DIFFERENCES IN SINGING PEDAGOGY ACROSS VOCALISTS TRAINED IN CARNATIC AND HINDUSTANI STYLES: A QUESTIONNAIRE-BASED STUDY

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CERTIFICATE

This is to certify that this dissertation entitled "**Differences in Singing Pedagogy across Vocalists trained in Carnatic and Hindustani Styles: A Questionnaire-Based Study**" is a bonafide work submitted in partial fulfilment for the degree of Master of Science (Speech-Language Pathology) by the student holding Registration Number: 17SLP019. This has been carried out under the guidance of a faculty member of this institute and has not been submitted earlier to any other University for the award of any other Diploma or Degree.

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DECLARATION

This is to certify that this dissertation entitled "**Differences in Singing Pedagogy across Vocalists trained in Carnatic and Hindustani Styles: A Questionnaire-Based Study**" is the result of my own study under the guidance of Dr K Yeshoda, Associate Professor in Speech Sciences, Department of Speech-Language Sciences, All India Institute of Speech and Hearing, Mysuru, and has not been submitted earlier to any other University for the award of any other Diploma or Degree.

Mysuru   *Registration Number: 17SLP019*

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Dedicated to Music

<u>*Acknowledgements*</u>

"The woods are lovely, dark and deep,

But I have promises to keep,

And miles to go before I sleep,

And miles to go before I sleep."

—*Robert Frost*

Apart from being my favourite stanza from my favourite poem, these lines from "Stopping by Woods on a Snowy Evening" also serve to sum up my final year marathon that has culminated in this work.

This year has indeed been lovely, with moments of depth that tempted me into stopping my horse and enjoy the view.

Unlike the owner of the horse in this poem; however, my horse had quite a few responsible people who kept a firm yet often gentle grip on the reins, making sure that I finally reached my destination despite all the times I wandered off the path.

My guide, who was not afraid to use the spurs liberally, especially during the final stretch.

My participants in both phases of my study, some of whom I came to know quite well through long conversations, some of whom remained anonymous benefactors, for giving me the jewels that were their time and opinions, and letting me into their minds to glimpse their inner artist.

Along the same lines, Pooja Sreeram, who went out of her way to give me contacts and really set the ball rolling in my data collection without my asking her. One of the most genuinely nice people I have had the pleasure of meeting. And who can forget Lopa? She invested so much of herself into my study, conducting and transcribing interviews (when she had exams, even), and was always willing to answer my random questions related to Hindustani Music. She is one the superheroes of my dissertation.

Thanuja and Keren; we have cried together, laughed together, griped together, worked together, and have invested the whole of ourselves in all of each other's efforts. They are the other horses who marked my way and made sure I was always in stride with them.

Keren deserves special mention, we have so much in common (6 years and counting in each other's lives), yet somehow remain so distinct in our outlook. We have held innumerable debates, debating completely opposite viewpoints, in topics ranging from our field, to politics, to religion. We continue to agree to disagree in these. She still remains a source of support, a familiar face.

My partners-in-postings over the last two years (or should I say partners-in-crime?), a few of whom merit mention by name. Farseena, who has kept pace with me stride for stride, even when we fell behind or stumbled in the race and needed to shift to a canter (or even a gallop, in some instances) to keep up with the other horses. Shalini and Krishnendu, both thoroughbreds of the highest pedigree, who were always at least a few steps ahead on the race track, yet just within my sightline so that I could scramble to catch up at just the right time. For being my fellow first-floor neighbours in the therapy clinic, and being my therapists-in-crime—both for my cases as well as their own cases! I could go on and on about how we all know each other's' cases like the back of our hands, but I shall refrain. For knowing that even horses can tire and dragging me out to break on time, especially on the days I immersed myself so completely in my clients that I forgot the rest of the world existed! For their therapy materials, which got me through quite a few sessions that would have stumped me otherwise. For their brains (quite significant in size), which also woke my brain from inertia to really invest in my therapy techniques, particularly the evidence-based variety. And finally, for just being there.

My entire class, which for some reason gave itself the moniker of 'Beautiful Monsters'. In retrospect, I suppose it is quite appropriate. We most definitely are monsters (I am sure many individuals in this institution will whole-heartedly agree), and as for calling ourselves beautiful...well, if we don't, who will?

This institution, which has given me valuable experiences, clinic-wise, class-wise, research-wise, and life skills-wise. All of the faculty and staff whom I have had interactions with have made an impact on me, and have nudged their heels into my side just enough to keep me on the right path.

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Kriti, who knew when to tell me to stop working, who rationalised all of my notions of reinforcing (and frequently bribing) myself to work right along with me, who made me walk in the mornings at least for a while, who stuck by me when our lives in this institution were otherwise tangential.

My music teacher, Ms Vidya, who was so encouraging when I mentioned the first rough idea of my study that my enthusiasm was truly kindled. She also gave me tremendous input in terms of information, participant contacts, and pep talks, particularly when the finish line was just coming in sight. Also she kept my mind open, beyond the endless spreadsheets and graphs that threatened to grey my vision, to the big picture, music.

My family, who were behind the scenes yet very much present throughout the journey, who kept up with the trials and tribulations I faced in real-time, whether it was hunting for participants, or the long, arduous, process of transcription, or the seemingly unending process of editing, editing, and more editing, and also reminded me that the real world existed, with suitcases to pack, tickets to book, and rooms to rent.

The baby of my heart in specific (she knows who she is) who put everything into perspective with her innocent worries about school and friends and also took my mind off of all my worries during our conversations, even if they were very infrequent. I seem to never let her grow up in my mind, yet she continues to shoot up each time I see her, both in terms of height as well as in terms of personality. She has rapidly crossed the bridge from child to friend in this year, and with her I never had to think about what I said before I said it.

