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Article

Music Teacher Mental Health and Job Performance: Role of Voice Fatigue and Vocal Performance

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Abstract

Educators, particularly those in the field of music, are susceptible to voice-related disorders due to their reliance on vocal delivery in their professional duties. This study investigates the impact of music teachers' mental health on their job performance, with a specific focus on the mediating role of voice fatigue among university music teachers. The study employs a quantitative and deductive approach, aligning with positivism research philosophy. Questionnaires were administered to gather data from music teachers in Malaysian universities, and the collected data underwent analysis using SPSS and PLS-SEM. Results indicate that compromised mental health in music teachers correlates with heightened voice fatigue, which, in turn, contributes to diminished job performance. Moreover, voice fatigue is identified as a significant mediator in the relationship between music teacher mental health and job performance. Additionally, vocal performance is revealed to be a noteworthy moderator in the connection between voice fatigue and suboptimal performance.

Keywords

Emotional Voice Fatigue, Mental Health, Functional Fatigue, Anxiety, Depression

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The affective impact of music on listeners is evident, as it has the capacity to evoke various emotions. In contrast, musicians engage in an emotionally charged endeavour during performance. Favourable societal encounters are associated with enhanced performance and artistic output. However, despite the prevailing positive influences, musicians may undergo anxiety, indicative of a compromised mental state. This anxiety can manifest through unfavourable experiences and persistent challenges in achieving present-moment awareness, consequently leading to suboptimal performances. Such mental conditions possess the potential to adversely affect human performance, resulting in detrimental physiological reactions (Blair & van der Sluis, 2022). Likewise, music educators are not immune to this phenomenon, emanating from their mental health challenges, which constitutes the fundamental focus of the current investigation.

Teaching is esteemed as an honourable vocation, commanding international recognition and respect. However, it is concurrently acknowledged as a prominent profession wherein individuals commonly encounter manifestations of depression and anxiety indicative of their mental health. Notably, empirical evidence indicates that 30% of German teachers have reported experiencing such challenges (Unterbrink et al., 2008), while in Malaysia, the prevalence stands at 20% as documented by Moy et al (Moy et al., 2014). In contrast, a noteworthy 86% of Polish educators disclosed instances of depression and anxiety attributed to heightened work demands, surpassing the prevalence observed in various other professions (Łukasiewicz et al., 2018). This, in turn, has implications for teacher effectiveness, as delineated by Sun et al. (Sun et al., 2022). These statistics underscore the presence of mental health challenges among teachers, emphasizing the imperative for targeted interventions to cultivate an enhanced learning environment.

Mental health has become a pervasive concern within the broader context of global public health, emerging as a significant challenge in recent times that researchers and practitioners are according heightened attention. Teachers, too, grapple with such challenges, leading to compromised well-being. This underscores the escalating public health issues, necessitating focused research efforts to mitigate them, as highlighted by Agyapong et al., with specific relevance to the music teacher profession (Agyapong et al., 2022). Rodriguez posits that young musicians are particularly susceptible to becoming ensnared in a detrimental cycle of poor mental health (Rodriguez, 2023). Consequently, the impetus of this study is grounded in the imperative to address mental health issues prevalent among music teachers (Clark, 2015).

The challenges experienced by individuals in relation to mental health demand serious consideration, as they exert detrimental effects on personal well-being. A notable illustration of this phenomenon is evident in the correlation between poor mental health among music teachers and the manifestation of voice fatigue. The experience of voice fatigue presents a formidable obstacle for individuals, particularly music educators, impeding effective voice management. This assertion is substantiated by prior research findings, which establish a connection between mental health issues faced by teachers and a subsequent decline in their overall performance (Besse et al., 2015). (Agyapong et al., 2022) demonstrated that mental health concerns, encompassing conditions like depression and anxiety, serve as predictive factors for adverse outcomes in individuals. In alignment with these findings, the current study posits that voice fatigue in music teachers stands out as a significant negative consequence associated with suboptimal mental health within this professional cohort.

Voice fatigue emerges as a prominent consequence of compromised mental health conditions among music educators, exerting a detrimental influence on their professional performance. Given the multifaceted responsibilities of teachers, encompassing the education and organization of classes, as well as the coordination of activities and additional tasks in the absence of colleagues, the demand for substantial energy is inherent (Awwas et al., 2023). Consequently, mental health issues present a formidable challenge for teachers, impeding their capacity to effectively manage such responsibilities and leading to diminished performance. This study contends that depression and anxiety in music teachers contribute to voice fatigue, consequently diminishing their overall performance. Previous research underscores the significance of voice fatigue in teaching, where prolonged use of the voice leads to adverse effects such as fatigue, harshness, hoarseness, pain sensation, throat discomfort, and projection difficulties (Arya et al., 2022). In conclusion, the performance of music teachers is adversely impacted by the occurrence of voice fatigue.

