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Steelpan Community  
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## **ABSTRACT**

This research project delves into the negative health impacts associated with cultural practices within the steelpan community, shedding light on the physical challenges and hazards faced by steelpan players. Despite the global acclaim of steelpan music as a vibrant and integral aspect of Caribbean culture, there exists a critical gap in understanding the health implications of long-term engagement in steelpan music production and performance. Through a mixed-methods approach, including surveys and interviews with steelpan musicians, music directors, and manufacturers, this study identifies key health concerns such as hearing loss, musculoskeletal issues, and exposure to toxic substances from the instrument manufacturing process. Additionally, it explores the existing health and safety measures within the community and proposes strategies for improvement. The findings aim to foster a deeper awareness among stakeholders and advocate for the implementation of health-conscious practices to ensure the sustainability of the steelpan tradition without compromising the well-being of its practitioners. This research not only contributes to the academic discourse on occupational health in musical professions but also serves as a call to action for the steelpan community to prioritize health and safety in preserving their cultural heritage.

# TABLE OF CONTENTS

ACKNOWLEDGEMENTS .....	i
ABSTRACT .....	iii
TABLE OF CONTENTS .....	iv
LIST OF FIGURES .....	VI
LIST OF APPENDICES .....	VII
INTRODUCTION .....	1
CHAPTER ONE: LITERATURE REVIEW .....	4
CHAPTER TWO: FINDINGS AND DISCUSSION .....	9
CHAPTER THREE: RECOMMENDATIONS.....	20
CONCLUSION.....	23
WORKS CITED .....	25
APPENDIX A.....	a
APPENDIX B .....	A
APPENDIX C .....	B
APPENDIX D.....	O
APPENDIX E .....	CC



## **LIST OF FIGURES**

FIGURE 1: SCREENSHOT OF GOOGLE FORMS QUESTIONNAIRE.....CC

## **LIST OF APPENDICES**

### **APPENDIX A:**

Mr. Akua Leith's Interview Transcript

### **APPENDIX B:**

Mrs. Avis Bruce-Brown's Interview Transcript

### **APPENDIX C:**

Mr. Jessel Murray's Interview Transcript

### **APPENDIX D:**

Dr. Mia Gormandy-Benjamin's Interview Transcript

### **APPENDIX E:**

Google Form Questionnaire

## **INTRODUCTION**

The steelpan, an iconic instrument of the Caribbean and its diaspora, serves as a vibrant emblem of cultural identity, innovation, and communal spirit. However, beneath its melodious surface and cultural significance lies a less explored area of concern: the potential negative health impacts associated with the practices within the steelpan community. This research aims to bridge this gap by examining the physical health implications for individuals engaged in steelpan music, both in the construction and performance aspects.

## **RATIONALE**

My personal journey as a steelpan player has been the catalyst for this study. The experience of physical discomfort and the anecdotal accounts of health challenges faced by peers within the steelpan community have not only drawn my attention but also sparked a deep curiosity. This research is born out of a need to understand whether these health concerns are widespread and to explore the broader implications for the steelpan fraternity. The steelpan is not just an instrument; it is a vessel of cultural heritage, making it imperative that those who engage with it can do so in a manner that does not compromise their health. This investigation seeks to highlight and address the physical health risks associated with the traditional practices of steelpan music, aiming to contribute to the development of safer and healthier community practices.

## **THESIS STATEMENT**

This study posits that certain cultural practices within the steelpan community—ranging from the construction and tuning of the instruments to the intensive performance routines—pose significant physical health risks to individuals involved. These risks may be mitigated through the implementation of targeted health and safety protocols, education, and changes in practice, thus ensuring the tradition’s longevity and the well-being of its practitioners.

## **PARAMETERS**

The research is confined to examining the physical health impacts on steelpan players and manufacturers, with a focus on musculoskeletal disorders, hearing damage, and chemical exposure risks. It excludes the psychological or socio-economic aspects of steelpan music culture.

## **OBJECTIVES**

1. To identify and analyze the specific physical health risks associated with the manufacturing and playing of steelpans.
2. To assess the awareness and attitudes towards these health risks among the steelpan community.
3. To recommend practical measures that can be adopted to mitigate these risks.

## CHAPTER OUTLINE

1. **Introduction:** Contextualizes the study within broader academic disciplines, presenting the rationale, thesis, and objectives.
2. **Literature Review:** Surveys existing research on health impacts in musical practices, with a focus on percussion instruments and industrial safety.
3. **Methodology:** Describes the mixed-methods approach, including interviews, surveys, and analysis of secondary data.
4. **Findings and Discussion:** Presents the research results, discussing the implications for health and cultural practice.
5. **Recommendations and Conclusion:** Proposes strategies for health risk mitigation and outlines areas for future research.

## METHODOLOGY

This study employs a mixed-methods approach to provide a comprehensive view of the health implications faced by the steelpan community. Qualitative data will be gathered through semi-structured interviews with steelpan musicians, builders and musical directors familiar with the associated health risks. Quantitative data will be sourced from surveys distributed to a broader cross-section of the steelpan community, aiming to quantify awareness and prevalence of health issues. This methodology allows for an in-depth exploration of the topic from multiple perspectives, facilitating a nuanced understanding of the challenges and potential solutions.

## CHAPTER ONE: LITERATURE REVIEW

### Brief History of Steelpan

The steelpan, also known as the steel drum, is a remarkable musical instrument with deep roots in the cultural heritage of Trinidad and Tobago. Its evolution from humble beginnings to a globally recognized symbol of Caribbean music and identity is a fascinating journey that intertwines with the social, cultural, and historical dynamics of the region. The origins of the steelpan can be traced back to the African heritage of Trinidad and Tobago, particularly the rhythmic percussive traditions brought by enslaved Africans during the colonial era. These traditions manifested in various forms of drumming, chanting, and dancing, serving as essential components of cultural expression and community bonding (Wilson). In the early 20th century, the use of metal containers, particularly discarded oil drums from the oil industry, marked a significant shift in the development of percussive instruments in Trinidad. Innovators and musicians began experimenting with these metal containers, discovering unique sounds and tones by striking different areas of the drums. Key figures such as Winston "Spree" Simon, Ellie Mannette, and Anthony Williams played pivotal roles in shaping the modern steelpan. Their experimentation with tuning techniques, such as sinking, grooving, and tempering, allowed for the creation of chromatic scales and expanded the melodic range of the steelpan (Wilson). The evolution of tuning techniques, from the single-tone "ping pong" to multi-tonal instruments, transformed the steelpan into a versatile melodic instrument capable of playing complex musical compositions (Wilson). The development of different types of steelpan instruments, including tenors, double tenors, double seconds, cellos, and bass pans, contributed to the formation of steel orchestras with rich harmonic textures. The formation of steelpan bands, or steel orchestras, became a defining feature of Trinidadian musical culture. These bands, consisting of players on

various steelpan instruments, showcased the expressive range and versatility of the steelpan through intricate arrangements and performances. Steelpan competitions, such as Panorama and the Steelband Music Festival, provided platforms for musicians to demonstrate their skills and creativity (Wilson). The global recognition of the steelpan grew steadily, with performances at international events, collaborations with renowned musicians, and recordings that showcased the instrument's unique sound. The steelpan's influence extended beyond the Caribbean, impacting genres such as jazz, classical music, and world music, and inspiring musicians and enthusiasts worldwide (Wilson). Beyond its musical achievements, the steelpan holds immense cultural significance for Trinidadian communities. It represents a legacy of resilience, creativity, and identity, serving as a symbol of pride and unity. The steelpan's cultural impact transcends boundaries, fostering connections and appreciation for Caribbean heritage and musical traditions globally (Wilson).

### **Negative Physical Impacts among Percussionists and its Correlation to Steelpan Musicians**

Steelpan musicians, akin to percussionists who specialize in playing the drum set, confront a range of significant physical demands that can lead to playing-related musculoskeletal disorders (PRMDs). These disorders emerge due to a myriad of injury risk factors inherent in the art of playing the steelpan. These include the exertion of high forces required to strike the instruments effectively, exposure to vibrations stemming from the striking implements, prolonged engagement in repetitive tasks that strain specific muscle groups, maintaining static postures for extended periods, and managing heavy equipment during the process of assembly, disassembly, and transportation (Azar).

Despite the acknowledged challenges, the existing literature tends to categorize percussionists broadly without offering specific insights into the unique experiences of steelpan players. This

oversight makes it inherently challenging to accurately establish the prevalence rates and distinctive patterns of injuries specifically among steelpan musicians. Nevertheless, studies that have delved into the realm of percussionists, encompassing membrane percussionists like drummers, have unearthed notable trends in PRMDs (Azar). These studies have revealed a high prevalence of PRMDs among percussionists, with membrane percussionists reporting a significant history of such disorders.

Moreover, the studies indicate that certain anatomical regions are particularly susceptible to PRMDs among percussionists, including steelpan musicians. These regions commonly affected include the hands, wrists, and lower back, where the repetitive and strenuous nature of playing these instruments takes a toll over time (Sandell et al.). The findings underscore the pressing need for targeted research efforts and tailored interventions aimed at addressing the distinctive health challenges faced by steelpan musicians.

It is crucial to recognize that playing the steelpan entails a unique set of physical demands and playing techniques compared to other percussion instruments. Therefore, a nuanced understanding of the negative health implications specific to steelpan musicians is essential for developing effective preventive strategies and promoting the overall well-being of individuals engaged in this vibrant musical tradition.

### **Hearing Loss among Steelpan Musicians**

The Carnival season in Trinidad and Tobago, featuring vibrant costumed festivities and calypso music, prominently showcases steelbands in events like the Panorama competition, where they compete for national acclaim. Intense practice sessions lasting 6 to 8 hours daily for about three months precede these competitions, exposing musicians to high-intensity sound levels that may pose risks to their auditory health (Juman et al.). A controlled cross-sectional

pilot study was conducted among the researchers at the Otolaryngology Department of the Eric Williams Medical Sciences Complex, involving 29 steelpan players and 30 control subjects from a steelband. The results revealed a significantly higher prevalence of hearing loss among steelpan players compared to control subjects, specifically at frequencies of 3000 Hz, 4000 Hz, and 6000 Hz ( $P < 0.01$ ) (Juman et al.). Furthermore, the analysis indicated that the duration of playing the steelpan instrument correlated with the severity of hearing loss. In conclusion, the findings highlighted the permanent auditory damage experienced by steelpan musicians due to exposure to high-intensity sound levels (Juman et al.). The study underscores the importance of implementing preventive measures to safeguard against hearing loss, especially among younger players (Juman et al.).

### **Exposure to Toxic Chemicals among Steelpan Manufacturers**

The traditional technique of crafting steelpan instruments using recycled steel drum containers, initially intended for storing and transporting various substances, including hazardous chemicals, raises significant concerns regarding adverse health impacts within the steelpan community, especially among steelpan builders (Joseph). Containers that are not adequately cleaned retain toxic elements, leading to workplace contamination through the emission of toxic fumes (Joseph). Improper disposal of residual chemicals exacerbates environmental pollution by contaminating groundwater and water bodies. Furthermore, the combustion of steel drums during manufacturing releases smoke plumes that disperse contaminants, exacerbating environmental challenges (Joseph). The elevated levels of noise and sound pressure associated with steelpan manufacturing in residential areas also contribute to environmental issues. This environmental concern extends beyond the steelpan community, as undetected pesticides, insecticides, and herbicides in the instruments can impact a broader population. Despite documented cases of

chemical poisoning in steelpan manufacturing, there is an ongoing need to address the often neglected environmental and health hazards associated with this cultural practice (Joseph).