I thank everyone from the bottom of my heart for making me who I am and more importantly, making this work possible. I have crossed the woods and reached the end of this journey, and now look forward to my next journey and the next picturesque snowfall in a deep wood that I can stop and enjoy—for a while.

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CHAPTER I

INTRODUCTION

Classical music has been a long-cherished part of Indian culture and tradition. Different regions in India have come forth with their own styles and approach to classical, structured music. Grossly, the classical music of India can be classified under a dichotomy consisting of the Hindustani style, which is prominent in northern regions of the country, and the Carnatic style, its south Indian counterpart. A tentative history of this art form has been described by (Bhat, 2009). The earliest form of vocal music in India may have evolved from the primitive vocalisations of humans in pre-historic civilisation, later giving way to folk music. Folk music that was easy for people to sing in as groups may have been further developed into chants used in religious practices. One of the most unique characteristics of Indian Classical Music lies in its antiquity. It is widely believed that Indian Classical Music was given a formal structure as early as 3000-5000 B.C. Termed the Vedic period, the four most sacred texts in Hindu religious tradition, the *Rig Veda, Atharva Veda, Yajur Veda,* and *Sama Veda,* are said to have been authored in this time period. Among the four, the *Sama Veda* contains the bases for all musical treatises and scriptures.

As stated by Bhat (2009), the word *Sama* literally refers to 'listening' in Sanskrit, and the *Sama Veda* was frequently sung as a group during this era. There would be one leader who would teach the rest of the singers exactly how to recite the *Veda* with great precision and this style would be carried forth by them and memorised completely. Thus the leader would have the status of a preceptor or 'Guru' and the others were cast into the role of disciples. This early manifestation of oral pedagogy is a tradition that

survived the centuries to be continued in the teaching and learning of Indian Classical Music today.

According to Bhat (2009), the concept of Indian music underwent a bifurcation after the thirteenth century. At this time, the West Asian people invaded the north of the Indian sub-continent, bringing the Islamic faith and culture with them. During Muslim rule, music was highly patronised by royalty and thus it flourished in the northern part of India. The Western Asian form of music known as 'maqam' also assimilated itself into the music of these parts, giving birth to a primarily melodic style of music called the Hindustani style. The southern regions of the Indian subcontinent were hemmed in by the mountain ranges Vindhya and Satpuda, and thus the music of the south remained more similar to the Vedic origins, as there was little to no influence of the Persian culture that existed in the north. As a result, while the earlier, more unified form of music had existed primarily for devotional purposes and the southern form carried forth these same principles in their compositions, the Hindustani style evolved from devotional music to songs in praise of kings, nature, and even non-religious poetry. However, because of the unified origins, parallels exist between the forms even today.

Vocal artists of both these styles undergo long periods of training and must master intricacies of melody (*Raga*), rhythm (*Laya*), and pitch maintenance (*Shruthi*), in order to be recognised as eminent performers in their field. Traditionally, classical music training took place in a *gurukulavasa* form, in which the disciple lived with their teacher (*guru*) for many years and picked up the nuances of the art by virtue of the immersive

exposure to their guru's singing with very little formal or structured lessons or examinations (Bhat, 2009).

This highly personalised form of dissemination of this art may possibly result in a limited distribution of knowledge regarding singing pedagogy and voice culture in Indian Classical Music within those involved closely in the field. This is another aspect in which Indian music appears to differ from Western Music, as inferred from a systematic review of scholarly literature in Western Classical Singing pedagogy conducted by (Crocco, Madill, & McCabe, 2017). The authors noted that teachers of Western Classical music generally follows systematically scripted teaching methods delineated in books and singing manuals. Moreover, musical education takes place more often than not at conservatoriums, music academies, departments or faculties in universities, or at singing studios.

Need for the study

Voice training is the key element in the shaping of a singing performer's voice. Different methods of training may affect vocal health, quality, and flexibility in different ways. Speech-language pathologists in India are currently not a part of the voice training team for professional classical singers and are thus not fully informed about the methods of pedagogy and practice regimens undertaken by Hindustani and Carnatic vocalists. Preliminary understanding in this subject is required to fill this lacuna.

CHAPTER II

REVIEW OF LITERATURE

Durga in 2007 defined singing as "the musical expression of feeling through the medium of vocal organs and the organs of speech." Although the organs used for singing are much the same as those used in speech, what sets a singer's vocal apparatus apart from that of the common layperson's is the technique of using these same organs. Singers apply more control over their breath flow in order to sustain long musical phrases and add dynamics to the phrases being sung. In the production of musical note(s) they have more periodicity in the vocal signal. They also utilise more of the frequency range capable of being produced by the laryngeal system than speakers—up to two and a half octaves as opposed to only one and a half octaves. Finally, the author put forth the view that the singers adhere to specific scales in singing, a concept that is absent in oration.

Among both Western and Indian singers, the classical style is known to be highly challenging; however, Western and Indian Classical music differ in many respects. Western music is regarded to be polyphonic, which means that in an orchestra comprising of vocalists and instrumentalists, the different singers and the instruments would simultaneously produce tunes which are harmonically related to each other, thus creating a multi-layered piece for the listener. In contrast, when it comes to Indian Classical music in both its forms, the singer would be the focus, and would produce a single melodic piece in which the beauty is presented through the relationship between adjacent notes (homophony). The instrumentalists, if present, would play the same tune but act as supports and not as complements to the vocalists (Palsule, 2015). A study by

(Agarwal, Karnick, & Raj, 1999) sought to further understanding on the differences between structural aspects in Indian and Western Musical forms using the application of Gaussian Mixture Models (GMM) based Hidden Markov Models to spectrographic representations of different types of music. It was found that the GMM based models were more easily applied to Indian music as they followed a single melodic sequence rather than different layers of harmonies.

