

A Phenomenological Study on the Bidirectional Relationship Between Emotional States and Musical Performance

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ABSTRACT

Musicians find performing cathartic as it often evokes emotions through their performance which in turn influences their own emotional state. Currently, there are not enough studies that investigate the impact of a musician's emotional state on their musical performance. The current study focuses on exploring the bidirectional relationship between music performance and emotions among violinists and guitarists. The sample group consisted of 6 violinists and 6 guitarists from Mumbai who had been performing in a group setting (orchestra, band, etc.) for a minimum of 4 years. Interviews were carried out based on a semi structured interview schedule based on factors that influence playing. Thematic analysis was carried out and 4 broad themes (emotional reflection while playing music, influence of external factors, personality traits of participants and emotions felt at different time markers) were extracted from the collected data. Major findings of the study involved musicians intentionally inducing emotions in listeners in familiar genres because they can anticipate the associated emotions due to crystallised intelligence and conditioning. Moreover, external factors like audience and location also influence their performance, as musicians associate specific emotions with these contexts. These findings can enable researchers and musicians to develop techniques to manage such phenomena and better emotion regulation.

Keywords: *Performance, musician, emotions, violinist and guitarists*

In everyday life, humans encounter music everywhere, from different strata of society to different centuries. It is an integral part of human life, an art that influences culture and remains as a marker of history, society and life in general. It reflects the daily life and experiences of people, connecting society through the universal and eternal experiences of simply being human.

Music often conveys meaning, feelings and emotion and is primarily a mode of communication, whether its purpose is entertainment, therapy, or enhanced creativity. It can be defined as structured sounds produced by humans as a means of social interaction, expression, diversion, or evocation of emotion" Koelsch, S. (2019). Music usually feels undefinable as it has such long lasting impacts on human life. Music often conveys different emotions and reflects different cultures, which result in linguistic constructs used to classify and describe specific types of music as genres (Cerati G. 2021). There are many different

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musical genres like classical, pop, rock, soft rock, jazz, Christian R&B. A genre may be characterised by the instruments typically used in it (Percino et al 2014). For instance, classical music is typically associated with the piano and violin and rock music is typically characterised by electric guitars and drums.

Different musical instruments also have different requirements and lead to the development of different skills. For example, playing the piano improves hand dexterity as both hands are actively engaged in playing different parts while playing the violin improves precision in motor skills as violinists need to be focused and alert while playing to ensure that the pitching is correct as they don't have any guide for their notes. However, playing any type of music leads to development of emotional understanding of music. Musicians often explore different genres through the same instrument and must be in a focused/particular state of mind while playing a particular genre to convey the emotion and meaning. Thus, music often is cathartic as musicians feel and hence release hormones to evoke emotions in their music. This is supported by a study by Sharman & Dingle (2015) to investigate whether listening to extreme music causes anger or helps extreme music listeners process and regulate their anger. Participants were randomly assigned to either a music listening or control condition. They brought their own personal music devices to the study. Heart rate was measured using ECG electrodes attached to the participants' torso and chest. Anger was induced using a structured 16-minute interview where participants described angering events. The findings revealed that extreme music listening helped angry participants process their anger rather than exacerbating it and increased positive emotions like feeling active and inspired. It also helped maintain physiological arousal associated with anger, rather than increasing it further, supporting the cathartic qualities of music.

There are several theories of emotion. According to the James Lange theory of emotion, emotions arise from physiological arousal (James 1884) while the Cannon-Bard theory of emotion believes that physiological arousal and emotions are simultaneously experienced, independently from each other, thus suggesting parallel systems for each (Cannon 1927). The Schachter-Singer two-factor theory of emotion is one such theory of emotion takes both cognitive and physiological factors into account, implying that cognitive appraisal gives context to the physiological arousal and thus labels the emotion by not only taking physiological arousal into account but also the cognitive state of human beings (Schachter and Singer 1962).

Schachter believed that physiological arousal for many emotions like nervousness and fear were similar like increased heartbeat and thus the brain differentiates these emotions using the context in which the human is present. This indicates that the context or setting that the human is present in plays a big role in labelling and thus realising emotions. (Schachter and Singer 1962). Thus, music can induce emotions in humans as music acts as context and becomes part of the environment surrounding the human. Devkota (2019) in a study stated that psychoacoustic properties of music like valence and arousal influence the intensity to which music induces emotion, also known as musical absorption. Thus, these properties act as context which are observed during cognitive appraisal and help in the labelling of emotions.