## CHAPTER TWO: FINDINGS AND DISCUSSION

This chapter presents a thorough unveiling and analysis of the findings derived from a range of data collection methods employed throughout this comprehensive study. A meticulously crafted questionnaire was strategically disseminated among musicians entrenched within the steelpan community. It is noteworthy that these musicians, as indicated by the questionnaire responses, boast considerable experience performing on the instrument, operating within either semi-professional or professional realms. Additionally, individuals assuming leadership roles were also included via online interviews, offering their valuable perspectives on the matter. These leadership roles encompass four distinct capacities: Performance, Education, Musical Directorship, and Manufacturing.

### **Moderate to Extensive Time on the Steelpan**

The results of the questionnaire on the average hours spent practicing or performing on the steelpan provide valuable insights into the topic of negative health impacts associated with cultural practices within the steelpan community. The distribution of practice hours among the participants reflects varying levels of commitment and engagement with the instrument.

Firstly, the 21.1% of participants who spend more than 15 hours per week practicing or performing on the steelpan demonstrate a high level of dedication and investment in their craft. This group likely includes serious musicians, professional performers, and individuals deeply involved in steelpan-related activities. Their extensive practice hours may indicate a strong passion for the instrument and a desire to excel in their musical endeavors.

On the other end of the spectrum, the 26.3% who spend less than 5 hours per week practicing or performing may represent casual players, hobbyists, or those with limited time availability due to other commitments. This group may include individuals who play the steelpan

for recreational purposes or as part of a community ensemble without dedicating significant time to formal practice sessions.

The 5.3% of participants who spend 11-15 hours per week and the 47.4% who spend 5-10 hours per week fall into intermediate categories. These individuals likely balance their steelpan activities with other responsibilities such as work, education, or family obligations. They may participate in regular rehearsals or performances while managing their practice time within their schedules.

Connecting these findings with the perspectives shared by Mr. Jessel Murray, Dr. Mia Gormandy and Mrs. Bruce-Brown, the varying practice hours highlight the diverse experiences and commitments within the steelpan community. Mr. Murray's insights into physical health challenges, ergonomic issues, and the importance of proper technique resonate with the participants' practice habits. For example, the prevalence of wrist pains among steelpan players aligns with Mr. Murray's observations about common physical health challenges.

Additionally, Dr. Gormandy's emphasis on the need for awareness and education regarding health risks, such as hearing issues from exposure to loud sounds, correlates with the questionnaire results. Participants spending extensive hours practicing or performing on the steelpan may face heightened risks of hearing-related problems if adequate precautions, such as ear protection, are not taken.

### **Physical Demand and Injuries**

Physical discomfort was most common among all participants in the varying data collection methods. The distribution of responses from the questionnaire among the participants reveals varying degrees of experiences with hearing issues.

The 5.3% who responded "yes, frequently" likely represent individuals who have encountered significant and recurring problems such as tinnitus or noticeable hearing loss directly attributed to their steelpan playing. This subgroup underscores the severity of the issue for some musicians and highlights the urgent need for preventive measures and interventions.

The 47.4% who answered "yes, occasionally" indicate a substantial portion of participants who have experienced occasional hearing issues related to their steelpan activities. These issues may range from temporary ringing in the ears after loud rehearsals or performances to intermittent discomfort or sensitivity to sound.

The same percentage of participants responding "not sure" suggests a lack of awareness or uncertainty among some players regarding the connection between their steelpan playing and potential hearing issues. This lack of certainty underscores the importance of education and advocacy regarding auditory health within the steelpan community.

Connecting these findings with the perspectives shared by Mr. Murray and Dr. Gormandy-Benjamin, the questionnaire results highlight the real and significant impact of steelpan playing on hearing health. Dr. Gormandy-Benjamin's emphasis on wearing ear protection during rehearsals and performances resonates with the experiences reported by participants who have encountered hearing issues.

Cultural acceptance of behaviors like smoking, drinking and consumption of unhealthy ("junk") foods were noted as contributing to long-term health issues. This reflects Mr. Murray, Dr. Gormandy and Mrs. Bruce-Brown's concerns about the impact of lifestyle choices and working conditions on a musicians' well-being.

The responses to Question 8, regarding physical discomfort or injuries related to playing the steelpan, provide valuable insights into the real-world experiences of steelpan players and

their health challenges within the context of this topic on negative health impacts associated with cultural practices.

Several respondents mentioned experiencing back pain, which aligns with Mr. Jessel Murray's, Dr. Gormandy-Benjamin's and Mrs. Bruce-Brown's observations during their interviews regarding common physical health challenges among steelpan musicians. Back pain can be attributed to prolonged periods of standing or improper posture while playing the steelpan, highlighting the importance of ergonomic considerations and proper technique to prevent such discomfort and potential injuries.

Additionally, specific injuries such as Carpal Tunnel Syndrome, Tenosynovitis, tendon strain, and wrist weakness were mentioned by some respondents. These injuries often result from repetitive motions, improper hand positioning, and inadequate warm-up or stretching practices, echoing the concerns raised by Mr. Murray, Dr. Mia Gormandy-Benjamin and Mrs. Bruce-Brown regarding the need for warm-up exercises, proper technique, and seeking medical intervention for injuries.

The variety of responses, including discomfort in the feet, swollen feet, and sole discomfort, underscores the physical demands placed on steelpan players, especially during extended periods of practice or performances. These findings underscore the need for comprehensive health and safety guidelines within the steelpan community, as well as education and awareness campaigns to promote proper physical practices and minimize the risk of injuries and health issues.

### **Awareness and Preventative Action**

The results of the questionnaire regarding seeking medical advice or treatment for conditions related to playing the steelpan provide valuable insights into the topic of negative

health impacts associated with cultural practices within the steelpan community, particularly regarding proactive health management.

Firstly, the fact that 42.1% of participants responded with "no, never" indicates that a significant portion of steelpan players have not sought medical advice or treatment for conditions related to their playing. This suggests a potential gap in awareness or proactive health-seeking behavior within the community.

The 36.8% who considered but never sought medical advice indicate a level of awareness or concern about potential health issues related to steelpan playing. However, for various reasons, such as perceived severity of symptoms, access to healthcare, or other priorities, they did not take the step to seek professional medical guidance. This finding highlights the importance of addressing barriers to healthcare access and promoting a proactive approach to health management among steelpan musicians.

On the other hand, the 15.8% who responded "Yes, more than once" and the 5.3% who answered "Yes, once" represent individuals who have proactively sought medical advice or treatment for conditions related to playing the steelpan. These respondents likely experienced health issues that they deemed significant enough to warrant professional intervention, indicating a recognition of the potential risks associated with their musical practice.

Connecting these findings with the perspectives shared by Mr. Jessel Murray, Dr. Mia Gormandy-Benjamin and Mrs. Bruce-Brown, the questionnaire results underscore the importance of promoting proactive health management practices within the steelpan community. Mr. Murray's recommendation for seeking medical intervention if discomfort or injury occurs aligns with the experiences reported by participants who sought medical advice or treatment. Dr.

Gormandy's emphasis on the long-term consequences of neglecting health issues further reinforces the importance of timely and appropriate healthcare interventions.

The responses to Question 9 regarding the use of protective gear during performances or practice sessions provide insights into the awareness and adoption of safety measures among steelpan players within the context of addressing negative health impacts associated with cultural practices.

The most commonly mentioned protective gear was earplugs, with several respondents indicating their use, especially in loud environments or when necessary. This aligns with the emphasis placed by both Mr. Jessel Murray and Dr. Mia Gormandy on the importance of using ear protection to mitigate the risk of hearing issues and long-term hearing damage associated with playing the steelpan.

Some respondents also mentioned the use of wrist braces when necessary, indicating a proactive approach to addressing wrist-related injuries or providing additional support during practice or performances. This resonates with the discussions around wrist injuries and ergonomic challenges highlighted by Mr. Murray, emphasizing the value of using protective gear to minimize physical strain and potential injuries.

The mention of back support and comfortable footwear further reflects a consideration for overall physical well-being during steelpan activities. Proper back support can help alleviate back pain, as noted by some respondents who experienced such discomfort, while comfortable footwear contributes to overall comfort and reduces the risk of foot-related issues during long hours of standing and playing.

However, it's notable that a significant portion of respondents mentioned using no protective gear at all. This underscores the need for increased awareness, education, and

advocacy for the consistent use of protective gear among steelpan players to promote their health and safety effectively.

The responses to Question 13 regarding the supportiveness of the steelpan community in discussing and addressing health issues provide valuable insights into the existing attitudes and practices within the community, particularly concerning health awareness and advocacy.

The majority of respondents expressed varying degrees of skepticism or dissatisfaction regarding the level of support within the steelpan community when it comes to discussing and addressing health issues. Many respondents indicated that the community is not very supportive or lacks proper knowledge about health risks associated with steelpan playing. This sentiment aligns with the observations made by both Mr. Jessel Murray and Dr. Mia Gormandy regarding the need for increased awareness and education within the community regarding health risks and preventive measures.

Some respondents noted a partial or theoretical supportiveness, especially for more severe health issues, suggesting that the seriousness of the issue influences the level of attention and support it receives. This reflects a potential gap in proactive health management and highlights the importance of promoting a comprehensive approach to health awareness and support within the steelpan community by encouraging open discussions, sharing experiences, and promoting peer support networks related to health and wellness.

The mention of an overreliance on hand straps instead of addressing underlying health issues directly indicates a possible barrier to effective health discussions and interventions. This observation resonates with the discussions on ergonomic challenges, physical discomfort, and injuries highlighted by both interviewees, emphasizing the need for a holistic approach to health and safety within the steelpan community.

## **The Manufacturers: Musical Instruments of Trinidad and Tobago (MITTCO)**

MITTCO's inception stemmed from a critical observation of the music industry's dynamics and the challenges faced by professionals seeking sustainable careers. One of the founders, Akua Leith, acting as both a professional and an educator, noted a gap between musical training and viable job opportunities for graduates. This concern catalyzed the creation of MITTCO, with its foundational principle rooted in addressing these industry gaps.

One primary concern addressed by MITTCO was the need for enhanced manufacturing standards in the steelpan industry. Issues such as drum quality, coatings, delivery logistics, and other operational challenges were identified and targeted for improvement. MITTCO recognized that artisans, primarily focused on meeting production targets, often lacked the capacity to address these broader industry issues without substantial capital support.

Education was another key focus area for MITTCO. Traditional education in steelpan playing tended to overlook broader cultural heritage and music theory beyond basic skills. MITTCO's initiative, epitomized by the Trinity All Generations School of the Arts, aimed to foster learning across generations and broaden educational horizons beyond mere instrumental proficiency.

The establishment of a private orchestra under MITTCO's umbrella aimed to provide a sustainable platform for musicians to thrive based on individual effort and business acumen, rather than solely relying on institutional support. This approach mirrored successful models seen in other music genres where artists achieved significant financial success through entrepreneurial endeavors.