With so much onus on the singer in an Indian Classical Music recital, the importance of voice culture for Indian Classical vocalists cannot be understated. Yet there is a further dichotomy within the Indian Classical Music genre. Among the southern regions of India, including the modern states of Karnataka, Andhra Pradesh and Telangana, Kerala, and Tamil Nadu, as well as in select Tamil-speaking regions of Sri Lanka, classical music is manifested as 'Karnatak' or 'Carnatic' music. In the northern states of India and Pakistan, Nepal, Bhutan, and Bangladesh, the 'Hindustani' musical tradition prevails (Bhat, 2009).

Similarities between these styles include a common adherence to the constraints of *Raga, Laya,* and *Shruthi. Raga* may be explained simply as a melodic concept (Rangayyan, 2018), *Laya* refers to the beat cycles which provide rhythm to singing, and *Shruthi* is the concept of a relative 'base' pitch which provided the fixed notes at the low, mid, and high ends of a given octave the singer chooses for their singing—as opposed to the idea of absolute pitch followed by Western Musicians.

Differences between the two styles in terms of voice culture include the speed and qualitative aspects of swinging between two notes (*gamak*), in that Hindustani music has these oscillations at a slower rate and covering a larger pitch distance than the Carnatic vocal style (Bhat, 2009), and also that Carnatic vocalists tend to emphasise use of lower pitch and more open-throated singing (Arunachalam, Boominathan, & Mahalingam, 2014). A discussion about the differences between the two musical forms was given by (Upadhyay, 2010), who stated that Hindustani music placed greater emphasis on improvisation and creativity, while Carnatic music gave importance to structured compositions. The author also noted that earlier forms of compositions in Hindustani music such as the *dhrupad* were more fixed in nature and that the flexibility and creativity seen in the style were evolutionary in nature.

Practice habits may also differ among the styles. A questionnaire administered on 50 Carnatic and 50 Hindustani vocalists (Supraja & Savithri, 2007) which included questions about their practice habits indicated that exercises meant to increase frequency range, as well as warm-up and to a lesser extent warm-down exercises were quite commonly practiced by Carnatic vocalists, with positive respondents totalling 92 percent, 64 percent, and 18 percent respectively. Among Hindustani vocalists, 90 percent of the respondents practised exercises to improve breath support, 84 percent focussed on vibrato production, and 76 percent respondents reported practice of other physical exercises such as jogging or yoga.

The study also surveyed participants' knowledge regarding vocal anatomy and physiology, vocal exercises carried out routinely by the participants and their rationales,

and their vocal and non-vocal habits. Both forced-choice as well as open-ended questions were included. Results showed that among both styles, very few people carried out warm-down exercises at the end of their singing sessions (less than 30 percent of both Carnatic and Hindustani groups). In terms of awareness of vocal hygiene and speech/voice therapy, Carnatic singers were seen to have a higher awareness. Less than 50 percent of the singers of both styles professed to have 'good' knowledge of vocal hygiene. Since the pedagogy of Indian Classical Music traditionally involves little to no formal study material and puts more emphasis of gradual dispersion of experiential knowledge from teacher to student, it becomes prudent to analyse the methods of vocal pedagogy in these styles in order to draw more detailed inferences on the knowledge about voice cultivation and care that is imparted.

Some research has been done in the area of training and specific voice cultures used in singing in Indian Classical music; however they have been primarily focussed on the Hindustani style (Meddegoda, 2015; Radhakrishnan, Scherer, & Bandyopadhyay, 2011; Rohrmeier & Widdess, 2017; Schippers, 2007).

In terms of training, a study was done by (Schippers, 2007) to obtain perspectives of different facets of the role of the teacher or 'Guru' in Hindustani musical pedagogy. This was done by an interview with an eminent teacher along with an observation of his class. The paper put forth the following points for consideration. Firstly, the transmission process observed placed great importance on aural learning, with written notation discouraged. The training was both analytic and holistic—in some instances the teacher provided a clear explanation of the technique, while in other the students

were meant to learn implicitly. There was great emphasis on practice discipline, fixed compositions, and self-reflection, but less importance given to the actual structure of practice, historical background of the music, or explicit explanations of technique of technique. The teacher was also observed to teach very strictly according to the kinds of music present in the given style, with no outside influence. This study provides a general idea of the pedagogical methods and practices used among music teachers of the Hindustani style.

A study on training methods specifically in regard to incidental learning in Hindustani vocal music was carried out by Rohrmeier and Widdess in 2017. In the study, two groups of Western participants who were both unfamiliar with Indian music were exposed to instrumental *alaaps* (improvised non-rhythmic melodic phrases) in two different raags. Each alaap contained five different musical features, some of which were classified as 'unambiguous' or clearly distinct features which differed across the raags, and others which were classified as 'ambiguous'. During learning phase, each group was asked to listen to their respective raag and identify phrase boundaries in the instrumental alaaps. In the testing phase, all the participants were presented with stimuli that included phrases from both raags, and they were required to judge each stimulus as 'familiar' or 'unfamiliar' based on a forced choice paradigm. Findings revealed that in both raags, participants were able to learn some of the unambiguous features; however, participants performed at chance level when it came to distinguishing the ambiguous features of the raags. The authors concluded that there was a significant amount of rapid incidental learning that took place in this aspect of Hindustani musical training.