Vocal performance is examined as a moderator in the current study concerning the association between music teacher voice fatigue and job performance. Widely adopted by music educators, this technique facilitates adjustment to musical instruments and allows synchronization with bodily gestures in response to sound stimuli (Bremmer & Nijs, 2020). Further research is warranted to delve into the teaching pedagogy of vocal performance

(Simones et al., 2017). In response to the imperative for additional research and to augment the current body of literature, this study examines vocal performance as a coping mechanism aimed at mitigating the adverse effects of music teacher voice fatigue on job performance.

This study is additionally driven by the prior appeal for increased research focus on the consequences of voice fatigue among music teachers. Despite the substantial research conducted in this domain over the preceding three decades, there persists a need for further exploration, particularly in contexts where individuals heavily rely on their vocal abilities for performance (Nanjundeswaran et al., 2015). Individuals with a heightened reliance on their vocal abilities, particularly music teachers, face an elevated risk of experiencing voice fatigue and subsequent performance decline. Recently, Banks et al. (2018) argued that existing literature predominantly concentrates on teachers, acknowledging their susceptibility to voice fatigue, yet delves less into the exploration of risk factors and consequences. Hence, the present study addresses this gap by examining the interplay of mental health and music teacher job performance within the context of Malaysian universities. The study is structured across four chapters, encompassing a literature review that explores theoretical and empirical literature, a research methodology section that outlines the research design, a data analysis segment utilizing statistical software for result derivation, and a concluding discussion of the study's findings.

Literature Review

Mental health and Voice Fatigue among Music Teachers

The heightened emphasis on mental health is particularly pronounced in professions reliant on vocal delivery for service provision. Fatigue emerges as a significant consequence of compromised mental health, with noteworthy recognition that approximately 90% of individuals experience fatigue as a corollary of depression (Ghanean et al., 2018). It is pertinent to note that teachers confront challenges related to vocal health and job-related stress. Typically, these issues are subsumed under the broader category of burnout, potentially leading educators to exit the profession. Nonetheless, the current study diverges from this conceptualization by considering vocal issues, specifically voice fatigue, as distinct from the broader construct of burnout (Brown, 2020) which could be a consequence of compromised mental well-being (Gearhart et al., 2014).

Similarly, compromised mental health influences voice fatigue in music teachers who heavily rely on their voices for service delivery. Various factors, such as serious illness, divorce, family conflicts, work-life imbalance, or university teaching issues, may contribute to poor mental health, leading to depression and anxiety. While such issues are considered part of routine life, they can significantly impact mental well-being. In turn, conditions like depression or short-term anxiety may trigger negative emotions, ultimately resulting in muscle tensions and voice fatigue (The British Voice Association, 2023). Christmann et al. (2022) It has been argued that teachers (Christmann et al., 2022), given their heightened reliance on vocal communication even in unfavourable conditions, are more susceptible to developing voice-related issues, such as voice fatigue. Consequently, this study posits that the extensive utilization of voice by music teachers during periods of poor mental health contributes to voice fatigue, manifesting as fatigue or difficulty in optimal voice usage. Accordingly, the hypothesis is formulated that;

H1: There is significant relationship between the music teacher mental health and voice fatigue of university music teachers.

Voice Fatigue among Music Teachers and Music Teacher Job Performance

Voice fatigue represents a significant concern warranting attention. For instance, a prior investigation asserted the prevalence of voice disorders among teachers. These issues are not only consequential for educators but also for students, impeding the learning process (Banks et al., 2022). Significantly, within the domain of music teaching, where educators heavily rely on their vocal capabilities, a pronounced threat to their performance emerges. Music teachers may encounter various forms of voice fatigue, encompassing both emotional and functional aspects. Functional voice fatigue manifests as coughing throughout the day, stress in vocal production, a constricted voice, frequent throat clearing, and difficulties in vocalization. These challenges contribute to a decline in the job performance of music teachers. Moreover, emotional voice fatigue may also be experienced, characterized by feelings of fear regarding vocal limitations, a sense of incapacity, an inability to reach full vocal capacity, and a perceived deterioration of vocal abilities over time. These emotional aspects further underscore the deleterious impact on job performance among individuals (Paolillo & Pantaleo, 2015). Collectively, the diverse manifestations