However, a study by G. Kreutz et al (2008) found that musical preference and absorption traits influence the ability of music to induce emotions in adult listeners. Participants were presented with 25 excerpts of classical music representing different emotions like happiness,

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sadness, fear, anger, peace. They were told to rate the intensity of the emotions they felt, as well as the pleasantness and arousal induced by each excerpt. The findings affirmed that instrumental music was effective at inducing basic emotions in adult listeners. Participants' preference for classical music influenced the specificity and intensity of the emotions they experienced. Participants' absorption trait was associated with higher arousal ratings, but not with the specificity or intensity of emotions.

Moreover, the emotions felt by musicians while playing instruments also affects their musical performance. For instance, a 2014 research article by Anemone G. W. Van Zijl found that the experienced emotions of performers influence the auditory characteristics of their musical performances. The aim was to investigate the effect of performers' experienced emotions on the auditory characteristics of their performances. Performers were asked to play a music phrase under 3 different conditions: Focusing on technical aspects of playing, giving an expressive performance, focusing on their experienced emotions and after a sadness-inducing mood induction. (Van Zijl 2014)

The researchers analysed the performances and interview data. The findings indicated that focusing on technical aspects led to technically appropriate performances, focusing on expressivity led to more extraverted and externally projected performances and focusing on experienced emotions led to more introverted and personal performances. (Van Zijl 2014)

Different instrumentalists have more emotional awareness for the emotions associated with their music. For example, bass guitarists are more familiar with emotions like rage and aggression since they induce those emotions into their playing while violinists are more aware of sadness since it is one of the stronger emotions associated with their music. Keeping these different criteria in mind for the performance of musicians, an interview schedule for violinists and guitarists was created based on the following factors: emotional state of the musician during the interview, experience with music, relation between mood and performance, emotions during different times surrounding the interview, their relationship with the audience, the event or location where they are performing.

Currently, there are not enough studies that investigate the impact of a musician's emotional state on their musical performance. The current study focuses on the conflict between mindset and emotions. During musical performances, the music induces emotions in the musicians, but a musician's emotions also influence the style of playing to a certain degree, thus contributing to the "feel" of the music. Furthermore, while playing the instrument, a musician must be in a focused mindset while still simultaneously balancing the induced emotions with their own. Thus, the aim of this study is to explore the emotions and mindset of guitarists and violinists while performing.

METHODOLOGY

Research Aim

The aim of this study is to explore the understanding of emotions and mindset of guitarists and violinists while performing. Musicians often experience emotions induced by themselves or the music, which in turn influences their playing style. Thus, it is a phenomenological study which focuses on investigating this universal experience of musicians through interviews with subjects and examining these views.

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Tools Used

An interview schedule to follow a semi-structured pattern was created based on the following factors that influence playing:

- **The emotional state of the musician during the interview:** The first 2 questions focused on the emotional state of the musician during the interview. Participants were asked their emotional state to ensure that their answers weren't influenced strongly by their current emotions. The second question investigated the disposition of musicians in general. Participants were often provided with prompting examples like "Slow to warm up, Calm and relaxed, Anxious in general, Positive and cheerful" to help them understand the question better. This was to ensure that their emotional state and mindset were not affected by their disposition. Examples of questions: How do you feel right now?; What is your disposition in general?
- **Experience with music:** The study examined violinists and guitarists, who had varying lengths of experience with music. The number of years they had played that particular instrument, the amount of training they received and whether they performed in a group setting like an orchestra or band all can influence their feelings about performance in general and were thus examined. Examples of questions: For how many years have you been playing this instrument?; Did you take any professional training for the same?
- **Relation between mood and performance:** The participants were asked questions about mood and performance at different times in a performance to examine participants' awareness about this phenomenon, how it influences their playing style, whether it is intentional or not and whether they have differing emotions during different parts of their performance. The interview schedule differentiated between induced and performatory emotions (emotions put up for a show or to perform in front of an audience) to understand if musicians would like to change this aspect of performing since all participants performed using words like "feel" and "show". Examples of questions: "Do you think there is a relation between mood and emotions and the performance of a musician?"; "Does the type of piece you are performing affect which kind of emotion you want to feel? For example, a love ballad or a rock song."
- **Relationship with the audience:** Musicians were asked questions about how the presence of the audience influences their performance and whether their emotions are influenced by them. This was to examine if different types of audiences influenced different emotions (performatory and induced/feeling) in the musicians. Examples of questions: "Is there an effect of the presence of the audience on your emotion while performing?"; "Do you think there is an influence of the audience's reactions on one's performance?"
- **The event or location where they are performing:** Musicians were asked whether the event influenced their performance as musicians might feel differently about an intimate event as compared to a larger event. Moreover, they might associate different feelings with each and might want to induce different emotions for each. Different events also might have different genres for each, and this can influence the emotions they want to induce. Musicians might associate different locations with