Meddegoda (2015) delineated the different kinds of gamaks or ornamentations involved in different types of genres in Hindustani music, specific desirable vocal characteristics in rendering each of these genres, and whether there was any gender bias in the singing of different kinds of genres. The paper concluded that in earlier centuries, Hindustani compositions were more rigid (primarily *dhrupad* singing) and the field was more male-dominated, with emphasis on depth and strength of voice as desirable voice characteristics; however, with the advent of a new Hindustani genre, *khyal* singing, the focus for Hindustani singers shifted to cultivating melodious, versatile voices, and subsequently, more women began performing in the field.

An analysis of the laryngeal dynamics of *taans* (fast-paced combinations of musical notes) in terms of acoustic characteristics (using *Praat* software) and laryngeal muscle activity (using Electroglottograph) was carried out by (Radhakrishnan et al., 2011), in which the authors noted that *taans* were quick oscillations of frequency that were voluntarily controlled unlike the western 'vibrato'. These vocal techniques may therefore require higher degree of control over laryngeal muscles.

In terms of technical musical knowledge, such as knowledge of octaves, notes, and frequencies, a recent study used a questionnaire to evaluate the knowledge of 60 Carnatic singers from Kerala, Tamil Nadu, and Karnataka and found that they appeared to understand the equivalence of an 'octave' with the Carnatic Music concept of 'Sthayi' (100% of respondents), and similarly the analogous relationship of a 'note' in Western Music with 'Swara' in Indian Classical Music (95% of respondents). However, 98.3% of respondents reported to be unaware of different absolute frequencies

pertaining to different notes, apart from one particular singer who played violin as well (Revathi & Yeshoda, 2018). This indicates a reasonable level of understanding of the acoustics of music, but does not give insight into singers' knowledge of their own voices and awareness of voice problems.

Boominathan, Rajendran, Nagarajan, and Gnanasekar (2008) used a questionnaire to study vocal habits and knowledge among different professional voice users. Their findings indicated that 70 percent of Carnatic classical singers from a group of 100 surveyed participants reported that they waited over one week after the first signs of noticing voice problems to approach a voice health professional about any vocal issues, or did not approach anyone at all. Such a finding could possibly be related to the highly personal nature of the teacher-student relationship in Indian classical music pedagogy, as students' most highly solicited source of information about vocal health would be their teachers, whose source, in turn, would be their own teachers, and so on, leaving little motivation to consult an outsider.

These findings contradict those of an international survey among amateur and professional voice users (Weekly, Carroll, Korovin, & Fleming, 2018). The survey included 31 multipart questions regarding demographics, vocal health, history of dysphonia, vocal pathologies, and the demand for their voice use. The researchers used websites such as the National Association of Teachers of Singing, American Choral Directors Association, Music Teachers National Association, National Association for Music Education, alumni of opera programs, and Facebook pages of voice users to recruit participants. A total of 1195 respondents were thus recruited from 25 different

countries. Eighty percent of these participants were singers. Only 24 percent of respondents did not seek outside assistance for a voice problem. Moreover, the authors said that "…an overwhelming 81% of respondents indicated they were at least somewhat familiar with voice medicine."

Another Western study has also shown similar positive findings, in which among 72 professional singers assessed for knowledge about various aspects of voice health including vocal hygiene, voice anatomy and physiology, and role of a speech-language pathologist (SLP) in voice, the mean percentage accuracies were 74 percent, 51 percent, and 61 percent respectively (Braun-Janzen & Zeine, 2009). The study also asked similar questions to 55 amateur singers and they scored a mean of 68 percent accuracy in questions related to vocal hygiene and 55 percent accuracy in the questions related to the role of an SLP in voice health. This indicates an above-chance level of knowledge on all these areas essential to voice care among both professionals and amateurs in this population.

Classical vocal music training in the West thus appears to impart some information on voice to aspiring singers. A treatise on singing published as early as the nineteenth century included information on anatomy and physiology of vocal and breathing apparatus, including the lungs, the glottis, and the oral cavity. It also illustrated the ideal form of breathing for singing involving the diaphragm and the correct posture to be maintained to sing (Garcia, 1874).

More recently, as stated in (Mendes, Rothman, Sapienza, & Brown, 2003), "Western classical vocal training involves the following: (1) developing proper posture; (2) strengthening the abdominal muscles with breathing exercises; (3) vocal function exercises; and (4) articulatory precision exercises." Also, the systematic review published by (Crocco et al., 2017) indicated that students of Western classical music learn vocal technique, musicianship, performance and artistry, vocal health, language, skills for voice management, as well as information about voice health during their training.

So far, there is a paucity of information on classical vocal music pedagogy in the Indian context in terms of the approach to voice culture and importance accorded to teaching the physiological aspects of the human voice, as well as the vocal practice regimen followed by performers in both Hindustani and Carnatic styles. Hence, the present study was planned to garner views and inputs regarding these aspects of vocal music and pedagogy from trained singers of both styles of Indian Classical Music.

Aim

The aim of the present study was to develop a questionnaire to enhance understanding on the differences in vocal music pedagogy between singers trained in Carnatic and Hindustani styles of music, and then administer it on singers of both styles.

Objectives

The objectives of the study were as follows:

1. To develop a questionnaire which can be used to obtain information on vocal music pedagogy as well as practice and performance aspects in Carnatic and Hindustani singers and validate the same.

2. To administer the developed questionnaire on singers of both styles in order to check for differences in the vocal music pedagogy across the two styles of music.

3. To check for gender differences, if any, between and across the two styles of music in the practice of vocal music pedagogy.

CHAPTER III

METHOD

The study was carried out in two phases.

Phase I: Development of the questionnaire

Participants

A total of 10 Carnatic vocalists (6 Female, 4 Male) and 8 Hindustani vocalists (4 Female, 4 Male) participated in Phase I. The details are shown in Tables 1-3.