of voice fatigue contribute to diminished job performance among music teachers. It is widely acknowledged that teachers, by nature of their profession, extensively employ their voices, consequently exposing themselves to the risk of voice disorders. A prevalent concern within this spectrum is voice fatigue, impairing their capacity to speak at optimal levels and thereby potentially diminishing job performance (de Sousa et al., 2019). An additional study posited that teachers face an elevated susceptibility to developing voice-related problems, leading to occupational constraints. These issues may arise from various factors that warrant further investigation (Banks et al., 2018). In accordance with the study findings, it has been substantiated that compromised mental health serves as a prevalent cause of voice fatigue among teachers, consequently leading to diminished job performance. Nusseck et al. (2022) argued that teachers, given the vocally demanding nature of their profession, are at an elevated risk of developing voice-related issues (Nusseck et al., 2022). Despite receiving voice-related training, inadequacies persist, particularly in noisy environments where teachers are compelled to speak loudly, leading to the onset of voice fatigue and subsequently impairing optimal performance. In line with this investigation, it is asserted that music teachers experiencing voice-related fatigue exhibit diminished job performance in their music classes. As such, the hypothesis posits that;

H2: There is significant relationship between the voice fatigue of university music teachers and music teachers job performance.

Voice Fatigue among Music Teachers as a Mediator

The present study asserts that teachers' experience of voice fatigue is anticipated by compromised mental health, resulting in suboptimal job performance. Hennekam et al. indicate that individuals facing poor mental health struggles are unable to deliver services optimally (Hennekam et al., 2020). Specifically, elevated depressive symptoms significantly diminish performance levels by disrupting the individuals' capacity to exert effort in job tasks. It is noteworthy that depression incurs not only personal costs but also adversely impacts organizations, as diminished individual productivity translates into reduced overall organizational effectiveness. Individuals grappling with mental health issues commonly exhibit diminished job performance due to impaired effort exertion (Deady et al., 2022). Likewise, this phenomenon is applicable to music teachers, who exhibit diminished job performance as a consequence of their mental health issues. Depressed music educators display reduced performance, characterized by a decline in their efforts during music classes (Sun et al., 2022). This occurrence arises from the impact of mental health issues, specifically depression, which diminishes their exertion to produce optimal vocal output, culminating in voice fatigue. Analogously, the present study contends that anxiety, as a mental health issue, leads to a reduction in effort exertion for job performance, resulting in diminished overall performance. The compromised mental state contributes to decreased energy levels, diminished concentration, and challenges in decision-making, ultimately contributing to a decline in performance (Deng et al., 2022). In accordance with this study, it is asserted that mental health issues in music teachers contribute to the manifestation of voice fatigue, subsequently leading to suboptimal job performance. Consequently, the hypothesis posits that;

H3: Voice fatigue of university music teachers is a significant mediator between the relationship of music teacher mental health and music teacher's job performance.

Vocal Performance as Moderator

Prospective music educators demonstrate variations in vocal usage when instructing students. The vocal demands experienced by these pre-service teachers fluctuate throughout semesters in response to the specific requirements of their teaching responsibilities. Excessive demands may lead to suboptimal performance, while conversely, reduced demands may enhance performance (Brunkan, 2018). In accordance with this study, vocal performance is contemplated as a constructive factor aiding in the mitigation of adverse consequences associated with voice fatigue among vocal teachers. While mental health issues are recognized as prevalent across various professions, the teaching profession, given its reliance on vocal communication, emerges as particularly susceptible. Extensive research has been conducted on the impact of mental health issues, such as depression and anxiety, and their resultant outcomes. However, there exists a pressing need for research focusing on coping mechanisms in this context (Sun et al., 2022). Vocal performance serves as a coping mechanism to alleviate the impact of anxiety among music teachers. In teaching, music educators employ vocals not only for verbal communication but also for physical modelling. This utilization of vocals is considered a coping strategy as it aids in adjusting body posture and comprehending specific motions when playing a musical instrument or singing (Bremmer & Nijs, 2020). The

aforementioned literature suggests that despite experiencing voice fatigue, music teachers employ vocal performance as a coping strategy, mitigating its adverse effects on their overall performance. This study posits that enhanced vocal performance substantially diminishes the detrimental impact of voice fatigue on music teacher job performance (see Figure 1). Consequently, the hypothesis is as follows;

H4: Vocal performance is significant moderator between music teacher voice fatigue and music teacher job performance.