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different types of audiences and genres, and this can also influence their associated and induced emotions.

Examples of questions: “Is there an influence of the event or location where one is performing affects which kind of emotion you want to feel?”; “Does the event or location where you are performing affect which kind of emotion you want to show?”

Ethical Considerations

The participants were all informed of the aim of the investigation and how their data would be used. Further they were informed that this was for a research paper and that they would be interviewed. Consent was taken from all participants before starting the interviews. They were also allowed to withdraw at any point during the process if they wished to do so and their data would be returned to them. Confidentiality was maintained as no names were shared and no personal identifying factors were released. Post publishing, debriefing was followed as the research paper was shared with all participants to make them understand how their data was used and what were the results of the paper.

Sample

A sample of 6 violinists and 6 guitarists (2 females and 4 males each), from an urban socio-economic background, all of whom have played in Mumbai, India were interviewed. They all had a minimum of 4 years of experience learning the instrument and had performed in a group setting like an orchestra or a band. Snowball sampling was employed as participants were made aware through word of mouth.

Data Collection Procedure

Data was collected through semi structured interviews. An interview schedule was created based on factors that were determined with consultation with a performer (dancer). Semi-structured interviews were chosen as they would give comparable data and still allow room for exploration as it is a phenomenological study. 4 violin interviews were conducted in person, while the rest of the violin interviews and all the guitar interviews were conducted over WhatsApp calls with screen recording or normal calls with call recording. For one participant, due to a bad network, half the interview was collected through voice message responses and the other half was recorded on call.

Data Analysis

The data collected through the interviews in the form of audios and videos was first transcribed using otter.ai. Data was manually checked for grammar and other discrepancies to ensure that the transcription and audio matched perfectly. Then the data was put on google documents where data was manually highlighted for any important information. This also aided in data familiarisation.

Post data familiarisation, initial codes were created as important information in the transcription of interviews were highlighted on a google document. Then, the codes were grouped on a google sheet into common themes until 4 major themes with several sub themes were identified for violinists.

Then, the themes were defined, and subthemes were allocated to each of the themes based on fit. Post that, evidence was collected and the data table to be presented was formulated with both violinists and guitarists responses.

