenna & Plummer, 2013), with clinical environment, style of supervision, and student-supervisor relationship have been proposed to impact the learning experience of nursing students during clinical training (González-García et al., 2021).

Management and supervision was the second most commonly reported sub-theme. Similar to the *time* sub-theme, the management and supervision sub-theme can also be linked to findings from previous literature. Severn et al. (2012) identified management to be a strong predictor of stress among NZ Audiologists. While professional audiologists reported management-related stress in relation to workplace management (Brännström et al., 2016) and performance-related targets (Ravi et al., 2015), student audiologists were found to experience stress in relation to supervision style and poor leadership. Participants in this study reported a lack of adequate support, different supervision styles, supervision pressures, inconsistent leadership and guidance and lack of vision in leadership to be sources of stress. Poor teamwork and reduced management support cause work pressure (Moreno Fortes et al., 2020).

Stress in relation to lack of knowledge and experience with clinical protocols was another prominent sub-theme reported by student audiologists. Audiologists are expected to provide solutions to clients with a wide range of complexities and needs while keeping up-to-date with the latest technology and clinical procedures. Student audiologists expressed their lack of experience with diagnostic assessments, hearing aid fitting procedures, low confidence in sharing test results and a desire to provide the best solution for their clients as contributing factors to their stress. Although the clinical protocol was found to be a prominent stressor in the current study, it was found to have a minimal impact on stress among qualified audiologists (Brännström et al., 2016; Severn et al., 2012), with only 9% of New Zealand audiologists reporting moderate to high levels of stress in relation to clinical protocols. These differences could be attributed to student audiologists' limited experience in the clinical environment as compared to qualified audiologists.

Other sub-themes, including study, equipment and resources, work-life balance, patient contact and introspection, were identified as stressors. Students described experiencing pressure in relation to exams and keeping up with new learning and research. Unfamiliarity with equipment and having to work with outdated equipment were identified as stressors by student audiologists. Audiological equipment was also identified as a source of stress by audiologists working in public health settings, with stressors being attributed to the broad scope of practice (Ravi et al., 2015; Severn et al., 2012).

Although the effects of stress can range from having a positive, minimal, to negative impact on an individual, the majority of the student audiologists in the study reported experiencing the negative effects of stress. The negative effects of stress on emotional (Beiter et al., 2015), social

(Stebleton et al., 2014), and physical & mental well-being (Dalton & Hammen, 2018) have been reported in numerous studies. Additionally, studies with students pursuing healthcare courses such as medicine (Finkelstein et al., 2007; T. Jacob et al., 2013), nursing (Watson et al., 2008), occupation therapy (Everly et al., 1994), physical therapy (Nerdrum et al., 2009), speech & audiology (Moore, 2022; Wahat et al., 2012) and dental (Elani et al., 2014; T. Jacob et al., 2013) have reported elevated levels of perceived stress than the general population of students.

Health-related effects were most commonly reported, with mental health being the most identified area to be impacted by stress in the present study. Study participants reported emotional symptoms such as frustration, anxiety, moodiness, and irritability, which could be likely indicators of prolonged stress, as found in several past studies (Moffat et al., 2004; Shauna L Shapiro et al., 2000; Stecker, 2004). Student audiologists reported physical symptoms of Headaches, stomach aches, muscle tension and fatigue, in addition to sleep difficulties.

Research has consistently demonstrated that excessive stress causes the body to make internal changes to resist external forces (Kültz, 2020) and disrupts the normal functioning of the digestive, cardiovascular, sleep, immune and reproductive systems. Increased stress levels can cause the over-deliverance of stress hormones and elevate blood pressure levels (Mariotti, 2015). Sleep disturbance, including sleep deprivation, poor sleep quality and daytime sleepiness, have been identified as the most prevalent health problem among students (Mahadule et al., 2022).

Student audiologists in the study identified work-life balance to be adversely affected by stress. This effect of stress was attributed to working long hours with no personal time to de-stress,

experiencing constant pressure to upskill and study during free time, as participants reported feeling that they were unable to detach themselves from work.

The adverse effects of stress in the form of behavioural symptoms of nervousness, decreased self-esteem, loss of concentration and incompetency were reported by the participants in the current study. Student audiologists reported feeling emotionally exhausted from being available for friends and family and felt less helpful in general. Similar findings of reduced attention, decreased concentration, low confidence, poor decision-making skills, and behavioural difficulties as a result of anxiety have also been reported in past studies conducted with healthcare students, resulting in poor academic performance and professional inefficacy (S. L. Shapiro et al., 2000; Walsh et al., 2010). Occupational stress has been reported to affect the quality of service provision and patient care (Bruce et al., 2005) within the primary medical industry, including physicians (Jasperse et al., 2014), oncologists, and mental health professionals (Bruce et al., 2005; Campbell et al., 2001; Samantha Marriage & Keith Marriage, 2005; Maytum et al., 2004) and nurses (Happell et al., 2013).

Financial stress from having to manage student loans and expenses was reported to have negative effects on the study participants. Roberts et al. (1999) proposed a cause-and-effect relationship exists between mental and financial health, with one element aggravating the other, leading to the unavoidable worsening of the situation. Furthermore, the relationship between debt and suicidal ideation, depression, alcohol and drug usage, and neurological and psychological disorders is significant (Richardson et al., 2013). Students' education debt, emotional exhaustion, and depersonalization have been found to be positively correlated. West

et al. (2011) reported that students with higher education loans were found to have greater emotional exhaustion and depersonalization.

Poor eating habits have been identified as a negative effect of stress among student audiologists. Similar findings were seen in a study investigating occupational stress among medical doctors in United Kingdom, with 24-29% of the doctors having negative emotions after overeating and 8% of respondents found suffering from binge-eating disorder indicating uncontrollable eating habits as a method of coping mechanism (Medisauskaite & Kamau, 2019).