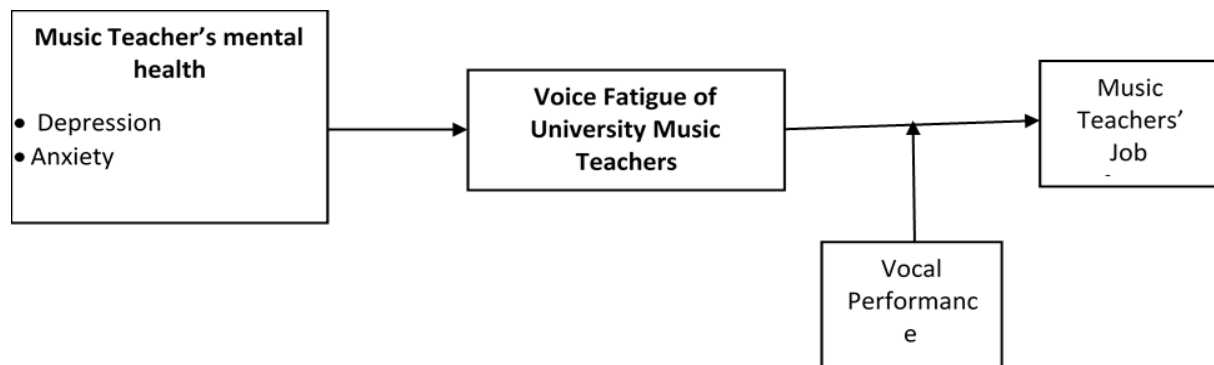


Figure 1: Research Framework

Methodology

The research endeavours to investigate the impact of music teacher mental health on their job performance. Furthermore, the study examines the mediating role of voice fatigue among university music teachers in the relationship between mental health and job performance. Vocal performance is also scrutinized as a potential moderator. The research design serves as the blueprint, delineating the procedures to be implemented for achieving the specified objectives (Saunders et al., 2015). Consequently, the adoption of the positivism research philosophy was based on its endorsement of employing natural scientific methodologies in the realm of social sciences. Aligned with this research philosophy, the study follows a deductive quantitative approach. Subsequent sections elaborate on the additional methodological choices made in the study.

Questionnaire Design and Pre-testing

Data from the respondents were gathered using a questionnaire, wherein all measurement instruments were derived from existing studies, featuring multi-item measures. Each of the constructs, namely emotional fatigue and functional fatigue, was assessed using 10 questions (Paolillo & Pantaleo, 2015). A seven-item measure was employed for the evaluation of depression and anxiety, integral components of the mental health assessment (Lovibond, 1995). The assessment of music teacher job performance was conducted through a five-item measure (Ramos-Villagrasa et al., 2019). The evaluation of the teacher's vocal performance utilized a nine-item measure (Deary et al., 2004). A 5-point Likert scale, ranging from "1 - Strongly Disagree" to "5 - Strongly Agree," was utilized. Prior to questionnaire distribution, pre-testing and pilot testing were conducted. The questionnaire underwent validation by five experts, including educational professionals. A pilot study collected responses from 35 participants, and no amendments were deemed necessary. The study targets music teachers in Malaysia, with the sample size estimated based on the thumb rule and prior research, with up to 400 respondents considered acceptable for analysis. Consequently, 400 questionnaires were distributed to music teachers, and 290 validated responses were employed for subsequent data analysis.

Results

Measurement Model Assessment

This study employed both measurement model and structural model assessments to validate the model and test the hypotheses, respectively (Chin, 1998; Hair et al., 2012; Henseler et al., 2009). Confirmatory factor analysis was conducted to assess the measurement model, and its specifics are expounded upon in the subsequent sections.

Table 1 presents the results pertaining to the confirmatory factor analysis. Initially, composite reliability

was determined, with all values exceeding 0.8, surpassing the established cut-off criterion of 0.7, consistent with previous studies (Haider & Yean, 2023). Furthermore, the values of factor loadings are documented in the table below. It is crucial for loadings to surpass 0.5. The reported findings indicate that all values exceed this threshold (Hair et al., 2010). In conclusion, the values of AVE are presented in the table below, and they should exceed 0.50. All factor loading, AVE, and CR values meet the specified criteria, affirming the establishment of convergent validity for the present study.

Table 1: *Confirmatory Factor Analysis*

Constructs	Second Order	First Order	Loadings	Alpha	rho A	CR	AVE
Voice Fatigue of University Music Teachers	VFUMT			0.932	0.936	0.94	0.513
Emotional Fatigue		EF1	0.679	0.935	0.94	0.946	0.663
		EF2	0.727				
		EF3	0.700				
		EF4	0.709				
		EF5	0.736				
		EF6	0.737				
		EF7	0.737				
		EF8	0.654				
		EF9	0.501				
Functional Fatigue		FF1	0.770	0.959	0.961	0.968	0.835
		FF2	0.718				
		FF3	0.771				
		FF4	0.772				
		FF5	0.718				
		FF6	0.771				
Music Teacher's mental health	MTMH			0.882	0.888	0.908	0.555
Music Teacher's Anxiety		MTA4	0.766	0.926	0.926	0.953	0.871
		MTA5	0.771				
		MTA7	0.767				
Music Teacher's Depression		MTD2	0.527				
		MTD4	0.764	0.849	0.872	0.897	0.642
		MTD5	0.762				
		MTD6	0.772				
		MTD7	0.792				
Music Teachers' Job Performance		MTJP1	0.670	0.844	0.872	0.89	0.62
		MTJP2	0.886				
		MTJP3	0.719				
		MTJP4	0.889				
		MTJP5	0.750				
Vocal Performance		VP1	0.881	0.927	0.936	0.941	0.696
		VP2	0.789				
		VP3	0.752				
		VP4	0.853				
		VP5	0.855				
		VP6	0.864				
		VP7	0.837				