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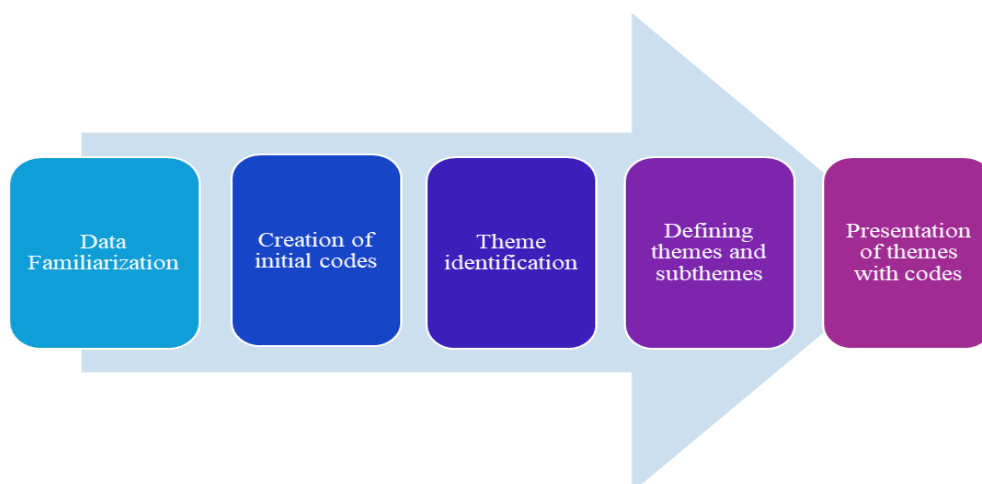
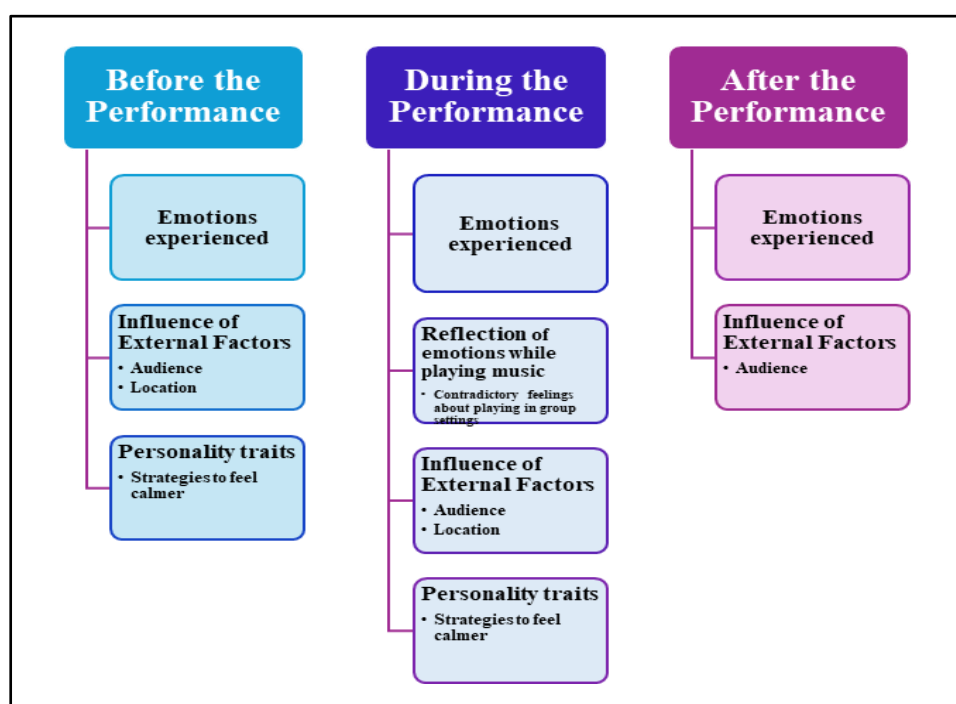


Figure 1: Flowchart depicting data analysis process

RESULTS AND DISCUSSION

The data analysis revealed 4 themes that could be extracted from the data: Reflection of emotions while playing music, Influence of external factors, Personality traits of musicians and Emotions experienced. These different themes and factors were prevalent at different times during the performance. Thus, all identified themes and experiences mentioned by musicians were divided into 3 broad categories:

1. Before the performance
2. During the performance
3. After the performance.



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Figure 2: Discussion chart depicting themes and subthemes.

| Themes | Guitarists | Violinists |
|--|---|---|
| <p>Reflection of emotions while playing music <i>Contradictory feelings</i></p> | <p><i>“If I play a sad song, I will tend to feel like I should tend to feel a little bit of sadness in order to deliver the kind of emotion, you know, for the audience, at least, so that they can feel the particular emotion.”</i></p> <p>Contradictory feelings</p> <p><i>“So, my band was actually going through a very rough patch and one of the members actually left the band after the show 2 months back. So, what happened was that we were having a lot of internal issues, so we try to leave our issues off the stage so we can be professional and do what we have to do and on stage just be present there.”</i></p> | <p><i>“If you don't have emotions, there is no violin. And if there is no violin, there is no music. And eventually you cannot express out your emotions accordingly.”</i></p> <p>Contradictory feelings</p> <p><i>“Emotions should not let your performance impact any way. But I should say there should be some sort of emotion to your music.”</i></p> |
| <p>Influence of External Factors <i>Influence of Audience</i> <i>Influence of Location</i></p> | <p>Influence of audience</p> <p><i>“When I play with new people, I just try to, like, play my best so that, because I feel like they are gonna judge me like the other musicians.”</i></p> <p>Influence of Location</p> <p><i>“More important is the venue's acoustics and sound. If I'm playing in a place where the sound is not good, and I'm not able to hear myself, there are more chances of messing up.”</i></p> | <p>Influence of audience</p> <p><i>“People who know music come to listen then you need to be more cautious to your approach to playing.”</i></p> <p>Influence of Location</p> <p><i>If you're performing at a funeral, it's a different emotion and if you're performing for some wedding event, or some happy event, it's a different mood altogether.</i></p> |