Inclusionary criteria for Phase I :

- Aged 30 years or older.

- Male or female trained classical vocalists of either style.

- Natives or permanent residents of the northern region of India in case of Hindustani vocalist participants and natives or permanent residents of the southern region of India in case of Carnatic vocalist participants.

- Undergone a minimum of 15 years of training under a guru.

- No complaint of vocal health issues during time of participation.

Participant Demographics

Participants were recruited through personal contacts, requests on social media, web search for music academies, and visiting music schools in person. Interviews were carried out either through phone or face-to-face. Details of the recruited participants are provided in Tables 1-2. Participants were informed beforehand regarding the purpose

of the study, the nature of questions and the amount of time required. They were also informed about the audio recording and interview was only carried forward after oral consent by the participant. Depending on the language proficiency of the participant, interview was conducted either in English, Tamil, Hindi, Kannada, or in one case Assamese (in which case interview was administered, transcribed, and translated by a student of speech-language pathology who was a native speaker of Assamese after the questions were explained by the investigator and under the supervision of the investigator).

Table 1: Demographic details and experience for Phase I: Carnatic participants

Participant ID	Age (years) (Mean=42.7/ SD=8.79)	Sex	Location	Singing experience (years) (Mean=25.9/ SD=9.68)
1C1	38	Male	Mysore	30
1C2	30	Male	Trivandrum	23
1C3	52	Female	Chennai	48
1C4	39	Female	Chennai	33
1C5	49	Female	Chennai	17
1C6	53	Female	Chennai	30
1C7	52	Male	Bangalore	17
1C8	30	Female	Chennai	23
1C9	39	Male	Chennai	20
1C10	45	Female	Chennai	18

Table 2: Demographic details and experience for Phase I: Hindustani participants

Participant ID	Age (years) (Mean=37.1/ SD=3.83)	Sex	Location	Singing experience (years) (Mean=21.3/ SD=4.03)
1H1	39	Female	Assam	20
1H2	36	Male	Pune	22
1H3	43	Female	Nashik	15
1H4	38	Female	UK (Native to Uttar Pradesh)	18
1H5	32	Male	Nashik	22
1H6	33	Male	Bangalore	28
1H7	41	Female	Bangalore	25
1H8	35	Female	Nashik	20

Procedure

Participants were interviewed by the researcher either in person or over phone, in which the researcher asked open-ended questions to the participant under five domains: vocal training, practice, performance, vocal habits, and ideal voice characteristics in their style of singing (Appendix I). The interviews were audio-recorded after obtaining informed consent from the participants.

The interviews were transcribed verbatim and the transcribed responses were recorded on a Microsoft Excel Spreadsheet in order to compare and contrast responses across participants for each style of singing. Responses were analysed for commonalities and a final questionnaire was constructed and uploaded on Google Forms.

The developed questionnaire began with a disclosure of information pertinent to the study and a vouching of informed consent by the participant. It further contained 48 multiple-choice (single answer), multiple choice (multiple answer), as well as short descriptive answer type questions under 7 sections: Demographic data, General training, Style-specific training (Carnatic/Hindustani), Style-specific practice (Carnatic/Hindustani), Vocal Hygiene Habits and Issues, Performance, and Ideal Singing Voice. The questionnaire was then checked for content validity by 3 female singers with a minimum of 5 years of formal singing training in each style. A general outline of the sections in the questionnaire is shown as a flowchart in Figure 1.
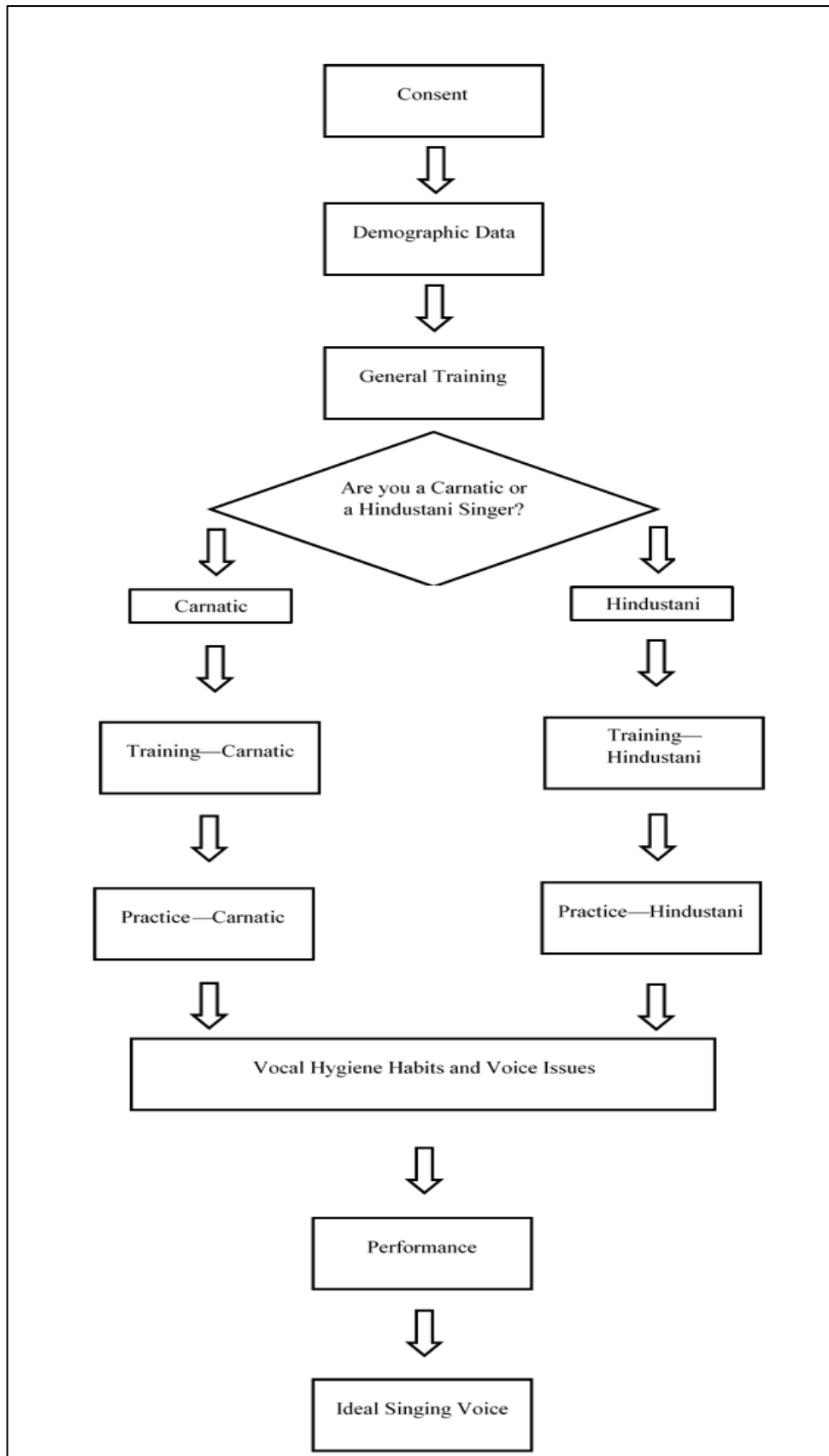
Figure 1: Flowchart depicting sections of developed questionnaire.