Discriminant Validity

The study computed discriminant validity using the Heterotrait-Monotrait (HTMT) ratio, a contemporary technique ensuring distinctiveness among constructs in a framework. According to established parameters, HTMT

values should be below 0.85 or, in some instances, 0.90 (Henseler et al., 2015). None of the reported HTMT values exceed the established cut-off of 0.85. Consequently, discriminant validity is affirmed, indicating distinctions among all constructs (Refer to Figure 2).

Table 2: HTMT

	EF	FF	MTA	MTD	MTJP	VP
EF						
FF	0.425					
MTA	0.450	0.528				
MTD	0.613	0.890	0.595			
MTJP	0.415	0.482	0.510	0.565		
VP	0.480	0.943	0.524	0.896	0.517	

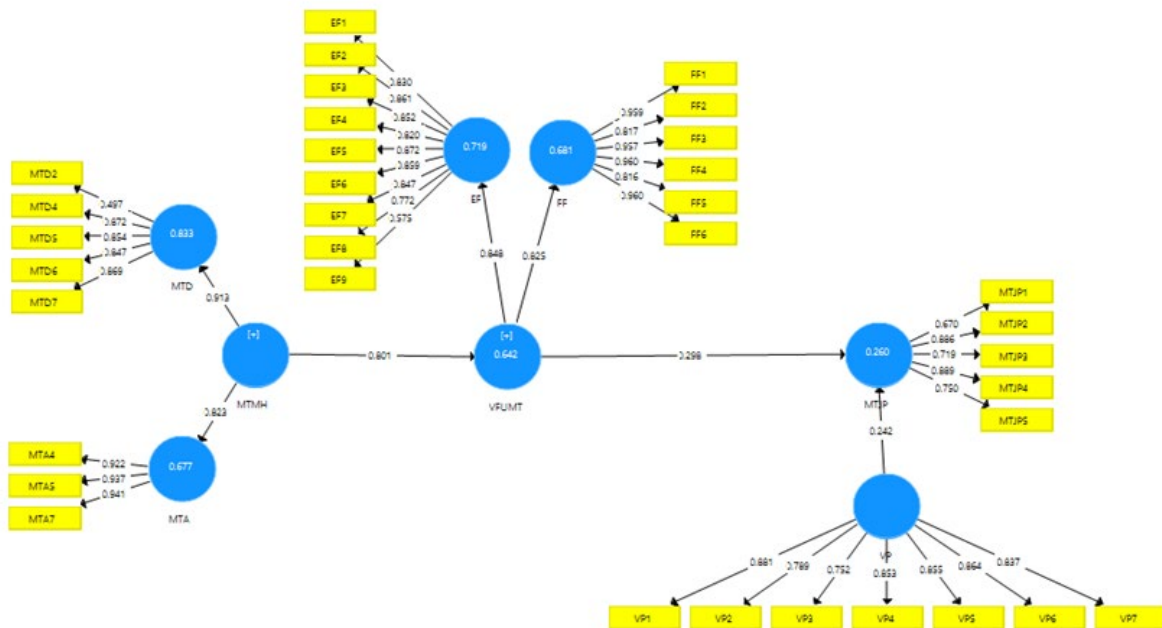


Figure 2: Measurement Model

Path Analysis

PLS-SEM was employed to assess the hypothesized relationships among the variables. Bootstrapping with 5000 sub-samples was utilized. Table 3 below presents the outcomes of the hypotheses testing (Refer to Figure 3). The results indicate that VFUMT ($\beta = 0.333, t = 3.642; p < 0.01$) and VP ($\beta = 0.299, t = 2.92; p < 0.01$) significantly impact music teacher job performance, thereby supporting hypotheses H1 and H2. Moreover, the findings reveal that MTMH ($\beta = 0.801, t = 44.47; p < 0.01$) significantly influences VFUMT. Furthermore, VFUMT emerges as a significant mediator in the relationship between MTMH and MTJP ($\beta = 0.270, t = 3.647; p < 0.01$). Lastly, the results indicate that vocal performance significantly moderates the relationship between VFUMT and MTJP ($\beta = 0.162, t = 2.662; p < 0.01$). All hypotheses are deemed statistically significant.