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| | | |
|--|--|---|
| <p>Personality traits of participants <i>Strategies to feel calmer</i></p> | <p><i>“Just by practising and performing more, it happens over time. It's not like a method or a process or a formula just to do it. It happens over a period of time.”</i></p> <p>Strategies to feel calmer</p> <p><i>“I think deep breathing is the only thing and sometimes the saying good luck with the bandmates is I mean, enough for me to get in the space of performance”</i></p> | <p><i>Yeah, I, for me, actually, I generally get nervous. More like nervousness takes over before performing a piece.</i></p> <p>Strategies to feel calmer</p> <p><i>“Just say a word of prayer.”</i></p> <p><i>“Just make sure my hands aren't cold. That's important.”</i></p> |
| <p>4. Emotions felt <i>Before a performance</i> <i>During a performance</i> <i>After a performance</i></p> | <p>Before a performance</p> <p><i>“And usually, when the performance starts, when it starts, I'm a little bit, like jittery and all and like scared, like anxious. But after the first song, yeah, I become okay after the first song, okay.”</i></p> <p>During a performance</p> <p><i>“It depends on the song, and then accordingly, I try to feel according to whatever the song is, like the genre, or whatever.”</i></p> <p>After a performance</p> <p><i>“I feel drained after a huge set. But it's just because it takes a lot of energy from the body to perform in front of a crowd. That's not associated with any kind of feeling.”</i></p> | <p>Before a performance</p> <p><i>“I go in with a clear mind, I know I'm way less likely to make any mistakes. So, at the very least, I would like whatever I have practised will actually be able to.”</i></p> <p>During a performance</p> <p><i>“Even if you're a bit dull, I feel once you, once you start playing or something, once you've come closer with music, it actually changes your entire perspective.”</i></p> <p>After a performance</p> <p><i>“If the performance is good, I am very happy. If the performance is not so good, well, I feel like I should have done it much better.”</i></p> |

Table 1: Results table depicting themes with evidence from the interviews

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Before a music performance

Several external factors like audience and location influence a musician's emotional states before a performance. Musicians associated locations like a concert hall or a house to different types of audiences as they expect concert halls to be more formal and houses to be more casual and intimate. This could make them nervous and increase their stress levels due to fear of judgement which influences the performance. This is supported by the findings of Desman (2017). A guitarist said, *“When I play in front of new people, I just try to play my best because I feel like they are gonna judge me like the other musicians”*, which indicated that musicians may feel more nervous because they are in the presence of other musicians and wish to display professionalism. Additionally, violinists and guitarists mentioned how dry and resonant halls influence playing styles, because location dictates how well they can hear themselves and their group members. However, some guitarists mentioned that it doesn't make a difference because they like to give their best performance to every audience.

In general, musicians desired to remain calm before a performance. They mentioned how they are nervous so they would like to feel calmer. Violinists didn't have a pre-performance ritual or an action they did to feel calm besides practising or warming up. One violinist mentioned *“I go in with a clear mind, I know I'm way less likely to make any mistakes. So, at the very least, I would like whatever I have practised will actually be able to.”* Their responses suggest that musicians don't want any pre-performance emotions to interfere with their focus prior to the performance.

Musicians' personality traits could highly influence their emotional states before the performance. Some participants expressed their tendency to overthink, causing them to remain anxious while others conveyed a calmer disposition. These traits could influence their general emotions. For instance, musicians who were more anxious in general expressed their desire to feel calmer but don't currently experience it. This could possibly affect their mental state more as they are prone to anxious thoughts and overthinking which may affect the performance to a greater degree than someone with a calmer disposition. Moreover, personality traits can also influence the methods musicians utilise to balance the consequent emotional states in order to facilitate their performance. For instance, a guitarist had a pre-check list where they would check all their equipment and materials, which on further questioning was to help them feel calmer. One violinist expressed that they pray before performing to keep calmer. Other guitarists expressed how messing around with their bandmates to keep a lighter mood and focusing on deep breathing helped them remain calm because their breathing influenced stress levels. Thus, their different personality traits influence what strategies they utilise to maintain a calm emotional state pre-performance.