Phase II: Administration of the developed questionnaire

Participants

Twenty Carnatic and eighteen Hindustani vocalists participated in Phase II. Tables 4-5 show the details of the participants in Phase II.

Inclusionary criteria for Phase II

The same inclusionary criteria from Phase I of the study was carried forward to Phase II. However, participants from Phase I of the study were not considered for Phase II.

Participant Demographics

Participants were recruited by sending a link to the questionnaire to personal contacts, sharing the link on social media, and sharing the link with heads of music academies with a request to forward it to their employees. Details of recruited participants are given in tables 3-4. The questionnaire was filled by participants from India, Carnatic participants responding from Tamil Nadu, Kerala, Karnataka, Kerala, Maharashtra, Delhi, and Andhra Pradesh. Hindustani participants were from Maharashtra, Madhya Pradhesh, Delhi, Karnataka, and Assam.

Table 3: Demographic details and experience for Phase II: Carnatic participants

Participant ID	Age (years) (Mean=40.9/ SD=8.99)	Gender	Location	Singing experience (years) (Mean=21.5/SD=5.50)
2C1	31	Female	Gurgaon	20
2C2	48	Female	Chennai	30
2C3	51	Female	Mumbai	30
2C4	47	Female	Bangalore	18
2C5	34	Female	Bangalore	20
2C6	33	Female	Bengaluru	15
2C7	45	Female	Mumbai	25
2C8	58	Female	Bangalore	15
2C9	48	Female	Bangalore	20
2C10	33	Female	Mumbai	20
2C11	41	Male	Chennai	20
2C12	46	Male	Chennai	15
2C13	35	Male	Cochin	29
2C14	38	Male	Trichy	22
2C15	59	Male	Bangalore	15
2C16	32	Male	Chennai	28
2C17	30	Male	Bangalore	16
2C18	36	Male	Vizag	29
2C19	41	Male	Piravom	17
2C20	31	Male	Mysore	26

Table 3: Demographic details and experience for Phase II: Hindustani participants

Participant ID	Age (years) (Mean=40.1/ SD=7.99)	Gender	Location	Singing experience (years) (Mean=19.1/SD=3.24)
2H1	43	Female	Sirsi	20
2H2	38	Female	Assam	20
2H3	41	Female	Bangalore	25
2H4	45	Female	Indore	20
2H5	57	Female	Mumbai	16
2H6	52	Female	Gurgaon	15
2H7	38	Female	Bangalore	20
2H8	35	Female	Nashik	20
2H9	33	Female	Mysore	15
2H10	49	Female	Madhya Pradesh	18
2H11	37	Male	Assam	18
2H12	36	Male	Pune	19
2H13	42	Male	Nashik	17
2H14	31	Male	Jabalpur	17
2H15	33	Male	Bangalore	28
2H16	35	Male	Indore	18
2H17	56	Male	Maharashtra	20
2H18	30	Male	Karnataka	18
2H19	37	Male	Indore	15
2H20	34	Male	Nashik	20

Procedure

The developed questionnaire (Appendix II) was administered through the use of an online form (Google forms) on 20 trained Indian Classical vocalists from each of the two styles.

Questionnaire Analysis and Statistics.

The responses to forced-choice questions were compiled and percentage of each choice was calculated and tabulated. The results obtained were analysed and interpretations were made comparing the results in both styles of vocalists.

The specific terms used in the questions and in the participant responses have been compiled with pronunciations and definitions as a Glossary of Terms in Appendix III.

CHAPTER IV

RESULTS

This study aimed to develop a questionnaire to enhance understanding on the differences in vocal music pedagogy between singers trained in Carnatic and Hindustani styles of music, and then administer it on singers of both styles.

The objectives of the study were as follows:

1. To develop a questionnaire which can be used to obtain information on vocal music pedagogy as well as practice and performance aspects in Carnatic and Hindustani singers and validate the same.

2. To administer the developed questionnaire on singers of both styles in order to check for differences in the vocal music pedagogy across the two styles of music.

3. To check for gender differences, if any, between and across the two styles of music in the practice of vocal music pedagogy.