Table 3: Path Analysis

Relationships	Beta	SD	t value	p value	Decision	R2
VFUMT -> MTJP	0.337	0.333	0.092	3.642	0	0.26
MTMH -> VFUMT	0.801	0.802	0.018	44.47	0	
Mediation and Moderation						
MTMH -> VFUMT -> MTJP	0.27	0.267	0.074	3.647	0	
Moderating Effect 1 -> MTJP	0.162	0.158	0.061	2.662	0.008	

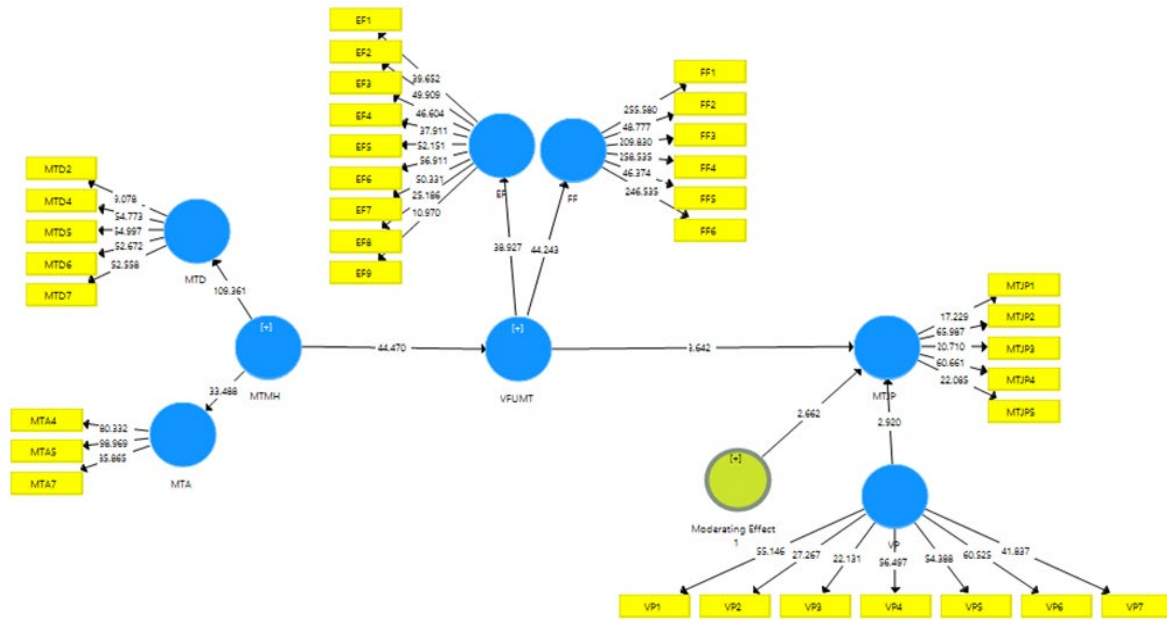


Figure 3: Structural Model

Discussion and Conclusion

This study has examined the association between music teacher mental health and music teacher job performance. Furthermore, it explored the roles of music teacher voice fatigue as a mediator and vocal performance as a moderator. Data were gathered from music teachers, and a hypothesized relationship between music teacher mental health and voice fatigue was tested. Analysis of the data demonstrated a positive and significant influence of music teacher mental health on music teacher voice fatigue. These findings substantiate that compromised mental health, characterized by elevated depression or anxiety, may impede a music teacher's ability to effectively navigate situations, consequently leading to voice fatigue. Mastnak (2022) conducted a study and observed that individuals commonly undergo experiences of depression and anxiety, indicative of mental health issues. This phenomenon is particularly prevalent among adolescents. Music teaching proves to be more stressful compared to other teaching professions due to the diverse range of assignments and responsibilities it encompasses. The multitude of tasks assigned to music teachers can be overwhelming, potentially leading to depression or compromised mental health. Furthermore, inadequate resources available for music teachers may contribute to these challenges (Miksza et al., 2022). These findings align with another study suggesting that musicians, in general, are prone to developing anxiety and depression.

Consequently, training programs are deemed necessary to equip them with effective coping mechanisms for managing depressive symptoms (Musgrave, 2023). In general, musicians encounter numerous occupational challenges inherent to their profession. Mental health issues, notably depression and anxiety, are prevalent among them in comparison to the general public. Therefore, developing sufficient resilience is imperative for musicians to perform optimally in their roles (Kegelaers et al., 2021). In accordance with the study findings, it is established that Malaysian music teachers commonly encounter mental health issues, leading to voice fatigue. This fatigue may manifest as an inability to produce optimal voice, hindering their ability to meet job requirements. These results align with prior research indicating that music teachers with compromised mental health often exhibit voice fatigue, characterized by diminished vitality and increased tiredness (Gong & Mao, 2016). These findings are congruent with a preceding study that surveyed 164 teachers, revealing that 99 individuals exhibited mild symptoms, while 65 individuals displayed moderate or severe symptoms of poor mental health. Similarly, the stress experienced by music teachers in college and university settings has been identified as a significant factor contributing to their compromised mental health and adverse outcomes, such as voice fatigue (Yan, 2022). The study findings indicate that music teacher mental health is associated with reduced music performance. This relationship is attributed to the negative state of mental health, leading to unpleasant emotions, worry, and annoyance, ultimately resulting in

