String Players with Hyperhidrosis: An Investigation of Performance Problems due to Excessive Sweating

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Introduction

Hyperhidrosis is a medical condition characterized by extreme and excessive sweating coating nervous areas of the body to regulate body temperature. According to the International Hyperhidrosis Society, almost 35% (560 million) people suffer from hyperhidrosis (1). Other estimates range from 2 to 4% of the US and 1 to 2% in Europe (2). With symptoms of excessive sweating, most people with hyperhidrosis experience significant physical, psychological, and social discomfort in their daily life, especially for those who mainly use and work with their hands.

In addition to the potential to damage musical instruments (3), excessive sweating can influence biological factors necessary for personal safety (4) as well as performance techniques essential for playing musical instruments. Musicians in our society to modify abilities to perceive vibration, which can decrease strength for string players (4). Musicians from the area can also alter friction levels between the fingers and instrument, making it harder to control and manipulate finger placement and technique (5). Such situations can lead to increases in biomechanical pinch and grip forces on both hands. Increases in these forces can lower technique, speed, and quality of music. Although evidence suggests that excessive sweating can be an emotional stress for string players (4). It is also a result of the interplay between sweat and the genetic condition (6). Musicians with hyperhidrosis may purposely limit or avoid high-stress situations, including those associated with repetitious movements, and sensations can result in performance anxiety. Many musicians who cannot control their sweating report significantly higher levels of stress (7).

Performing. Follow-up interviews with these students strongly suggested the need for additional research on the effects of hyperhidrosis. The results also indicated that excessive sweating is often visible to peers and audiences and, therefore, also likely to create embarrassing situations related to excessive sweating. However, subjects reported relatively low levels of changing social plans (8) and public distress (9). In addition, the sample population was small and did not diagnose subjects with hyperhidrosis, so subjective scales, so objective measures could be used in the future to collect empirical data. In order to better understand the experience of having hyperhidrosis, the purpose of this study is to use a distinct framework to investigate how string players are impacted by hyperhidrosis.

Specific aims include:

1. Examine the frequency, intensity, and negative influence of hyperhidrosis on a non-musical life events.
2. Investigate the frequency, intensity, and negative influence of excessive sweating in various musical contexts.
3. Assess the overall impact that excessive sweating has on the ability to play a string instrument.
4. Assess the level of influence that excessive sweating has on technical, musical, and psychological abilities to perform music.
5. Explore the relationships between levels of influence across performance abilities on the overall impact of hyperhidrosis on the ability to perform music.
6. Investigate the reciprocal relationship between excessive sweating and performance anxiety.
7. Assess aspirations to try treatment options and perceived levels of importance of hyperhidrosis to avoid.

Method

An online survey was developed and regulated using Qualtrics Software. Subjects were recruited using a purposive sampling methodology. Recruitment protocol ensured subjects to participate according to the needs of the study. In addition to the purpose of recruiting musicians, the Dermatology Advisor Checklists of Symptoms for Self-Identification of Hyperhidrosis were built into the survey and used for cross-referencing to patients. In addition to a brief demographic section, the survey displayed a series of 104 VAS (visual analog scale) items to assess: frequency of hyperhidrosis, intensity of hyperhidrosis, and negative influence of excessive sweating across musical contexts, 3) levels of influence on: a) psychosocial, b) technical, and c) musical abilities across performance contexts, and d) levels of influence on playing ability. Data were exported into SPSS and processed according to the aims of the study.

Results

Overall impact of excessive sweating on the ability to play a string instrument.

An examination in Figure 1, subjects reported frequency of non-musical related problems associated with excessive sweating. Problems include: social (change social plans, public distress, sweating while eating), psychological (worry, occupation, affect (sleep or work or career choice), physical discomfort (pain) and biological (pain, irritability). The highest frequencies of problems reported psychosocial vulnerabilities associated with excessive sweating. However, subjects reported relatively low levels of changing social plans due to excessive sweating.

Frequency, intensity, and negative influence of excessive sweating in various musical contexts.

The scatter plots and trend lines in Figure 1 and 4 show the relationships between frequency, intensity, and negative influence of sweating during solo performance and jury/auditions. Dermatology Advisor Checklists of symptoms for self-identification of hyperhidrosis. The resulting cohort (N=51) included 23 females, an average age of 34.74 yrs. About half reported Viola as their primary instrument, and the other half reported their primary instrument as a stringed instrument. An additional analysis indicated a statistically significant bivariate correlation between the influence of sweating on performance anxiety and the influence of hyperhidrosis on anxiety (r = 0.38, p < .005).

Influence of excessive sweating on psychosocial, technical, and musical abilities related to playing a string instrument.

The scatter plots in Figure 4 show that the overall impact of sweating of the ability to perform music is significantly related to the music-specific conditions and are lower for individual practice sessions and higher for examinations and solo performance. Additional analysis indicates a statistically significant bivariate correlation between the influence of sweating on performance anxiety and the influence of hyperhidrosis on anxiety (r = 0.38, p < .005).

Table 1: Linear Regression Model summary

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>p-value</th>
</tr>
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<tbody>
<tr>
<td>Frequency</td>
<td>0.036</td>
</tr>
<tr>
<td>Intensity</td>
<td>0.000</td>
</tr>
<tr>
<td>Negative Influence</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Figure 7a shows the level of interest in trying treatment options for hyperhidrosis and the importance of hyperhidrosis to musicians. Over 70% of subjects were interested in trying treatments and over 80% of subjects with hyperhidrosis would like to identify treatments that affect hyperhidrosis. In addition, the sample population was small and did not diagnose subjects with hyperhidrosis. In order to better understand the experience of having hyperhidrosis, the purpose of this study is to use a distinct framework to investigate how string players are impacted by hyperhidrosis.

Conclusion

In conclusion, the results of this study suggest that hyperhidrosis has a negative impact on the ability to play a string instrument, and the effects increase as the exposure and importance of the context increase. Excessive sweating can affect psychosocial abilities in playing music as well as personal psychosocial outcomes. The results of this study show that excessive sweating can affect performance anxiety and the importance of hyperhidrosis to musicians. Since over 70% of subjects were interested in trying treatments and over 80% of subjects with hyperhidrosis would like to identify treatments that affect hyperhidrosis, the effect of hyperhidrosis on musicians is a topic that future research should explore.

References

3. Littlejohn JS, Littlejohn M. The validation of visual analog scales for measuring pain intensity in the elderly. The age range was noted and the data on the incidence of hyperhidrosis is more widespread. Figure 7b demonstrates that excessive sweating can cause musicians to change their technique.