Results are discussed under Phase I and Phase II. The responses of two sets of participants for Phases I and II were collated and compiled and are described. Hence, no statistical tests were administered.

Phase I

A total of 34 questions were constructed under the following five domains: vocal training, practice, performance, vocal habits, and ideal voice characteristics in their style of singing, to obtain the views of the participants. The results in Phase I are the compiled responses of all the participants described in the paragraphs below and a few of the results are shown as graphs in figures 2-11. The list of questions used in Phase I is given in Appendix I.

Vocal Training: This section had 6 questions relating to the duration, age of onset, description of training, following of any bani/gharana, and sources of information for training.

Duration of musical training:

It was noted that a higher number of respondents in both Carnatic as well as Hindustani styles reported to have 15-24 years of training experience (6 participants in each style). No Hindustani participant had more than 30 years of training, while a single Carnatic participant (1C3) had an outlying value of 48 years of training experience. The results are depicted in Figures 2 and 3 for Carnatic and Hindustani participants respectively.

Age of Onset of Musical Training

The results indicated that the age of onset of training was earliest for Carnatic style (3 to 7 years of age in 6 out of 10 participants) and in Hindustani both 3 to 7 years of age as well as 8 to 12 years of age were noted to be common responses (3 participants for

each response). No respondents reported to have begun learning beyond the age of 18 years. Results are depicted graphically in Figures 4-5.
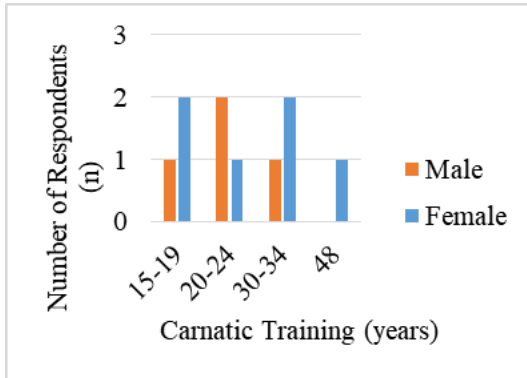
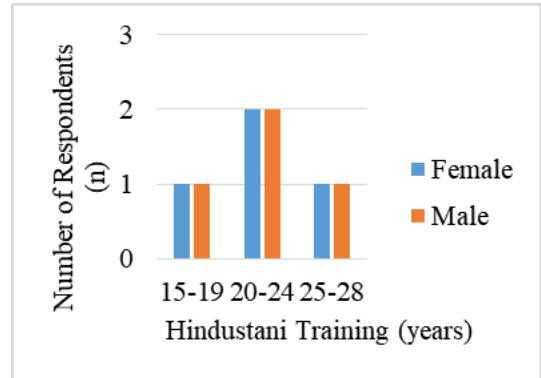

Figure 2: Years of training: Carnatic Singers

Figure 3: Years of training: Hindustani Singers
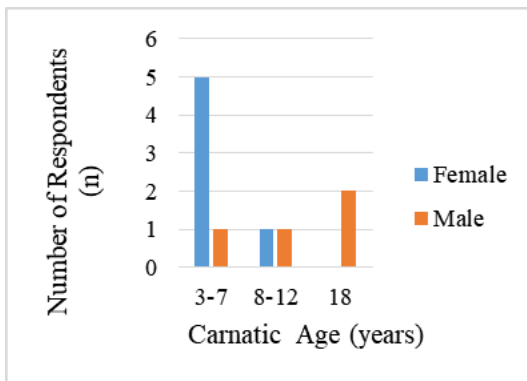
Figure 4: Age of onset: Carnatic

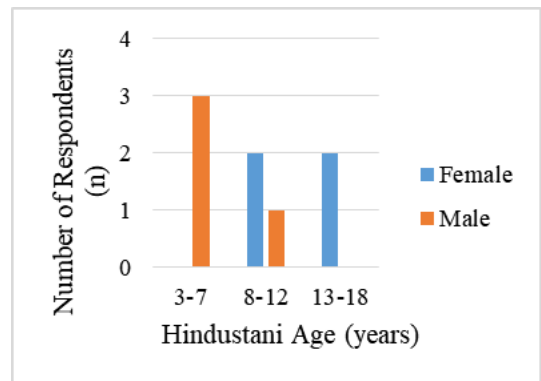*Figure 5: Age of onset: Hindustani*

Bani/Gharana

Of the 10 Carnatic respondents, 4 respondents purported to follow a particular 'bani' or singing style of Carnatic music, while the other 6 respondents stated that they did not follow any particular style. It was seen that all the participants who followed a particular bani reported a strict adherence to the original form of compositions with less tolerance

to changes during learning, practice, or performance than those who did not report to follow a particular bani.

For example, among them, Participant 1C2 reported to follow the 'Semmangudi' bani, and stated that this bani was (sic) "focused on the Ragam of the song, all of the sangatis are very authentic…does not allow any change in this…Ragam has to ooze from it that is the main peculiarity of the style…also there is a lot of importance on bhavam…What I specifically learnt for singing in this Bani is that I had to target standing notes a lot…when there is a long ending you are able to sustain the breath…for this is what we were asked to do for breath control specifically…have to make patterns so from Ma to sa then pa to ri then da to ga and so on…"

Among the Hindustani group, 2 participants (1H3 and 1H8) reported that they did not to follow any 'gharana' (musical tradition in Hindustani music. Among the other 6 respondents, 2 of them (coded as 1H2 and 14 reported to follow the Patiala gharana. One participant (1H7) followed the Gwalior gharana. The participant coded as 1H1 reported to follow the Kirana gharana. Two participants reported to follow more than one gharana; namely participant 1H5 and 1H6 followed combinations of Gwalior and Agra gharanas and Kirana, Jaipur, and Agra gharanas respectively.