diminished performance. These results align with prior findings, affirming that prolonged poor mental health, particularly anxiety among teachers, has negative consequences such as voice fatigue (Yue et al., 2023). The study also examined the mediating role of voice fatigue among university music teachers in the relationship between the mental health of music teachers and music teacher job performance. The findings indicated that voice fatigue mediates the association between mental health and job performance. Consistent with previous research, it is affirmed that music teachers experiencing mental health issues diminish their ability to exert effort, leading to a decline in job performance (Deady et al., 2022). Sun et al. (2022) conveyed that the general findings pertaining to mental health and fatigue are relevant to music teachers. The results indicate that speaking loudly is a contributing factor to voice fatigue, subsequently diminishing the music teacher's ability to consistently produce high-quality voice.

Consequently, the quality of a music teacher's voice is significantly influenced by the environmental conditions. In instances of highly noisy environments, teachers may be compelled to speak loudly, exerting pressure on their throats beyond a sustainable limit (Schiller et al., 2022). The prevalence of depression and anxiety among music educators often detrimentally impacts their job performance, as it compromises their physical and cognitive capacities. The study examined vocal performance as a potential moderator in the association between voice fatigue among university music teachers and their job performance. Findings indicated that poor vocal performance exacerbates the relationship between voice fatigue and job performance among these educators. This aligns with prior research suggesting that teachers adjust their vocal usage based on body posture and instrument characteristics (Bremmer & Nijs, 2020).

Implications of the Study

This study represents one of the few endeavours exploring the relationship between music teacher mental health and job performance. The empirical findings contribute to understanding how mental health affects job performance among university music teachers, a topic previously underexplored in the field. The study also examines the impact of voice fatigue on music teacher job performance, expanding insights into factors influencing performance. It offers a comprehensive framework illustrating how mental health and voice fatigue jointly influence job performance among university music teachers, supported by empirical evidence. This research sheds light on the significant role of mental health and voice fatigue in driving poor performance among this demographic.

Several studies have addressed the prevalence of mental health issues among teachers. For example, Moura and Serra highlighted the seriousness of mental health concerns among teachers, emphasizing the need for interventions to promote a conducive learning environment and enhance the well-being of both students and educators (Moura & Serra, 2021). However, teachers often lack awareness of strategies to manage mental health challenges effectively. Therefore, universities are encouraged to assess the mental health status of teachers and offer training programs aimed at improving their ability to cope with mental health issues, thereby enhancing job performance.

Mindfulness training is suggested as a potential approach to help teachers manage negative emotions and mental states. Furthermore, this study acknowledges and provides statistical evidence of voice fatigue among music teachers, which can manifest differently among individuals and lead to difficulties such as hoarseness, vocal harshness, and performance challenges. Common outcomes of voice fatigue, as identified by Shen et al (Shen et al., 2014), include changes in vocal quality after short periods of use, difficulty speaking softly or projecting, loss of vocal range, discomfort while using the voice, monotone speech, and increased effort required for speech compared to non-teachers. To mitigate voice fatigue, it is recommended that teachers receive training in breath management techniques. Additionally, the use of microphones can aid teachers in delivering their voice to students while reducing the need for projecting loudly, thereby alleviating pressure on the vocal cords and ultimately reducing voice fatigue.

In conclusion, the study suggests the implementation of practical models to address mental health issues among educators. For instance, the Stress-CARE model, which incorporates an arts-based approach, is recommended for teachers to manage mental health challenges effectively. Furthermore, music teachers may benefit from employing the Sound Energising concept to enhance vocal balance. This holistic approach integrates voice and body-oriented strategies for health promotion purposes (Mastnak, 2022). The utilization of the Stress-CARE model has the potential to foster positive mental health outcomes among music teachers. Furthermore, the findings of this research may serve as a valuable resource for other scholars and academics conducting research in related

domains.