MITTCO's vision extended beyond economic prosperity, emphasizing the importance of learning, camaraderie, and community engagement. Pillars such as museum exhibitions, a hall of

fame, research and development initiatives, and scholarships underscored MITTCO's commitment to nurturing talent, preserving cultural heritage, and promoting continuous innovation in steelpan music.

The organization's festival concept aimed to foster creativity and international recognition, moving beyond traditional competitive formats to celebrate artistic expression and growth. Finally, the vision for a premier performance space, akin to renowned global venues, aimed to elevate the status of steelpan performance and position Trinidad and Tobago as a cultural epicenter for the instrument on a global scale.

### **Employee and Customer Safety**

In Akua's response regarding the safety among the company's employees, he emphasizes the paramount importance of strict adherence to Occupational Safety and Health Administration (OSHA) regulations to ensure a secure and conducive working environment within MITTCO's manufacturing plant. These regulations encompass many considerations, including the safe handling of heavy equipment, fire prevention measures, proper circulation of air, adequate exits and entrances, and maintaining optimal temperatures throughout the facility. He acknowledges the intricacies involved in manufacturing steel pans, which necessitate specialized processes beyond the scope of general manufacturing guidelines prescribed by OSHA.

Specifically, Akua mentions the need for meticulous measures in areas such as tuning, burning, and cutting the pans, which require a nuanced approach not fully covered by standard OSHA regulations. MITTCO goes beyond these regulatory requirements by implementing innovative solutions aimed at enhancing safety and efficiency for their workers. This includes the introduction of specialized equipment such as rotating tables for drum sinking, precision laser

cutters for intricate cutting tasks, and the use of materials designed to facilitate safer and more effective tuning processes.

In MITTCO's goal to address potential toxicity issues related to the drums used in manufacturing steel pans, they exclusively use virgin drums that were specifically manufactured for their processes. Doing this circumvents the risk of previous chemical contamination that could be harmful to manufacturers and steelpan players.

This strategy reflects MITTCO's commitment to ensuring the safety and well-being of its workers and customers. By selecting materials that meet stringent quality standards and have no history of toxic exposure, MITTCO mitigates the potential health hazards associated with drum usage in steelpan production. This approach underscores MITTCO's responsibility towards environmental and occupational health considerations, aligning with contemporary standards of safety and ethical manufacturing practices.

### **Communication**

Akua's response regarding communication between administration and employees reveals a strong establishment of dedicated worker administrators. These facilitators play a crucial role in fostering transparent communication channels between the workforce and management. This proactive approach enables MITTCO to promptly identify and address concerns, leading to well-informed decisions that elevate the overall worker experience.

In addition to its core business of product sales, MITTCO extends its commitment to excellence by offering a comprehensive educational platform through an academy tailored for players. This educational initiative encompasses a wide array of topics, ranging from the fundamental aspects of unboxing the pan to intricate instrument care practices, correct posture techniques, and advanced playing methodologies. Notably, this academy is provided free of

charge upon pan purchase, ensuring that all players, irrespective of their prior experience levels, are equipped with essential knowledge and support from MITTCO.

The innovations introduced by MITTCO are not solely focused on safety but also aim to improve the overall experience for their artisans. By reducing physical strain, providing advanced tools and equipment, and optimizing production processes, MITTCO strives to create a work environment that is both efficient and comfortable for its workforce.

## **CHAPTER THREE: RECOMMENDATIONS**

### **Specialized Workshops and Seminars**

The organization of workshops and seminars targeting steelpan players, band leaders, and managers is paramount for focusing on critical topics such as prevalent injuries like repetitive strain injuries and musculoskeletal disorders. These sessions will also delve into optimal ergonomic practices, encompassing proper posture and instrument setup. Distinguished experts in occupational health, physiotherapy, and sports medicine will be invited to provide comprehensive insights and guidance, enriching the educational experience.

Moreover, the development of an array of informative materials, including brochures, posters, and online resources, will bolster these initiatives by extensively outlining key health hazards and effective preventive measures pertinent to steelpan playing. Following their development, these resources will be strategically disseminated at steelpan events, rehearsals, and competitions through the facilitation of band leaders and managers. This approach aims to cultivate heightened awareness and foster a culture of proactive health management within the steelpan community.

### **Collaborative Efforts between Governing Bodies and Government Entities**

Engaging in constructive dialogues with governmental entities, such as the Ministry of Tourism, Culture, and the Arts, along with the Ministry of Health, represents a strategic endeavor aimed at garnering essential support for health education initiatives tailored specifically to fortify the steelpan community. This collaborative effort, in conjunction with PanTrinbago and reputable private health organizations, has the potential to generate funding opportunities. These funds would be instrumental in facilitating the implementation of educational programs, impactful public awareness campaigns, and critical infrastructure enhancements. These

enhancements are designed to optimize health and safety standards within steelpan yards and performance venues.

Furthermore, this collaborative approach would enable members of the steelpan fraternity to access local healthcare providers and clinics. These providers would extend invaluable services such as discounted or complimentary health check-ups, targeted screenings, and personalized consultations tailored exclusively for steelpan players. This strategic initiative is poised to promote routine health monitoring and expedited intervention in response to early indicators of discomfort or pain. Ultimately, it underscores a commitment to prioritizing proactive health management within the steelpan community.

### **Innovations in Engineering and Acoustic Management**

The integration of engineering innovations and meticulous acoustics management reflects a comprehensive approach to optimizing health and performance standards within the steelpan community.

The adoption of engineering solutions, akin to those observed in MITTCO's endeavors, presents a strategic avenue for addressing the unique challenges faced by steelpan musicians. This strategy entails the tailored design of racks and setups to accommodate varying body sizes and heights, thereby mitigating physical strain during performances and practice sessions. Collaborative engagements with engineering experts can yield innovative solutions that significantly enhance the ergonomic aspects of steelpan playing.

Furthermore, the meticulous management of acoustics and sound within rehearsal spaces emerges as a critical imperative. Dr. Benjamin's emphasis on the treatment of rehearsal rooms to attenuate sound impact underscores the significance of creating conducive environments that prioritize musicians' health and performance quality. Such measures necessitate a nuanced

understanding of how sound dynamics influence musicians' well-being, prompting the implementation of strategies that foster controlled and safe rehearsal spaces.

### **Professionalizing the Steelpan Industry**

In striving for a more professional environment within the steelpan community, it becomes imperative to draw parallels with established industries such as sports and symphonic orchestras. Mr. Murray's reference to cricket and symphonic orchestras underscores the necessity of professionalism akin to these sectors, where highly esteemed musicians benefit from central contracts encompassing consistent support, nutritional provisions, and comprehensive medical care.

Introducing central contracts for steelpan musicians would signify a monumental shift towards stability and financial security. These contracts would not only demonstrate the value and commitment of bands or organizations towards their musicians but also foster loyalty and dedication. Clear expectations and outlined benefits in these contracts would incentivize musicians to prioritize their roles within the community, leading to a more sustainable and professional ethos.

The endorsement of central contracts by Mr. Murray emphasizes the need for attractive terms and conditions that resonate with musicians' expectations and requirements. Such an approach holds the potential to reshape market dynamics, elevating the perception of steelpan playing as a viable and esteemed source of income for talented musicians. This also embodies MITTCO's mission to empower and elevate the next generation of steelpan musicians.

## CONCLUSION

In conclusion, the research on the negative health impacts associated with cultural practices within the steelpan community has provided valuable insights into the challenges faced by steelpan players and manufacturers. Through a combination of older studies, questionnaires, and interviews with industry experts, several key issues have been highlighted:

1. **Physical Health Challenges:** Steelpan players often experience physical strain and injuries such as back pain, wrist injuries, and hearing issues due to the demanding nature of playing the instrument and exposure to loud volumes.
2. **Manufacturing Concerns:** Manufacturers face challenges related to ergonomic issues, exposure to potentially harmful materials, and the need for continuous improvement in safety standards and equipment design.
3. **Educational and Awareness Gaps:** There is a need for comprehensive education and awareness campaigns within the steelpan community regarding proper playing techniques, instrument care, health risks, and available support services.
4. **Safety Innovations:** Initiatives such as improving personal protective equipment (PPE), implementing ergonomic practices, and creating safer rehearsal spaces are crucial for minimizing health risks and promoting overall well-being.

Based on these findings, it is evident that addressing the negative health impacts within the steelpan community requires a multifaceted approach:

1. **Education and Awareness:** Implementing educational programs, workshops, and seminars to educate players, band leaders, manufacturers, and educators about health risks and best practices.
2. **Regulatory Measures:** Implementing or advocating for regulations and standards related to safety, equipment design, noise exposure limits, and occupational health in steelpan manufacturing and performance spaces.
3. **Collaborative Efforts:** Fostering collaborations between stakeholders, including government entities, industry associations like Pan Trinbago, healthcare providers, educators, and manufacturers, to develop holistic solutions and support systems.
4. **Innovation and Research:** Encouraging ongoing research and innovation in areas such as instrument design, ergonomic solutions, sound management, and health monitoring technologies to continuously improve safety and well-being.

By addressing these areas comprehensively and collaboratively, the steelpan community can work towards mitigating the negative health impacts associated with cultural practices, ensuring a safer and healthier environment for all stakeholders involved.

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## APPENDIX A

### Interview with Mr. Akua Leith

**Khai Alcantara:** Good afternoon, can you hear me properly and everything?

**Mr. Akua Leith:** Yes Khai, just give me one second, right? Okay. Yes Khai, apologies, all yours now.

**Khai Alcantara:** Alright, good afternoon, how are you going?

**Mr. Akua Leith:** You not coming on screen?

**Khai Alcantara:** Yeah, coming on.

**Mr. Akua Leith:** Oh.

**Khai Alcantara:** All is well?

**Mr. Akua Leith:** All is firing. Let me just let somebody out. All yours now.

**Khai Alcantara:** Alright. So, the topic, the negative health impacts, you're hearing me clearly, right?

**Mr. Akua Leith:** Yeah.

**Khai Alcantara:** Alright, the negative health impacts associated with the cultural practices within the steelpan community. My interest for that topic, well, of course, I'm doing a thesis, which is a final year research project that we have to do at UWI. But my interest in this...

My interest in this particular topic would have arisen from both personal experience and that would have also stemmed from some sort of curiosity. I would have experienced not severe but you know the occasional pain in the wrist from playing too long or maybe the back pain because

he stands too short you know stuff like that and it just had me wondering, have other members of the steelpan fraternity do they also have to deal with these things? So I decided you know I want to both ask them but also ask people who are in leadership positions who I-- in my view have some substantial level of influence within the space and that's where I would have thought of MITTCO from the perspective of the design of the steelpans you know how their contributions to the fraternity has an impact with regards to this topic so I mean I would personally know how it would have started and whatnot but just for the purpose of recording it I guess you know could you give us a brief just like a little background as to how it would have started?