During a Musical Performance

Musicians' emotional states are highly influenced by induced emotions during the performance. A musician stated that *“even if you're a bit dull, but I feel once you start playing you've come closer with music, it actually changes your entire perspective.”* This could be because the music relaxes them and so they allow their training to take over. Additionally, a musician's susceptibility to being influenced by emotions is influenced by their willingness to let that emotion take over. For instance, *“If I play a love ballad, and, if in the moment its impact is not what I want to feel, then probably I wouldn't feel that emotion. If I wanted to feel an emotion, probably it would be.”* This is further supported by how some musicians mentioned they don't really feel anything at all while performing

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because they don't think or feel, "*you concentrate such a lot that you don't have time to really feel.*" This could be because some people have linear approaches while others have higher cognitive flexibility.

Musicians mentioned how displaying emotion on their face aids communication with the audience, but the emotion must be authentic for its induction. For instance, "*Playing a sad part you can show something on your face because people watch or happy path you can because then you show, and you feel. If you feel it, you'll show it. If you don't feel it, you know you won't show*" suggesting how musicians must be convincing in their performance in order to induce emotion in the audience. Furthermore, musicians didn't have any particular emotions they wanted to feel but rather tried to induce it based on the song, as supported by a musician's comment "*It depends on the song, and then accordingly, I try to feel according to whatever the song is, like the genre, or whatever*". It must be noted that while violinists didn't have any emotions, they didn't want to show but not feel, some guitarist mentioned that they would appreciate being able to only show anger and not feel it while performing.

Musicians also reflected on their emotions during a performance. They mentioned predicting and recognizing their emotional direction while performing particular genres of music pieces associated with evoking certain emotions. This could be because they are more familiar with the particular music and are more experienced in understanding the emotions the music will induce. For instance, a guitarist said "*I play rock and heavy metal music, so it always has that kind of adrenaline. So, while you're performing on stage, you can literally feel that coming and really feels good to me*", which suggests that musicians anticipate certain emotions even before they start feeling them due to familiarity. A theory given by Raymond Cattell (1943) refers to the concept of crystallised intelligence that is derived from prior learning and past experiences, thus developing with practice. Thus, their crystallised intelligence of music and emotions improves as they get more familiar with a particular genre of music.

Moreover, it is possible that certain musical genres induce stronger emotions as they are more communicable through music and more easily understood. For instance, specific characteristics of sad music including its low valence and low arousal allow it to be easily identified. This is supported by a participant's comment "*there are slow pieces that you have to try to bring out the slowness and the sadness in it*", where they reflected on how their playing style changes and how their emotions are affected by the induced emotions of the song. This can be interpreted that musicians identify characteristics with certain emotions and employ those characteristics in their music to induce emotion in the songs they are playing.

Additionally, a participant mentioned how they cried during a performance because the song was emotional for them. They commented "*So I feel like if you're playing a sad piece, you would tend to feel a little sad.*" Thus, the music induces emotions during performance. Musicians' emotions affect their performance while playing. A violinist said "*If I am a bit down and stressed because something bad has happened to me throughout the day, it would have a different impact on me. I tend to overthink so somewhere in my mind, whatever has happened would still remain there. To focus completely and give my best would be a bit difficult eventually.*" Their mood could be affected by the stress of their previous encounter

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and recalling the event continually can affect their ability to focus, thus influencing their performance adversely.

Musicians also displayed contradictory feelings about performing in group settings. Participants emphasized the importance of emotion while playing music because feeling emotion enables its communication to the audience during the performance. This could be influenced by their perception of solo (or accompanied) performances when they are the showstopper as they can freely express their emotions to connect with audiences. However, they then expressed that they must be cautious displaying their emotions or letting them affect their performance in any way. This could be influenced by their anxiousness to not affect others and maintain their image in a professional setting.