Limitations and Future Directions

The study possesses several limitations that offer potential avenues for future research. Firstly, a cross-sectional research design was employed to investigate music teacher job performance, suggesting a need for longitudinal research to ascertain whether job performance undergoes improvement over time. Consequently, caution is advised in interpreting the study's findings due to the absence of causality establishment within this study. Additionally, the sample size was determined based on previous studies and a general thumb rule, indicating a recommendation for future research to employ larger sample sizes to yield deeper insights into the research framework. Potential exists for students to experience poor mental health due to subpar teacher performance. Therefore, it is proposed that future studies incorporate examination of depression, stress, and anxiety levels among students as a result of inadequate teacher performance to glean more insightful findings. Moreover, future investigations are advised to adopt a dimensional approach to performance measurement. Exploring control variables, including gender-specific information about teachers, is recommended as it may significantly impact their performance. Data collection in this study relied on questionnaires; however, future research could employ mixed methods to yield more comprehensive insights. While this study endeavours to elucidate how fatigue influences music teacher job performance, external factors may impede optimal performance. Thus, future research should incorporate additional moderating variables to enhance understanding and replicate the research framework. Furthermore, it is suggested that future studies encompass diverse cultural contexts, such as Western countries where musical classes are regularly conducted on university campuses, to enrich cross-cultural insights.

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Appendix A

Research Instrument

To what extent do you agree with each of the following statements. Please indicate your answer using the following 5-point scale where:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Voice Fatigue of University Music Teachers		SD	D	N	A	SA
The following questions related to Functional Fatigue						
1	My vocal fatigue appears from the beginning of the day	1	2	3	4	5
2	My vocal fatigue appears as the day goes by	1	2	3	4	5
3	My vocal fatigue appears at the end of the day	1	2	3	4	5
4	My vocal fatigue appears mostly at work	1	2	3	4	5
5	My vocal fatigue appears mostly when I am not working	1	2	3	4	5
6	I have to strain to produce voice	1	2	3	4	5
7	I cough/throat clear during the day	1	2	3	4	5
8	I change my vocal and behavioural habits to avoid getting my voice tired	1	2	3	4	5
9	I speak less in social situations	1	2	3	4	5
10	I constantly have to take medication to deal with my vocal fatigue	1	2	3	4	5
The following questions related to Emotional Fatigue						
1	I speak less because I am afraid of wearing out my voice	1	2	3	4	5
2	I constantly feel that I am not at my full voice capacity	1	2	3	4	5
3	I constantly feel that I am not at my full voice capacity	1	2	3	4	5
4	The fear of damaging my voice makes me anxious at work	1	2	3	4	5
5	My vocal fatigue makes me feel handicapped at work	1	2	3	4	5
6	My vocal fatigue makes me feel handicapped in my social and personal life	1	2	3	4	5
7	My vocal fatigue makes me feel handicapped at home	1	2	3	4	5
8	The fear of wearing out my voice affects my emotions	1	2	3	4	5
9	The fear of damaging my voice affects my life style	1	2	3	4	5
10	People do not understand my handicap	1	2	3	4	5
The following statements related to Music Teacher Mental Health						
Rate these items being a Music Teacher Depression						
1	I couldn't seem to experience any positive feeling at all	1	2	3	4	5
2	I found it difficult to work up the initiative to do things	1	2	3	4	5
3	I felt that I had nothing to look forward to	1	2	3	4	5
4	I felt down-hearted and blue	1	2	3	4	5
5	I was unable to become enthusiastic about anything	1	2	3	4	5
6	I felt I wasn't worth much as a person	1	2	3	4	5
7	I felt that life was meaningless	1	2	3	4	5
Rate these items being a Music Teacher Anxiety						
1	I was aware of dryness of my mouth	1	2	3	4	5
2	I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	1	2	3	4	5
3	I experienced trembling (e.g. in the hands)	1	2	3	4	5
4	I was worried about situations in which I might panic and make a fool of myself	1	2	3	4	5
5	I felt I was close to panic	1	2	3	4	5
6	I was aware of the action of my heart in the absence of physical	1	2	3	4	5

		exertion				
7	I felt scared without any good reason	1	2	3	4	5
The following questions are related to Music Teacher Job Performance						
Rate these items being a Music Teacher						
1	I managed to plan my work so that I finished it on time	1	2	3	4	5
2	I kept in mind the work result I needed to achieve	1	2	3	4	5
3	I was able to set priorities	1	2	3	4	5
4	I was able to carry out my work efficiently	1	2	3	4	5
5	I managed my time well	1	2	3	4	5
The following questions are related to Vocal Performance						
Rate these items being a Music Teacher						
1	People can hear my voice easily	1	2	3	4	5
2	People do not have difficulty understanding me in a noisy room	1	2	3	4	5
3	I feel as though I am at ease to produce voice	1	2	3	4	5
4	My voice do not restrict my personal and social life	1	2	3	4	5
5	The clarity of my voice is predictable	1	2	3	4	5
6	I do not feel left out of conversation because of my voice	1	2	3	4	5
7	My voice does not cause problem to me to lose income	1	2	3	4	5
8	My voice does not upset me	1	2	3	4	5
9	My voice makes me feel good	1	2	3	4	5