Numerous studies have reported that healthcare professionals are more susceptible to burnout (Figley, 2013), secondary traumatic stress (Bride & Figley, 2007), vicarious traumatization (Bride, 2004) and reduced compassion and job satisfaction (Stamm, 2010) due to the demanding nature of their job. Effective coping mechanisms are essential in order to manage prolonged occupational stress. Student audiologists in the study were found to be using a variety of coping mechanisms to relieve stress. Emotion-focused coping strategies were found to be most commonly adopted, with communication and social interaction identified as the key coping mechanisms.

Physical activities, including workouts, playing games and dancing as coping mechanisms, were reported in the present study. Among the coping mechanisms identified by the participants, workout/exercise was found to be the most commonly reported coping mechanism overall. This method of active coping may be associated with the poor physical and mental well-being reported by study participants as a result of stress. A study with NZ athletes proposed physical

activity to have a positive impact on both physical and emotional well-being, with progressive and regular training found to shape one's resistance to stress (Dugdale et al., 2002).

Family support was found to be the second most commonly reported coping strategy after workouts/exercise. Participants reported seeking emotional support from family and friends by spending time with them and debriefing with co-workers. A study with nursing students in Australia proposed the development of social support system with family, friends & co-workers aided in minimising the adverse impact of stress (Lo, 2002).

Self-reflection as a coping mechanism involves the process of introspecting and seeking reassurance when confronted with uncertainty. A study with trauma therapists found a decrease in resilience with increasing levels of burnout (David, 2012). Hwang and Shin (2018) found students with higher resilience continued their studies, while 49.2% of nursing students with clinical experience and encountering academic burnout desired to change courses.

Research on reflection and reflective practice found certain forms of introspection to improve resilience and personal growth (Kealy et al., 2021). However, the exact relationship between reflective functioning and resilience growth requires further research.

Student audiologists reported using emotional catharsis-enabled coping while dealing with stressful events. Catharsis is referred to as purgation of negative emotions of anger, fear or anxiety while restoring to normal state (Scheff & Bushnell, 1984). Catharsis was reported to be a part of curative process, beneficial in minimizing stress and anxiety (Scheff et al., 1982). It is also reported to be used as a therapeutic tool to treat people with emotional disorders (Nichols & Efran, 1985). However, modern research suggests that coping mechanisms such as venting

emotions can be maladaptive as they focus on alleviating the emotions causing distress as opposed to managing the stressor, and may result in aggressive behaviour (Bushman et al., 1999).

Leisure activities aimed at avoiding stressful situations through mental disengagement, i.e., watching tv, reading, sleeping, eating and drinking, were reported by student audiologists. Participants also reported using regular breaks and time off when possible as coping strategies to minimize stress. Leisure activities such as talking to friends, sports, and accessing support services have been identified as effective coping strategies, while avoidance and escape behaviours have been found to be counterproductive in mitigating stress (Al-Zayyat & Al-Gamal, 2014; McCarthy et al., 2018; Tully, 2004).

In general, emotion-focused coping strategies have been found to be less effective as compared to problem-focused strategies (Folkman & Lazarus, 1988). Emotion-focused coping strategies used by research students to overcome stress were found to adversely affect mental health as compared to students who used a problem-solving approach to coping with stress (Ab Latif & Nor, 2019; Chan et al., 2009). However, it is important to note that individual differences in aspects such as the pattern of motivation, belief about self and the environment and identification of personal resources for coping influence the appraisal of the person-environment outcome, attributing to the kinds of coping implemented (Folkman & Lazarus, 1980).

Limitations

While the present study provides insights into occupational stress, the effects of stress and the coping mechanism deployed by student audiologists, the study has a few limitations. Firstly, data were collected using a structured self-administered questionnaire which can result in participant bias and may cause an inaccurate representation of the participant's thoughts and feelings. However, it was advantageous for the purpose of this Master's thesis project and enabled a low-cost way of obtaining results in a timely manner.

Unlike other qualitative approaches, the thematic analysis used in the study is a conducive and accessible form of analysis that does not require extensive theoretical and technological understanding (Nowell et al., 2017). It allowed for summarizing the main findings of a large data set and designing a clear and organized report. However, the study may lack cohesion and consistency as themes were developed from the research data, and it may be difficult for the researcher to interpret or make claims about language use.

Future Research

While the current study identifies the perspective of different study participants and establishes similarities and differences, there are insufficient findings to outline the cause-and-effect relationship between stressors and coping mechanisms. The present study reports on several coping mechanisms adopted by the participants to deal with occupational stressors. However, the effects produced by using certain coping style is not fully understood and are missing.

Additionally, the grouping of interventions into specific categories of coping, such as emotion-focused, problem-focused, avoidance or active, can be challenging. For example, sleeping is considered an active coping mechanism to overcome sleep deprivation or can be a mental disengagement to distract themselves from stress. Furthermore, the present study does not address factors such as age, gender or personality traits that are found to influence certain coping strategies (Monteiro et al., 2014). This provides a scope to conduct future studies to gather a complete understanding of the causal relationship between stressors and coping strategies among student audiologists.

Conclusion

The results of the present study have highlighted that student audiologists are impacted by occupational stress and use a variety of coping mechanisms to manage or overcome the effects of the stressors. With the alarming rates of burnout and mental health issues consistently reported in literature amongst students in healthcare professions and the lack of research on student audiologists, there is a need for future research to explore appropriate support services that universities and placement clinics can implement to enable student audiologists to thrive and succeed in their chosen field of study.

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