**Mr. Akua Leith:** So yeah, first congratulations on your thesis and your thesis means final year in school that could only be exciting and now that you're getting into research and the topic that you choose is a unique one for sure but I definitely would have to deal with that specific thing through being the director of the National Steel Symphony Orchestra but based on the question MITTCO came about from me watching the industry and what the industry gives and what we need to do to cater for the professionals that will come out so just in a nutshell we have a lot of people who have taken on music as a career but at the end of that stint at the end of that process me as a lecturer at the time couldn't point them to viable jobs or a viable career path which they could have been sustained and their skill set that they would have developed would have been utilized and that bothered me as a professional, bothered me as a lecturer because it's almost like I'm setting up these persons to waste time in the field and the idea of MITTCO which is pillar one of the ecosystem but it was already an ecosystem idea really was engendered by that. And, manufacturing, we had issues with drums, we had issues with coats, we had issues with coatings, we had issue with delivery, there was a host of things that was consistently being talked about and to me to be honest the artisans won't really actively working on it because they were so

bound down with work, just to deliver and meet their targets, they couldn't have solved some of these things and some of these things really needed to be solved via capital. When you talk about education, there is this point where education was only being targeted around who's interested in steelpan playing but rather than looking at our cultural heritage point, maybe Trinbagonian I should at least understand how a C Major Scale is played and then beyond a certain age group it was just flat. Persons didn't believe that could have been part of it but it was part of an institution called Trinity All Generations School of the Arts which you know, and we started fostering learning across all generations and that academy slash institute was kind of focused on that pillar two. Pillar three, a private orchestra, this came about from the point of thriving because as you know running the public national orchestra which was the National Steel Symphony Orchestra, there's certain things with that, there's some pros and cons with that as well and I believe things should grow based on the effort of the individual and not just based on the will of the institution and if you want and if you believe in something, put your money where your mouth is and let's see how things will go. So I'm attempting that right now through the MITTCO ensemble to see the possibilities of having a performance group sustained through business, sustained through the generated gigs, I mean we see in performances we have the Rihannas and we have the Jay-Zs who are billionaires through performing so why not, why can't a steelband be a billion-dollar group. So these are the type of things that I'm thinking about and then beyond just the economic side is also a space of learning, a space of comradery, a space of giving back as well. Then pillar four, we talk about having a museum to showcase the evolution of the instrument and then how did it develop, who was responsible. We should have a hall of fame, we're talking about the persons responsible for different aspects of the evolution, talk about research and development and scholarship, we need money to support youths like yourself, I mean from UWI I'm sure you

would want to do your masters, we should have a space if your master's degree is on steel pan you should have access to some type of funding and we're going to be able to create those spaces for persons like yourself and then there's R&D, who say we are using the best team, who say we're using the best sticks, who's saying and what is carrying the use of the things that we are consistently duplicating, is it based on a certain level of R&D. Seven, a festival, panorama is panorama, competition, everybody loves competition but I think it stifles creativity and sometimes stifles growth, I need to see some level of a festival, not the festival in a traditional sense what we call panorama as a competition again, we're talking about a festival where creativity lives and where creativity will now be taken up based on the person presenting to this festival and see what happens locally and internationally based on the steelpan performance. The last pillar will be a performance space beyond Napa which is beautiful, a retractable roof, different backgrounds from the performer and all these different things to kind of bring a certain level of excitement to the foreigner in order to be considered a true pannist you have to play in this particular concert hall, it's like the Carnegie's and the Royal Albert Halls and the Beijing Opera House and all these different things, the Sydney Opera House as well, we should create that type of stardom when it comes to the steelpan performance in the world, go to Mecca for as a Muslim and we know we're going to the month of Ramadan now, everybody's listening to Mecca, Trinidad is Mecca, you head to Mecca, Trinidad when you want to have the most significant experience, anything steeper, so that is general idea of what we call MITTCO.

**Khai Alcantara:** All right, awesome, awesome, so the first question I have with regards to the topic, initially when I was thinking about who I was going to target, who would have been the subject of the research, the first thing that came to mind was players because I would like to think that they would have more of the most significant experiences when it comes to things like

this because they're out there, they're using some sort of physical labour to play the music and whatnot, whereas it's also about manufacturers as well because they too have an integral part of maybe because I mean if they don't make the instruments, we have nothing to play, and they have to use equipment, I'm sure there's some sort of chemicals that they have to use and stuff like that, so as you would have been bringing the company together, how did you all say well this is how we're going to address maybe potential airborne hazards, how do you all address those things in the manufacturing process for indoors?

**Mr. Akua Leith:** So it has something called the OSHA Act, once you go into a proper manufacturing plant, the country's government, OSHA. OSHA tells you all the things you need to do to have a safe, operational, worker-friendly plant, and if you walk through the factory, you will see all these things being displayed, meaning forklift is on the road, what they need to do when they're driving, different ways to lift heavy stuff, the speed at which any vehicle should be driving along the compound, make sure we have fire things met, make sure we have in terms of circulation things met, make sure we have a certain amount of exits and entrances, make sure the temperature of certain spaces are met, make sure there's a proper way to run our gas lines and our water lines and our airlines, all these things are covered as a manufacturing plant under the OSHA Act, so to be approved, that had to be in place. Beyond that, the specialization of the job requires different things, I mean like OSHA might just be talking about a general manufacturing space, but still, manufacturing steelpans there are different things that needs to be done, so one of the things that happens is the guys, they would hit and come to measure the pan readiness by watching it at all, so we went one step further and we measured that via the normal outside where we could duplicate that process in a safer environment for our workers. The way in which they sink the drums, that, I mean we had everything OSHA, but we still weren't creating the best

way for them to sink the drums, so we went a step further again and brought an engineer who now, when they're using pneumatic hammers and they have to walk around and balance the thing with their legs, he now created a rotating table that locks the barrel in place and actually does the turning on behalf of the artisan while they stay steady and carried it, so that improved on the experience. In the tuning space and also in burning, in the cutting space, the cutting space, they use a shear and their hands are aligned and they go through that, but we also included a laser cutter where they just lock the pan in place, set the measurement, press a button, and that cut is now done by a laser machine which improves on the artisan experience, and when we're tuning them, the process of tuning is both on the inner bowl and on the back of the bowl. There's a level of flipping of that pan, which they do with their hands from tenor all the way to bass, we created another material which locks the pan in where they can actually work on. If they need to turn the pan, it's by a tip of a finger that is rotated, so that again was a specific thing based on this particular production, this particular manufacturing process that we added beyond the OSHA Act, which is necessary to have a manufacturing place approved.

**Khai Alcantara:** Okay, and in terms of the steel pan players, is there any considerations that or innovations or anything you might say is different from the traditional way of how the steel pan is created right now? Did you all have any considerations with this when you go about making the instrument? Like in terms of, I don't know if I explained the question correctly, so how do you all design the instruments and manufacture them, bearing in mind, you know, trying to create something that is not going to cause any sort of harm to the players that are going to use your products, how do you all go about doing that?

**Mr. Akua Leith:** As you asked, just if I can clarify the question correctly, is it that you're asking how we choose our layout or how we choose the process? The instrument itself, how do you all

go about designing it in a way that ensures that the player has the safest experience? Safe, and I think that kind of, but you know, before MITTCO, I mean, steel pan for playing to me was a safe experience. The edges are not sharp; the bowl is not deep. According to how you play, you play according to what you want to hear, so if you have an individual, how I design a tenor, there's nothing in that, to me, is harmful, you know. I don't think there's anything harmful because there's no sharp edges or anything of that nature, only if you go with sound, the volume in which an amount of pan brings when they have a group thing, that, I mean, the curvature of your back is really based on how high you put the stand, but the player themselves has to adjust that. We as the manufacturer, we put adjustable stands, so we cater for that. If if they're short or they're tall, if it's long, everything is, everything that we do is for a safe environment to play.

**Khai Alcantara:** Okay, because one of the things that I was hearing, and I guess you could probably verify this, is the G-Pan, I know a lot of people when they were using that, I heard reports of, you know, back pain and all those things, so that would have brought about that question, and just as a point of reference.

Mr. Akua Leith: Yeah, I could go from that perspective, not from the manufacturer's perspective, the G-Pan has two things happening at the same time, the goal of the G-Pan was to secure a patent, and in order to secure the patent, you had to do all the correct checks and balances, from understanding the methodology, finding a new layout, finding a new name, and solving issues. The G-Pan works to create four lines of instruments that will cover the 13 instruments within the panorama steelpan family. As we know, the simple thing in terms of the instrument is a steel pan. When they were ping- pongs, the ping pongs because you know the circumference of the pan is pretty small, so there's three notes that can fit. It increases the circumference, and more notes can fit, so the G-Pan's whole point was a bigger pan to take up more notes, to start on A3, and go all

the way up to A6, so you have four octaves on the A right there, A3, 4, 5, 6, so you have four octaves there, and that was to get it around the tenor, catered between a normal tenor and a double tenor. Double seconds catered between a double tenor, all the way up to almost a guitar, the guitar catered for the guitar and the cello, and the bass catered for the tenor bass and the bass, and the circumference of the pan afforded them to create more notes. So with that happening, and not having to have sheet metal, width, volume, and thickness comes with it, but if you're accustomed to playing this way, I know you're playing this way, it does affect your physical approach towards the instrument, and the other thing is, as a national player compared to a community player, your contact time with the instrument is significantly more whereas a community player comes to a panyard, and you play for a while, you sit down whereas a professional player, where you're required to stand five days a week, sometimes eight, seven days a week, because of performances, rehearsing rigorous and challenging music, with runs, and so your dedication towards the playing has almost 100x compared to what you're doing on a precursor level, but if you're a professional that demand of the instrument is one of the reasons why the back pain, but it's not a it's not a one brush across all instruments, because I don't manufacture G-pans, we manufacture traditional pans, and we cater not just for professionals, we cater for amateurs as well, but the G-pan situation is a unique situation, it's almost isolated as something in the industry.

**Khai Alcantara:** Okay, how does MITTCO address feedback from employees about physical demands of manufacturing the steelpans, and perhaps from players on the playing comforts?

**Mr. Akua Leith:** Yeah, from the manufacturing side, on our workers side, we had to consistently improve on our PPE, right, and the PPE is in place to create a better worker experience, so it was worse, maybe the boots were too hard, standing on the ground, maybe the

floor was too hard, so you had to bring in some soft mats, talking about the earmuffs, some of the earmuffs, the level of sound that it was preventing, maybe it wasn't strong enough, so you had to increase on those things, so it was just bringing a structured manufacturing process alongside something that was cottage, you know, and these equipment exist, so it's literally to have a quality and a worker administrator who they could talk to and share these things with, and then bring it back to the management and even making a decision in the spur of the moment to increase the experience of the worker in a positive way. From the players' perspective, when we sell a pan, we did alongside our sales, create an academy, which doesn't just talk about music, but the academy speaks about how to unbox the pan, what are stringings, how to take care of the instruments, where the rim is, where the skirt is, how to stand, the posture, how high to raise the instruments, we took nothing for granted. We're not saying we hand you a pan we expect you to know, no we don't know. We expect you to know nothing, and when you purchase, you get access to the academy for free, which gives you all the pertinent information.

**Khai Alcantara:** Okay, good, and funny enough, you actually answered the next question there, one time, in terms of the educational aspect, because I was going to ask you, because I was now going to ask you what educational efforts does MITTCO undertake to inform players and employees about minimizing the risks so you answered two questions there. Looking into the future, what research or development is MITTCO currently pursuing to further safeguard the health of employees and musicians and customers, I guess, who would purchase your products, that being the steelpan?