External factors like audience and location influence musicians' emotional states during a performance. A violinist mentioned they feel less nervous when the audience is more involved. This was further reinforced by a guitarist who mentioned "*If there's a small venue where the crowd can't form a mosh pit while playing a metal song, it just feels a little congested. But if there's a huge venue or an open-air venue, there can be a lot of people and it's easier for them to have a good time and then it becomes fun for us also to play over there.*" This suggests that the audience's mood affects the musicians' mood while playing. In this case, the audience's enjoyment induces positive feelings in the musicians and thus their performance may improve. This is supported by the theory of social facilitation by Allport (1924), which refers to how the presence of others such as an audience benefits performers with expectations of success and hinders performers with expectations of failure, as written by self-efficacy theorist Sanna. (Zajonc & Sales, 1966)

Musicians' personality traits also affect their emotional states during the performance. For instance, a guitarist said that they tend to remain more aloof and expressionless while performing, which affects their perceptions about performing in general. Their personality traits also affect their strategies to remain focused and calm while performing. One violinist recommended that musicians should focus on the music and let their practice take over while performing. This could be influenced by their perceptions about performing since they expressed that they had a calmer disposition in general and prioritised remaining calm while performing. These findings are supported by theories surrounding the stability of traits, which define traits to be persistent behaviour and signify a disposition in an identifiable manner. They assume that traits are usually stable over time throughout varied situations. (Holzman, 1999)

The different personality traits of musicians picked up through the tone of voice and the traits they described themselves with can also add and influence their answers about how they feel about particular situations regarding music, how they reflect on the emotions while performing and their strategies to feel calmer.

After the musical performance

Participants said they felt relieved and happy after the performance was over. This could be because they no longer have to worry about their performance and the stress is released. Moreover, they feel positive since musical performance has been shown to induce positive emotions in musicians. Musicians also mentioned how their emotions during the performance influenced them afterwards. For instance, a violinist said "*If the performance is good, I am very happy. If the performance is not so good, well, I feel like I should have done*

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it much better.” This suggests that musicians are very critical of their performances and often fixate on mistakes, which can negatively influence their emotions post-performance. Furthermore, a guitarist said “*I feel drained after a huge set. But it's just because it takes a lot of energy from the body to perform in front of a crowd. That's not associated with any kind of feeling.*” implying that their physical exhaustion can leave them mentally exhausted.

Additionally, participants denoted how audiences influenced their future performances as their response influenced their motivations and nervousness. For instance, a participant mentioned how when the audience doesn't respond well it discourages them because they feel like practice was a waste. This could be because musicians are looking forward to external validation after working towards their performance due to the heavy emotional investment and effort they put in. Their performance is the pinnacle of their hard work and so if they don't receive the expected responses, they feel that their work is worthless, thus negatively impacting their emotions.

CONCLUSION

The aim of this study was to explore the bidirectional relationship between emotional states and musical performance in guitarists and violinists. Findings revealed that external factors like audience and location along with personality traits highly influenced emotions, which affected musical performance. Musicians emphasised pre-performance calmness to succeed in performing, consciously induced emotions which altered their playing style and experienced induced emotions through the music during the performance, and post-performance relief and self-critical feelings based on audience reactions and perceived performance quality. These findings indicate that emotional states and emotional performance have a bidirectional relationship, influenced by a variety of factors. By working to reduce the influence of these factors through training and techniques, researchers and musicians can better emotion regulation and improve musical performance. These techniques can also be used in other performance domains to optimise the performing arts.

However, there were several limitations in this study due to its design and the tools used. It is possible there may be researcher bias as the researcher is a violinist and may be biased in data analysis based on personal experiences. Moreover, the small sample size reduces validity and reliability of the results since it is limited to the experiences of those in the sample. The study also has low generalizability as the participants were all from Mumbai and were collected using snowball sampling. Thus, they may have similar experiences, and the results can only be generalised to violinists and guitarists from Mumbai. Limited participant expression is another shortcoming of this research design. Participants may be unable to fully express or communicate their feelings, thoughts and actions since this occurred through verbal communication. This could hamper data collection as complete data is not collected. Additionally, there may be interviewer bias. Since the same researcher interviewed all the participants, they may be biased and lead people through their questions based on previous answers they've received. This could influence data to reflect biased results. Some participants may also exhibit demand characteristics by giving vague answers and agreeing to everything the interviewer asked until further questioned. This could influence given data.

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Conflict of Interest

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