**Mr. Akua Leith:** Yeah, I mean, because, again, we can't answer much on the player side, but I think in my professional statement, based on other experiences, not particularly MITTCO, but as Akua. One of the things we talk about all the time here, because of the employee, is how we

could make the process better. And we did some research, that's how we got the cable, that's how we got the kiln, that's how we got the ..., that's how we get the leads, that's how we have an engineer working on our side, so we have built relationships, and professional relationships, because it's built relationships, for persons to consistently watch our process and bring recommendations on how we can better the process. Just to give you an example, the polishing team right now is working on the right equipment, but after a series of polishing certain types of drums, it does have a toll on their back to bring in the right support in terms of the back, and also having a harness to help take the weight over the back of the polisher, to aid in that process, or literally just guide it down a process, and we find the machine acts on itself, so we're always thinking about how we can improve on our production process through trained engineers, and that is expensive, but I think it is necessary, and on the players' end, we are creating the best product in the industry right now, so have the player beyond just back and hand, but even in terms of confidence, and once you have, it's like a car, once your car is clean, you drive a particular way on the road, comparatively your pan is dirty, your car is dirty, so there's a lot of things we are doing that is customer friendly, that is customer focused, to maintain a significant amount of market interest into what we have been doing so far.

**Khai Alcantara:** Right, one of the things that I have come across in my research in terms of the drums that are used is often the perspective that the drums that were used---I don't know if that was in the past---it wasn't really intended to be an instrument so it used to hold chemicals and those things were toxic for the manufacturers. So my question is, how do you all go about determining the quality of the materials that you all are going to use for the instruments? Is there a process where you assess the quality, make sure that it's not going to be toxic for the manufacturers and then later on the players?

**Mr. Akua Leith:** So for short, just to say, frank moment here, all of our drums are virgin drums. Drums that were never used. Our drums were specifically manufactured for our process. We don't have that problem to deal with in terms of the types of chemicals and all that. Our drums never had anything in them. It is specifically made for the steelpan.

**Khai Alcantara:** Ok, and you...Last question. You started answering it a bit and the question was, how does MITTCO balance the traditional aspects of steelpan production with modern health and safety standards. I know you would have mentioned using the equipment, for example, the polishing to make sure that all the weight isn't placed on the manufacturer and stuff like that. But what else is there that perhaps you haven't said as yet?

**Mr. Akua Leith:** So the traditional way of doing steelpan is really the best way and I will say, there are people 3-D printing pans, but are you getting the best quality? I will say, no. There is, how can you protect the artisan as they go through their craftsmanship. One, there are certain process we think could deal or could do with some automation and that is what we're looking at where it takes away the hard, laborious type of work from the artisan which is what we need to protect. We need to protect the human and... However, 80, 90% of what we see happening now we just need to refine it based on tools and systems. So one person doesn't necessarily need to make an entire steelpan. We can have different specializations where one person can focus on sinking, the next person focuses on drafting, the next person focuses on setting and the next person focuses on grooving and we run a production line towards the instrument which takes away that laborious type of everything being done and give a production throw towards the developmental page. So that for sure is something that we have introduced and we are seeing it--we could also on board someone faster so that persons coming off the desire to play pan would make pans, doesn't have to literally have a full 100% understanding of how to do every single

thing but they can come on board and just know how to sink and while he's sinking he can learn how to draft.

**Khai Alcantara:** Alright, well that's it for all of the questions but is there anything else that you'd want to share that we didn't speak about?

**Mr. Akua Leith:** I think all in all these types of questioning and research is very much where we need to go as a young professional coming into the industry you can bring a new spin towards how you see certain things in the industry and how those things can either be supported for better. And I just want to say keep going, keep going, stay focused and bring your specialty to the industry because it is needed.

**Khai Alcantara:** Well thank you for your time and your patience and your willingness to contribute to the research.

**Mr. Akua Leith:** Excellent man and all the best and yes I understand the value of time more now realizing how little I have to share. So I am happy we were able to do this and you're somebody I will definitely create time for so I am glad that we were able to cross this hurdle and....All the best.

**Khai Alcantara:** Thank you very much.

**Mr. Akua Leith:** Yeah man Khai, later.

**Khai Alcantara:** Alright.

**Note:** This interview has also been uploaded as an unlisted YouTube video. Attached is the URL link: <https://youtu.be/5PwiVwt8cTc>

**APPENDIX B**  
**Interview with Mrs. Avis Bruce-Brown**

**Note:** Due to the extensive length of this online interview an unlisted YouTube video has been uploaded. Attached is the URL link:

<https://www.youtube.com/playlist?list=PLEBh6lwqUx4A89DyEZ9ZTBDYkaLd5Sn>

## APPENDIX C

### Interview with Mr. Jessel Murray

**Mr. Jessel Murray:** Good Afternoon Mr. Alcantara. Sorry to be a minute or two late.

**Khai Alcantara:** Good afternoon, sir. Not a problem. Are you hearing me and seeing me clearly?

**Mr. Jessel Murray:** Hearing and seeing you. I'm just going to keep... Well, actually, you know what, I can... It's not to say that you are not able to see me, but I just want to let you know, yes, I am here.

**Khai Alcantara:** Okay, sir. All right. So, thank you for being here. I know you have a busy schedule, so...

**Mr. Jessel Murray:** And you as well have a busy schedule. So, yes.

**Khai Alcantara:** All right. So, how are you doing, sir?

**Mr. Jessel Murray:** I'm fine. It's a busy-ish day because lots of small things to do before rehearsal, but we do what we can. So, you tell me. Let's proceed.

**Khai Alcantara:** All right. So, the topic at hand, sir, negative health impacts associated with cultural practices within the steelpan community. That topic, would have arose well, of course, I'm in my final year, so I have to do a study. It was one of the options, and I would have opted to go into this study in particular because, one, I haven't seen a lot of people in the fraternity themselves dive into something like this when it comes to health and wellness and all those sorts of things. And I also would have had one or two experiences where it comes to health, not anything servere in comparison to what I've heard before, but little things like back pain, hands

hurting from extensive hours of practice and stuff like that. And it just brought out a certain level of curiosity. Am I the only one that experiences stuff like this? Who else experiences things like this? How do they deal with it? And by extension, what are some possible solutions that we could come up with as a community to kind of alleviate the severity of some of these things that we're faced with? So I thought that you would have been a suitable person given your experience in the fraternity.

So before we start with the questions, I would like to ask you, how did your journey start working with the steelpan fraternity? Because I know that the piano is your main instrument, if I'm not mistaken--

**Mr. Jessel Murray:** Correct

**Khai Alcantara:** So how would you use it to the steelpan? All right.

**Mr. Jessel Murray:** Alright, so I had an initial invitation into the steelpan way back in the early 1980s, when the late Desmond Waithe invited me to work with a group called the Trintoc Sun Valley in Point Fortin for the, what those days would have been, I don't know if it was called Pan Is Beautiful, I don't remember, but there's certainly the International Pan Competition, sponsored by PanTrinbago. There was somebody else to do the, there were two pieces, one calypso, so somebody else did the calypso. I was invited to do the classical piece, and I remember I chose Chopin Waltz. So that was my first exposure. And then after that, there was nothing, believe it or not, until 1998. Yes, that long, when I was at a secondary school in Massachusetts after, in my professional life, and we decided to start a pan group for the academic year 1999 to 2000. And I recognized at that point, I had had no contact with pan. So I flew back to Trinidad in 1998 for two reasons, one for my mother's funeral, and two, to get a training, and I had to learn all the

instruments in 10 days, and then fly back to the United States to begin my particular journey in elementary steel pan.

And then I returned to Trinidad in 2000 to do a residency at University of the West Indies as a full-time replacement for Mr. Sharma. And I was told I would have to do a steel pan group. So my exposure continued through there in 2000.

About four years later, there was not, as you are part of course of the UWI Arts Steel, there were, while there were still ensembles, the steel ensembles at that time at the DCFA, back in those days it was the CCFA, Center for Creative and Festival Arts, there was no organized relationship with steel bands. You entered an ensemble because it was required. But the students at the time decided to join the World Steel Band Festival to compete in it. So they asked Mr. Saunders to do the calypso, and they asked me to do the classical piece, this time Tchaikovsky, and we competed and won. And from then on, I continued on with my journey with steel pan. After that, I was invited, as you know, in 2007 to be the director of the National Steel Symphony Orchestra. So therefore I continued with even more extensive work, because I'm the person who was also hired in that same year, 2007, to lead the first public performances of the G-pans, which were developed at the University of the West Indies. So my involvement in steel pan just continued to go this way and this way. So that's that--and of course it has continued to this day. So that's, those are my sort of succinct points of entry into steel band conducting and direction. Yes, you're muted. Yes, now you are.

**Khari Alcantara:** All right, thank you for that, sir. So with the years of experience, thus far as a music director, particularly in the steel band community, what are some of the most common physical health challenges that you've observed among musicians that you've worked with?

**Mr. Jessel Murray:** Right, so let's start with the more extreme ones. So the National Steel Symphony Orchestra, which began at the end of 2007 and still exclusively uses the G-pans. The G-pans are by nature, both, there's a larger circumference, but there's also more depth in the sinking, I believe in their concave nature. When we started doing work with the G-pans, nearly all of the players, especially on the frontline instruments, complained of severe back ailments. Now part of it is that steel pan players, unlike any of the other instruments, because steel pan is a younger instrument, I have noted steel pan players do not do sufficient physical warm-up. They simply start rehearsal at whatever point they are. Now some persons will warm up by playing through repertoire, but still, that is not an... I have not observed widespread use of people getting blood flowing, massaging of their arms and wrists, looking for rotation of the wrist. That's not widespread and is something that must be practiced more. But what I noticed with the G-pans, there was, when I tell you severe, severe. But after a few weeks of doing it and some stretching, and also sort of by using mitigating strategies, by having shorter sessions with built-in breaks, the players acclimatize themselves to these deeper instruments. I have not noticed the same at UWI Arts Steel, which utilizes the more traditional instruments, less concave, less wide in terms of the diameter. I would have said circumference, just now, the diameter. And I have not heard of the same types of back pains. However, what people have talked about quite a lot is wrist pain, all types of wrist pains, everything from what is suspected tendon damage, wrist difficulty, and in some cases, nerve damage. And part of it may be genetic, part of it may be poor technique, but I still believe that there's not enough warming up for the steelpan instrument. And it's something which concerns me greatly.

**Khai Alcantara:** Right. And can you share some insights into the ergonomic challenges faced by Steel players during rehearsals and performances? I don't know if that sort of ties into some of the answers you would have given so far.

**Mr. Jessel Murray:** Well, it does, because remember that steelpan players generally, now with the National Steel, there are a number of things that actually we built in. So for instance, one of the things that people do with panorama performances and panorama things and so forth, is that they're really on their feet all the time, even when they're not playing. One of the things that we had built in, both in performance, but also in rehearsals, is that people sit. So when they're not playing, they're comfortably seated, they're off, so their back is not constantly in a, what should I say, in an attitude of stress. And even when, and I try to encourage that in performances, and also I tend to look at people when they're performing, and sometimes privately, I will say to them, you know, you look tense. Another thing too, I think, where people have had challenges, especially in the panyard, where there are racks of instruments sort of churned together, people are not always at the correct height for playing, they're not at the correct depth for playing, and on top of that, they have not been instructed in the proper use of technique. There's a lack of that in the steelpan world. If you don't have proper technique, some people will have things naturally, but there are some persons who are playing in a series of stress, and they also don't seem to know how to respond to the stress factors, inclusive of pain. Pain is never a good thing on any instrument, it will lead to short-term, and in some cases, long-term damage. So these are the things I have noted in terms of playing, and also as a conductor, I try to create an atmosphere where one, you're always thinking of different sections, how to give them rest, and also to ensure that they're not, and again, this comes with the word "beating", we have heard that term before,

technique is doing, rather than just suddenly playing, and one of the things I still look at, the big difference between Steelband, Calypso playing and Classical playing, Classical playing does depend on different types of touch. Steel band playing tends to go with a downbeat, according to tempo that they have heard. So that's something which, you know, it makes a difference in how you approach your instrument, and how you're playing it all of the time.

**Khai Alcantara:** Right, right, and besides, you would have mentioned earlier in the previous question, you know, warming up your wrists and doing certain exercises to get the blood flowing, so that when you begin playing, the impact is not as stressful as compared to not, but besides those measures that you would have suggested so far, what other things, is there a particular type of clothing I should wear, footwear, equipment?

**Mr. Jessel Murray:** Well I--No, no, I think--look, once you--I think, well, clothing of course is entirely one thing, but your footwear has to be, you always have to be, whatever, if you're wearing something, let's say slippers, that, you know, you're not, that's not, people should be aware that they're wearing slippers, they're not giving themselves support, but that is not going to affect in any way their playing, but it could affect their backs. So therefore, people should know that they should be wearing things in terms of support, because they're standing more than sitting. They should be wearing something that gives them a type of support, and I'm glad that you mentioned that, because I've never really concentrated on that, but that is something that people should be thinking about. Also, always, people should be thinking, depending on what's on their footwear, is it giving them an inch or two more, whatever, it should always be measuring, what is my relationship to the instrument? It's very important that they do that, because if you're unduly stretching all of the time, you're causing yourself distress.

**Khai Alcantara:** And regarding hearing issues, I know from my own personal experiences, especially around the panorama season, sometimes they leave the panyard with the ears ringing for a couple of days before it gets back to normal.

**Mr. Jessel Murray:** And that is a dangerous thing. And this is why anybody who is in panorama, anybody must wear earplugs, because one, it's the intensity of the sound, but two, it's what people are not concentrating on, it's the residual metallic sound that you're not paying attention to, that is also impacting, because it's a vibration on your eardrums. So you must be wearing ear protection. I'm not sure why it's not more widespread. It's something that steel groups must get a handle on, because if you have ringing, you have some hearing loss. And eventually it's going to pile up by the time you get to my age, you're going to start understanding that you have lost it, there's nothing to do to reclaim it.

**Khai Alcantara:** Right. So how would you, as a music director, I know from being in rehearsals in UWI Steel, some of these things that you mentioned, you've mentioned it for quite some time, setting them occasionally, the warming up of the wrist and stuff like that. But are there other ways that you would have ventured into in terms of promoting proper, I guess, physical practices when you guys are playing the instrument?

**Mr. Jessel Murray:** Well, I haven't done so much. I mean, as you have mentioned, I've already tackled those. One of the things though, which I always recommend to people, once there is suspected damage, steel playing is sports related. I recommend it strongly, and people have taken up, they go to a sports specialist to determine whether they will need some type of medical intervention.

And that's to be done for any instrument. I've had pianists who have come to me the same way. I've had vocalists who come with suspected nodes. I send them off to the appropriate, in their case it would be to ear, nose, nose and throat specialists. You need the intervention of a specialist in your field. So therefore, if you have already reached the stage where you are experiencing discomfort in the playing of your instrument, you must seek a medical intervention and a plan to get better, including rest.

**Khai Alcantara:** Right. And I know you would have mentioned before the severe case of the players within the National Steel Symphony Orchestra, the back pains. But have you ever encountered a player who has experienced something even more severe than that and what were the outcomes and those sorts of things?

**Mr. Jessel Murray:** No, no. Most of the players, the back pains fine. Most of the players, it has been wrist related. It's either hand or arm related. And they have had to, and when, it always scares me when I hear people with this sort of electrical shocks, because that's nerve damage. There have been cases of people with bits of what has been diagnosed as carpal tunnel. There are other persons who have been diagnosed with different types of strain and who have needed a specific type of intervention. But I'm not a medical doctor. I just hear of the diagnoses.

**Khai Alcantara:** Right. Another thing that I have observed as well is diet. Because of course, you know, with the panorama season, we have a culture here in Trinidad and Tobago that we need to practice until the sun rises. And at that time, you don't always have access to healthy choices of food. So people often opt for maybe fries, fried chicken, you know, things that are not otherwise healthy in the long term. So that is another factor that I...

**Mr. Jessel Murray:** Yeah, that's another, yeah. So diet and nutrition is, yeah, but that's an offshoot. And that's something I think if people are recognizing that, and of course, as we get more sophisticated, people are recognizing that. The good news is that, of course, especially with the prevalence of women in the panorama space, we do tend to find that people are becoming more organized, having rehearsals less late, but still too many traditional groups are going into the wee hours of the morning, which is... And it's not even a matter of nutrition, it's poor time management, because that is then impacting on their work and study habits. But people have been clamping down on that as well.

Khari Alcantara: Right. And in your experience thus far, have you ever come across any particular health and safety guidelines or protocols established by organizations affiliated with the steelpan? And have you ever seen anything, let's say, written on paper or anything that states...

**Mr. Jessel Murray:** Right. No, well, I mean, same thing with any music group. I've never seen any health things. One of the things I do try to practice is that after, let's say, you do a 2-hour rehearsal, of course, in our case, we tend to do even less than that, that you must give a sufficient break for people to both mentally, definitely physically, let people rejuvenate. So the health and safety guidelines will be for any type of employee in the... If my memory serves me well, for instance, symphonic orchestras, United States, Europe, and so forth, normally after two hours of rehearsal, you're supposed to have at least a 20-minute break. And same thing for performance. And while we don't have two-hour rehearsals straight through, we do certainly have built-in breaks, whether they... It normally works out to be about 10 minutes, but it allows people that freedom and to clear things there. So those are the guidelines which I've adopted throughout the

particular workspace, but I haven't seen anything which is specific to steel, but perhaps you may be onto something there.

**Khai Alcantara:** Right. When I thought about this, I heard--I remember you mentioned it's sports, you know, you must treat things like sports and it's...

**Mr. Jessel Murray:** It is a sports injury.

**Khai Alcantara:** Yeah.

**Mr. Jessel Murray:** It's repetitive, you know, sports injury is repetitive stress.

**Khai Alcantara:** And I was thinking about, you know, basketball as professional athletes, people that do this for a living, the organizations that they work with, they understand that it's not just about going and performing, but they understand that there are several factors that impact their ability to perform. So they have medical staff, they even go as far as having, I guess, nutritionists and those kinds of things. And I just had the wild thought that, you know, maybe someday, I don't feel like we're anywhere close to getting there as yet, but I feel like why not we as a steelpan fraternity, why don't we add up the same thing? So instead of going to public health institution or something like that, why not have people who are specifically assigned to a band to kind of look after the physical well-being of the players in terms of what they experience from playing the instrument or having nutritionists and those sorts of things.

**Mr. Jessel Murray:** You're talking short term and long term or having a cadre of persons who can act as consultants, because initially, I think that you'll be able to share the cost because nobody's going to do that. I mean, I'd love to. It's a lovely dream. But, you know, you have to remember that not even the players, you have to first of all develop a cadre of players who for him, for them, like the National Steel, this is their occupation. If you build that as your

occupation, you can attach those. But when you have persons where all of these groups, they're quasi-professional or amateur, I think it would be very difficult then to attach a professional. But I think your thesis could very well be towards that sort of professional engagement. You're absolutely right.

It's not a dream. That's what you're writing for, you're recommending. I think this is part of your recommendations, that as each of the groups becomes more professional, and as people become either professional part-time or professional full-time, these persons should be acting as necessary consultants or same part or full-time staff. You're absolutely on the right track.

**Khai Alcantara:** Right. So, that's it for all of the questions. But before we conclude, is there anything that you feel like we haven't spoken about that comes to mind that you'd like to share?

**Mr. Jessel Murray:** No, I think you've covered the topic. So, I think what I would have just said

is that we need to think of when are we going to have more, such as any of the symphonic orchestras, because we have to start thinking. And that's one of the things. We have to stop this concept of, I know the word, "stage-side" I think stage-side has to become more professional. If

stageside--even if we keep it as a traditional term. The term stage-side implies a sort of relationship. So, let me give a parallel in sports like cricket. So, in West Indies cricket, there are now people who have what are called, and in fact, worldwide, what are called central contracts.

It means that they're so highly valued that even with injury, they will continue to be paid and supported through medical intervention because they're highly prized. We need to get our stage-

side persons to have what we would term central types of contracts where they're supported, where they have access to nutrition, where they have access to all types of greater medical care.

So, on the off chance that they're injured, they will have the comfort of knowing that they will

get care and they can return to the stage-side as either part-time or full-time credited persons. That is what you're after there. So, that's a parallel taken as well from sport.

**Khai Alcantara:** Right, and as I think of that, one of the things that I feel like would be a challenge with all of these recommendations that I would have proposed and what you would have said yourself, is the whole thing where players these days, in my observations, they're not really, I don't want to say loyal, but they don't stick with one band. And I have been guilty of that myself. Some people have asked me on the rare occasion, you know, what band do you play with? And I myself can't really give them an answer.

**Mr. Jessel Murray:** Well, that's why, but central, there's no guilt in that. That's a system. But if there's a central contract that says you belong to this group and people are prepared to, like any contract, they are prepared to pay for your exclusivity, then you don't have to look elsewhere. They have to make it worth your while and say, we have all of these gigs lined up and these rehearsals, you're committed this way. One, it doesn't allow you time. Two, you're contracted. You're not allowed to play anywhere else.

**Khai Alcantara:** Right.

**Mr. Jessel Murray:** Yes. So, there's no guilt in that. That's the market at the moment. If people want to change the market, you have to offer the terms for it.

So, for instance, I know that the National Philharmonic does not have central contracts. They pay people by rehearsal and by performance. Yet, there's this feeling that if they have, the NPO (National Philharmonic Orchestra) has a gig, that it trumps everything else. The answer is absolutely not. If you don't give me a central contract that says I'm exclusive to you and you're paying me, and if I'm not being, and if you're paying me by the gig and by rehearsal, it means if I

get sick, I'm out of pocket. So, therefore, if you're paying me and saying I'm expected to fulfil these duties and I'm covered no matter, even with sickness, in a reasonable manner, then I don't have to gig elsewhere. The people who employ can't have it both ways.

**Khai Alcantara:** Right. Alright. Well, that brings us to the end of the questions. Thank you for your time.

**Mr. Jessel Murray:** You're welcome and good luck. Alright, I'd like to see how it turns out.

**Khai Alcantara:** Alright, thank you, sir.

**Mr. Jessel Murray:** Alright, take care. See you later.

**Note:** This interview has also been uploaded as an unlisted YouTube video. Attached is the URL link: <https://youtu.be/-aXdsHMIhSk>

## APPENDIX D

### Interview with Dr. Mia Gormandy-Benjamin

**Khai Alcantara:** So my first question is, you know, how do you perceive the physical demands placed on steelpan players, especially in the context of prolonged rehearsals and performances? What's your take on that?

**Dr. Mia Gormandy Benjamin:** Well, the prolonged rehearsals, it is something that I think can affect people, especially if you don't consciously prepare yourself to be in the space. So sometimes I would notice one, some people don't maybe wear the most comfortable shoes to play and I think something like wearing the proper shoes would be important in terms of having, you know, in terms of rehearsing, especially for panorama when they're long nights. Also things like the height of the stand, you know, when pans are in racks, especially if you play in a background pan, you don't get to adjust how tall it is, you know, so somebody who's really tall could really injure their backs if you, you know, if you don't hold your posture in the best way. So, I mean, it is something that needs further exploration, I would say, which is good.

**Dr. Mia Gormandy Benjamin:** It's a good thing you're doing this study. And the physical demands can be high, depending. So it depends on the person, I think, some everybody's body is different. So some people wouldn't even bat an eye at standing up behind a pan for hours, where some people might be tired, you know, but I do think it's something that is worth exploring. And I do think that sometimes the physical demands can be high, not that it's always high, but I think it can be high, depending on if that person maybe, of course, had a whole long day, you know, of work, and maybe they do physical labor, and then they come and stand up behind a pan for hours, that's very different to somebody who, you know, was sleeping all day, and had rest all

day, and then came to the pan to rehearse. You know, so it sort of really depends on the person and how, and the physical demands of the of the requirement of playing.

**Khai Alcantara:** Right. Yeah, yeah. I can definitely attest to some of those things that you would've said, because especially for me.

**Khai Alcantara:** Yeah. You hearing me? Hearing me?

**Dr. Mia Gormandy Benjamin:** Yes, yes, I hear. I'm hearing you now. Say it again.

**Khai Alcantara:** Yeah, so I can definitely, I definitely can relate to a lot of the things you said just now, because myself in particular, and I know you can't see it from from the screen, but I am a relatively tall person as well. So one of the challenges that I always face when playing with bands is the height of the stand, you know, it doesn't always, unless it's an adjustable stand, but let's say playing in the rack, for example, or there have been some bands that I've played with that have racks, it's like a, I don't know the best way to describe it, but it's like the front line, they have racks for the front line that are kind of connected.

**Khai Alcantara:** I saw something like that in Couva Joylanders when I played with them, I think it was the last panorama season. So when you have stands that are pre-made, and there isn't that option to adjust the height. I usually have a hard time getting to rehearsals where that is concerned, you know, to take a lot of breaks and kind of recuperate myself before getting back in there. So definitely relatable.

**Khai Alcantara:** So the next question, you know, in your experience as a tutor, you know---I'm sure you would have had some one-on-one sessions with your students. I'm not sure how things are done at UTT, but I know in UWI we have like one-on-one teachers, so teachers that meet us

on a frequent basis one-on-one. Have you ever noticed, you know, maybe, for example, one of your students missing class pertaining to injury, let's say, related to playing the steelpan.

**Khai Alcantara:** So yeah, have you ever noticed anything like that? Anything affiliated?

**Dr. Mia Gormandy Benjamin:** You broke up there for a second. Can you repeat the question?

**Khai Alcantara:** Yeah, I was asking, you know, have you ever experienced, you know, working with a student who would have attained an injury related to playing the steelpan? You know, what are some of the most common things that you notice among them?

**Dr. Mia Gormandy Benjamin:** I can't say I've come across an injury because of playing pan. I mean, I've had students with injuries, but they would have injured themselves another way. But yeah, sometimes students might have issues with their wrist. I've experienced that. Not in Trinidad though, because I also used to teach in the U.S., and some of my steelpan students in the U.S., you know, they will have, you know, like a brace on their hand because they felt they would have been playing in a certain way that maybe reignited a sort of injury that was from there before or something like that. But the most common issue, if there's an issue, seems to be the back. You know, like if the stand is too low, if the stand is too high, you know, you can really have issues in that way. But I can't think of any one particular instance where a student had, you know, some sort of injury due to the pan. Because another thing too is like if you're a tutor, and I do this, is that you need to make sure that the student has his stand at the right height so that they don't injure themselves, you know, and they're playing in the right way. Because I always say if your wrists are hurting, that means you don't have the right technique. Your wrists really shouldn't be hurting like that, unless maybe you injured it. There should be another reason why it's hurting, not because you had perfectly healthy wrists and your wrists are hurting you. That

would make me question the person's technique and how they're holding the sticks, because you shouldn't be playing in a way that is causing you injury. You know, because what we do is not, the way in which we play and the concept of playing music using your hands, that's not new. Drums have been existing for a very long time. You know, there are lots of percussionists globally, you know, that have to hit things with a mallet, you know. So the question then becomes, are you using best practice to protect yourself and to protect, you know, your ability, your longevity as a musician?

**Khai Alcantara:** Right, right. Yeah, and you know, funny enough, you actually kind of answered, started answering, see, you hear me properly, right? I'm getting a notification, that connection is kind of...

**Dr. Mia Gormandy Benjamin:** Yes, I can hear you.

**Khai Alcantara:** Okay, you kind of started answering the third question there with that response and you would have answered some by, you know, pointing out the technique, you know, how the students or the players play the pan, also have, also play a part in, you know, injuries and all those sorts of things. And you would have also mentioned the height of the stand, if it's possible to do that.

**Khai Alcantara:** What other practices or habits do you encourage your students to apply to minimize the risk of injury?

**Dr. Mia Gormandy Benjamin:** Well, admittedly, it's not something we talk about often, but instead of talking about it, I tend to notice and I might say something like, your back will start hurting if that stand is that height, you know, as opposed to addressing it as, okay, this is something that you need to do to protect yourself from, you know. But some of those things

would include, of course, the height of the stand, how you stand behind the instrument, things like what shoes you wear, what shoes you wear doesn't seem like it'll be a big deal if you're playing for a short period of time. But if you are rehearsing for a long period of time, like panorama practice, for example, you need comfortable shoes.

Your shoes can really affect the, you know, how you physically are. And these are things that I didn't start thinking about till I started getting a little older. Because when you're 19 and 22 and, you know, in your 20s, your body is working at optimum. You know, so you're not thinking, you know, as a young person, you're not thinking about these types of things. But the older you get, the more you start realizing, oh gosh, what's going on my knee? Why is my knee? You know, like all these little things that come as you start gradually aging, you start thinking about, oh my goodness, I need to be, you know, I need to be conscious about it. And also one very, very important thing when it comes to health is the ear, is protecting the ear. We don't protect our ears as pannists. The volume in which we play, especially, you know, for panorama in particular, because this is where a lot of injury could happen, right? Because panorama is like the extreme, you know, having to wear protective gear. Because I have, I have earplugs, for example, that has been molded to my ear. And then you can adjust the filter of how much you want to hear. You know, and I would recommend many people get, invest in really good earplugs, because if we're musicians, and this is what we do for a living, we don't want when we get to 55, we can't hear anything. I mean, we'd have to retire. So I mean, so good practices would include, of course, stands, good shoes, good proper posture, behind instrument, proper technique, and then of course, protecting your ears as well.

**Khai Alcantara:** Right. Okay, so I want to not step away from the topic, but we will focus more on the impacts from the perspective of the player, right? I want to take you, and not too far off, but by asking you, what other practices in the steel pan community that's not specifically related to playing, that you see contributing negatively to the health impacts, but not specifically playing? Are there any other things? Let's say what goes on in the pan yard during the rehearsal, you know, anything else that you would have noticed that could potentially, maybe not now, but maybe later on, are there other things besides playing?

**Dr. Mia Gormandy Benjamin:** Oh, yeah, absolutely. I mean, some, so, well, I'm very familiar, of course, with All Stars, because that's the, that's the band I'm in. So I notice things differently sometimes when I go into other pan yards. So like, and things that I sort of take for granted. So in All Stars pan yard, for example, smoking is, we don't smoke anywhere near, you know, where we rehearse. And if there's somebody smoking, they have to kind of go out. But then you go to some other pan yards, and there are people smoking right there. And it's like, you're getting second-hand smoke. You know, and that's something that could be a danger to your health, you know, for sure. So the second-hand smoke, they're also... sorry, just give me one, one minute.

**Khai Alcantara:** Sure.

**Dr. Mia Gormandy Benjamin:** Yeah, sorry about that. Yeah, so the, the second-hand smoke is definitely a problem. And one thing I actually thought of was the exhaust from cars could also be a thing but other than that, I can't really think of environmental issues that might, you know, cause some trouble. I know too, you know, sometimes bands provide food for their players. We, well, at All Starts, we try to provide healthy meals, you know. So that's something that's considered when it comes to providing meals for our players. Because we realize over the years,

know, players start to become a little sluggish, or, you know, they're moving, you know, they're just tired, and then they want to go home, and it's hard to run practice at a certain hour, you know. So what, what you also eat is also very important in your health. So things like that, we've taken into consideration in the recent past.

**Khai Alcantara:** Right. Yeah, for sure. I know the smoking is definitely a big thing. Food, of course. And that, that, that aspect, in particular, with regards to food, I think that's a two-way thing. You know, it's not just about the band feeding, but everything else you do before, you go into the pan yard as well, you know. So it requires, it requires effort from both sides, you know, with that. I know a next thing that could fall along the line of smoking too is the drinking. I know that's...yeah.

**Dr. Mia Gormandy Benjamin:** Well, drinking is prohibited by us. Even though people, the older guys, of course, will try and steal a little thing, but they know it's against the rules for practice. After practice, you could go in the bar and get as drunk as you want. But, but, you know, that's a, that's a big no-no, even though some people still do it of course, especially the older guys who've been in the pan yard for many, many years.

**Khai Alcantara:** Right. So kind of going back to your question with, with regards to, you know, playing technique and adjusting the stands and the earplugs and all of those things. Those things to me, based on, you know, the people that I would have been exposed to in terms of teaching me the instrument, um, those are common things you hear. Any good teacher will tell you about those things. They wouldn't just show you how to play the pan, but they would also show you about preparing yourself, warming up, all of those things. So all of those things that you would have told me, those are common things. Those are things I, those, those are not things that I've never heard of. The question I want to ask you, you know, maybe the topic that's crossed my

mind, um, especially being a student, I mean, a teacher. So you always have to be thinking about ways to educate your students, um, to share information with them. Have you, undergoing these processes, have you tried to develop or advocate for any specific, I guess, technique or habit that you would have never really heard of growing up as a player yourself, but you know, maybe you've experimented with it and it works for you. And maybe you would have gone as far as recommending it to other people. Have you ever done anything like that?

**Dr. Mia Gormandy Benjamin:** Earplugs...Earplugs, I would say is a big one because growing up, earplugs wasn't a thing. The concept of trying to protect your air is that, I mean, that was nowhere on my radar until I was much older. Um, so I mean, something like that, we try to encourage, um, and then also to where you practice, you know, if you practice in a, in a room full of walls and you're practicing and you're playing really loudly, you're doing damage to yourself and you're doing damage to your ears, you know? So, I mean, those are the types of things I would say, you know, in acoustics as well, of course, the acoustics and ear protection, I would say probably would be at the top of the list.

**Khari Alcantara:** Okay. So you started, you started answering a little bit of the next question in terms of the environment. Um, so the question I have for that is, you know, in terms of, so I want you to think about it on two fronts, so you have the instrument, the design of the instrument, and then of course, where the instrument is being played, right? Um, in terms of instrument design and the setup, um, are there adjustments or innovations that you would suggest or you would like to see being carried out to kind of mitigate some of the issues that steelpan players face?

**Dr. Mia Gormandy Benjamin:** Um, well, that's a good question. I mean, some of the, now I've seen some, some things in the recent past, like for example, in Japan, which I told you, I did, I did my research over there. Noise is a very big thing for them. As in, you cannot make noise. You're in a residential area. You can't practice. See, like we could just have a paniad in the middle of a community and it's one o'clock in the morning and everybody playing and the neighbors and stuff aren't saying anything. That is a huge no-no. So what I've seen, um, Japanese pannists do, uh, because they usually have to leave where they live to practice and come back or go practice in the park or go practice in a different location.

So what I've seen them do is they've actually come up with this concept of, um, it's like a foam ball of sorts and they put it on a stick and you get the same weight of the, for example, like a tenor stick and they're playing pan like normal and they can use the same amount of force as if they were playing loudly. And it like diminishes the volume of the pan significantly. So I thought that was really very innovative that they were able to.

**Khai Alcantara:** Yeah.

**Dr. Mia Gormandy Benjamin:** So that's something that I've seen that, that can help that we don't use at all over here. You know, also, um, practicing at a very soft volume helps you with control. Let's just say you didn't have any foam ball and you use a practice, you're not at a soft, um, volume. So it's not overly loud, especially if you're in your environment and you know, you, you're sort of playing at a very loud volume, even practicing softly can help with your technique. So those are the things that, you know, that, that, um, at least I'm thinking about while you ask me these questions.

**Khai Alcantara:** Right. Um, so what, what role do you believe educators and, you know, teachers like yourself should play in, um, raising awareness about the risks associated with playing the steelpan?

**Dr. Mia Gormandy Benjamin:** Oh, absolutely. I mean, we have a very important role to play because you don't know until, until you know, you learn, right. So these types of, of discussions aren't necessarily happening out in the communities, at least not at a high level as, or not as often as we'd like. So educators of course, play a very significant role in making sure that, that budding musicians and pannists use the right technique, use the right, um, height of the pan, use the, the sort of right practices to make sure that they can ensure longevity in their students. Right. And make sure that the students will have a successful and healthy career because, you know, bad practice can lead to unhealthy habits, which can shorten the lifespan of someone's career.

**Khai Alcantara:** Right. Um, I kind of, you know, as we, as we are sitting here and discussing it, I'm kind of thinking about it, um, like a sport, you know, you know, you have the NBA and you have football and, you know, yes, they're going to play, play football, play basketball and they want to win and all of these things, but they also have a, um, how to say, they also place immense priority on ensuring that they're healthy. So, um, what they're eating, what they're drinking, um, staying away from certain things because you know that it can potentially hamper your career. And in some cases, you know, with the millions of athletes that we know out there, um, you know, I'm sure we know at least one case of somebody who probably had potential to go much far in their career, but they had to stop or the stuff involves, but they're just not where they could have been had they practiced the correct things to prevent that. So I kind of think about it in that sense, especially when you, you, you say the way that you said it, that's a thought that immediately came to mind, you know, it's kind of thing about sport because you are using

your body, you know, your wrist, you know, your feet, your back, all of this, we're using all of these things. It may not be to the extent that, you know, athletes might be using the entire body, but nevertheless, you're still using your body to, to, um, create sound out of the instruments, you know?

**Dr. Mia Gormandy Benjamin:** Absolutely.

**Khai Alcantara** Yeah. So based on your observations and your experience, what further research or actions do you think are necessary to address, um, alleviate the negative health impacts faced by steelpan players in the community?

**Dr. Mia Gormandy Benjamin:** Well, I think of course the education of it, right? I mean, even for band leaders, arrangers, those who have leadership roles in steel orchestras across Trinidad and Tobago, they also have to be educated.

I did see, um, Pan Trinbago make some really good steps in that direction in offering free ear tests, um, for pannists. I don't know if you saw that. I was like, well, when was this boy last year, year before? I can't recall, but they were, they, they had a few panyards that were kind of strategically placed within the communities. Um, I know Allstars was one of them and you could have come in and do a free ear test. And I think too, it's not just about the ear. No, we've kind of been focusing on the ear because to me that is the biggest health challenge for pannists. Um, but I think in, in looking towards educating the steel band community, I mean, I'm not sure exactly how that could happen. It might have to be through PanTrinbago because they're the ones who are sort of the governing body of all the steel orchestras in Trinidad and Tobago. But if that sort of education can expand, um, to include proper health practices, um, I think to a discussion on,

on racks, right. And, and how they are built, because we're not all one size. We're not all one height. Um, and these things can affect us.

So for the exploration in engineering with that in mind of, of, of, of proper practice and how that can, um, lead to further developments in the way in which your pan is hung, the height in which it's hung, what we're standing on, you know, when practice takes place, I think further exploration, you know, with, with innovation and in terms of the, the mechanics of it, I think would also be really helpful. So the education of it, which is the, why we need it. And then, you know, persons in that area of engineering that can help sort of come up with strategies of how we can, can minimize some of these issues. Also people who are familiar with acoustics and sound, um, at the rehearsal spaces as well, because on many of the, the bands, you know, throughout the year, might practice in an enclosed room, you know, is your room treated, you know, to minimize the, the sound, how are the players playing within that space to, to make sure that they are exhibiting control, you know. So, um, I think those are some of the steps we can definitely take to help support good health practices.

**Khai Alcantara:** Right. Nice. Nice. Um, before we conclude, is there any, you know, particular personal experience or, um, insight that you'd like to share perhaps that we may not have necessarily covered through the questions? Is there anything that comes to mind that you would like to share?

**Dr. Mia Gormandy Benjamin:** Um, yeah, I mean, I had my own experience. I, I was on the road with All Stars. I think we were in, no, it was here in Trinidad, um, in August for pan month.

And I was standing in a location that was a bit central. So everybody could kind of get, you know, the, the repertoire from me in a sense to kind of determine on the road is sort of like a, we go, you know, go by vibes and stuff. And I happened to be standing right by the drummer and I

had my earplugs, I packed my earplugs and left them in my car. And the, I, I thought that night when I got home, I was going to be deaf in my left ear.

**Khai Alcantara:** Right.

**Dr. Mia Gormandy Benjamin:** Uh, it was so, it was really, really, really bad. And I was like, it was just ringing. And then I was feeling like something that goes in my ear. And I was like, I need to go get this checked just to make sure. I mean, eventually it's sort of, um, solved itself. And I was on Google reading articles about it and learning about the ear and then they're like small little fine cells and hair that's in your ear that they're to protect your ear and all these things. Sometimes when it goes off, you know, and it's a little bit off, it kind of solves itself, kind of like the body heals itself type of thing. And then I told myself never again, will I ever forget my earplugs.

**Khai Alcantara:** Yeah.

**Dr. Mia Gormandy Benjamin:** So, yeah.

**Khai Alcantara:** Well, Dr. Gormandy, I'd like to thank you for the time.

**Dr. Mia Gormandy Benjamin:** No problem.

**Khai Alcantara:** Um, I know especially being a teacher is a very time consuming thing. So I'm sure you would have had to, um, perhaps put something aside, um, to facilitate this interview. So I want to thank you for your time, um, for your knowledge, for your expertise, um, your contributions here will definitely be valuable to the research.

**Dr. Mia Gormandy Benjamin:** No problem at all.

**Khai Alcantara:** And maybe by extension, the broader Steelpan community. So, um, I'll be happy to share the results from my findings for you.

**Dr. Mia Gormandy Benjamin:** I'd appreciate it. Yeah.

**Khai Alcantara:** So when, when that time comes, I'll reach out to you and I'll have that sent to you. All right. So you enjoy the rest of your day, take care.

**Dr. Mia Gormandy Benjamin:** All right, you too. Thanks so much. All the best.

**Khai Alcantara:** Thank you.

**Dr. Mia Gormandy Benjamin:** Okay, bye.

**Note:** This interview has also been uploaded as an unlisted YouTube video. Attached is the URL link: <https://www.youtube.com/playlist?list=PLEBh6lwqUx4AJxRD5rX00KDtOUlrhm4Uc>

# APPENDIX E

## Google Form Questionnaire

4/26/24, 12:53 PM

The Negative Health Impacts Associated with Cultural Practices within the Steelpan Community

### The Negative Health Impacts Associated with Cultural Practices within the Steelpan Community

Welcome to my study on The Negative Health Impacts Associated with Cultural Practices within the Steelpan Community. This research seeks to uncover the physical and mental health challenges faced by steelpan players, aiming to enhance understanding and support within this vibrant cultural practice. Your insights are crucial for identifying common issues and improving health guidelines.

Participation is anonymous, ensuring your responses remain confidential. This questionnaire, taking only a few minutes, offers a meaningful opportunity to contribute to the well-being of the steelpan community. I value your honest and thoughtful input.

Thank you for helping me promote health and sustainability in our cherished musical tradition.

\* Indicates required question

1. 1. How many years have you been playing steelpan? \*

*Mark only one oval.*

- Less than 1 year  
 1-5 years  
 6-10 years  
 More than 10 years

2. 2. On average, how many hours per week do you spend practicing or performing on the steelpan? \*

*Mark only one oval.*

- Less than 5 hours  
 5-10 hours  
 11-15 hours  
 More than 15 hours

3. 3. Have you ever experienced hearing issues that you think are related to your steelpan playing? (e.g., tinnitus, hearing loss) \*

*Mark only one oval.*

- Yes, frequently
- Yes, occasionally
- Not sure
- No, never

4. 4. Have you ever sought medical advice or treatment for conditions related to playing the steelpan? \*

*Mark only one oval.*

- Yes, more than once
- Yes, once
- Considered but never did
- No, never

5. 5. Are you aware of any health and safety guidelines provided by your band or any steelpan association regarding playing the instrument? \*

*Mark only one oval.*

- Yes, fully aware
- Somewhat aware
- Heard of them but not familiar
- Not aware at all

6. 6. Is there enough awareness and education within the steelpan community about the potential health risks and how to mitigate them? \*

*Mark only one oval.*

- Yes, definitely
- Somewhat
- Not really
- No, not at all

7. 7. Have you participated in any workshops or training sessions focused on reducing health risks associated with playing the steelpan? \*

*Mark only one oval.*

- Yes, more than one
- Yes, once
- No, but interested
- No, not interested

8. 8. Have you experienced any physical discomfort or injuries that you believe are related to playing the steelpan? If yes, please describe.

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9. 9. What kind of protective gear, if any, do you use during performances or practice sessions? (e.g., earplugs, gloves)

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10. 10. How do you manage the physical demands of playing, especially during long performances or rehearsals? \*

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- 11. 11. In your opinion, what are the most significant health challenges facing steelpan players today? \*

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- 12. 12. Has your participation in steelpan music affected your social well-being or relationships? If so, how?

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- 13. 13. How supportive do you find the steelpan community when it comes to discussing and addressing health issues? \*

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- 14. 14. Do you believe that the materials or chemicals used in the making or maintenance of steelpans pose any health risks? Have you experienced any such issues personally? \*

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- 15. 15. What changes, if any, would you like to see within the steelpan community to improve the health and safety of its members? \*

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16. 16. Do you think cultural practices within the steelpan community contribute to the health issues you or others have experienced? How so? \*

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17. 17. What advice would you give to new steelpan players regarding health and safety? \*

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