Process of training and frequency and duration of classes if still undergoing training

All the Carnatic participants reported to follow a particular structured guideline involving a basic set of elementary exercises ("varsais"), followed by some simple

songs ("geethas", "swarajathis"), then more complex compositions ("varnams"), and then advanced level works, including instruction on creativity and improvisation in music ("manodharma"). Two Carnatic female participants reported to have learnt in a manner similar to the ancient 'gurukula' system, in which they spent most or all of the day with their teacher and were taught in less rigid intervals and structure. For example, Participant 1C8 reported that "…Even other people's classes [with my guru] I would sit and listen to and try to sing, even when she taught senior students. She did not stop me from trying to learn even these [difficult] compositions when I was in the basic level." Most Carnatic participants stated that their basic and intermediate training till the time they were performance ready took about 10 years, except for one male participant coded as 1C9, who had begun to learn Carnatic Music only in college. He said, "BA means there is a syllabus, from starting sarali varsais onwards, semester wise. But for those who have not learnt music it is very difficult to finish this in three years, almost impossible. Because there is a time limit in this hard work is very important." Five of the ten Carnatic participants were continuing the musical training. All of them stated that their training was more sporadic and that they attend 1-2 classes a week of varying duration, usually from 1 hour upwards. They also mentioned that this may change during the music season in December and January in which they themselves and/or their guru(s) may frequently perform, so in that time classes are not scheduled.

Among the Hindustani group, 5 participants (1H1, 1H3, 1H4, 1H6, and 1H8) described a paradigm of training in which they reported to have learned to sing the basic notes, then improvised note-combinations, in one 'raag' at a time, starting with a raag called bhairav that is analogous to the raga 'Maya Malava Gowla' used in basic lessons in Carnatic Music. Two participants (one male and one female, coded as 1H5 and 1H7

25

respectively) reported that before starting to learn different raags, they were given preliminary voice training on how to use their voices to sing the seven 'natural' notes. For example, Participant 1H5 said, "…first thing is introduction to alankar in which the seven natural notes are introduced in different permutation combinations. This is like an exercise for your throat and how to identify a note. Also the same thing is done for aakaar ookaar ikaar, and so on. After the sur sadhan with alankars the gharana talim [tradition] is taught in which the style of that particular gharana is understood." One participant reported that there was very little that had to be taught for him and opined that it was an inborn talent mostly. Participant 1H5 stated that they had studied in gurukul system. All other participants reported to have taken private classes once or twice a week.

Referral to any external books or materials in the process of training

Among the Carnatic participants, 6 individuals reported that they did not follow any external materials in their training and only listen to their Guru. Two individuals who had done their formal education in music reported to use textbooks based on their college syllabus for theory of music but not for voice culture. One participant reported to follow information sourced from public domain media, such as YouTube videos, to learn some songs or sangathis, and one participant said that while they personally did not use any external sources of information in their training, their gurus were quite willing to allow them to if the student chose so.

Four of the eight Hindustani participants reported that they referred to external textbooks for learning theory. The other 4 participants followed only the teachings of their guru.

Practice: This section contained 7 questions relating to the frequency and duration of practice sessions, specific warm-up and/or cool-down practices followed in a practice session, description of a typical practice session and any change in the practice regimen over the years, amount of teacher's input for the session, and sources of information regarding practice.

Frequency and Duration of Practice sessions

All 18 participants reported to practice vocal music every day and the duration ranged from 45 minutes to 6 hours, with 1-2 hours of practice per day being most common for Carnatic participants (5 out of 10 participants).

Among the majority of Hindustani respondents, the range of practice duration was from 1 to 7 hours per day, except for one female respondent currently living in the UK (1H4) who reported to practice for 30 minutes per day. Apart from this, the most common answer was between 2-4 hours (5 out of 10 participants).

Specific practices before and/or after a practice session

Seven Carnatic participants (4 female and 3 male) reported to follow some specific practices before and/or after a practice session. Of these, two Carnatic participants, one male and one female (1C2 and 1C3) reported to follow pranayama as a warm-up for

their voice. Two other participants (1C4 and 1C9, female and male respectively) stated that they practiced 'akaaram' to warm-up their voice. One female participant (1C8) specified that the she practiced notes in the lower octave (mandhra sthayi) early in the morning to warm up her voice. One male participant mentioned that they did yoga as a warm-up (1C1) and one female participant (1C5) reported that she warmed up using lip trills that were taught to her by one of her acquaintances who was a Western music teacher. Three participants, one male and two female (1C7, 1C6, and 1C10 respectively) reported that they did not practice any vocal warm-up. Of these participants, 1C6 quoted, "I don't believe in following any exercises…everyone gives all sorts of tips about breath control, [like] you have to sit straight and sing like this [and] you have to control manage your breath like this [and] you have to do vocal exercise like this…but for those who actually who have it in their blood there is no necessity to use tips and sing or to use tips and exercise…if we go into the depths [while we sing] in that then automatically everything will come." None of the Carnatic participants used any methods as a cool-down after their practice.

Six Hindustani participants (3 female and 3 male) answered that they followed one or more specific warm-up and/or cool-down exercises. All of the 6 quoted doing pranayams as a warm-up, of which participant 1H1 reported of doing only pranayams. Another warm-up practice mentioned by two of these participants (1H2 and 1H7) was 'kharaj ka riyaaz' or 'mandra sapthak riyaaz', and they explained of the technique that "Kharj helps remove the 'heaviness' in the voice that prevents modulation." Some other practices followed by a single participant each were aakaars and neck exercises (1H4), omkaar chanting (1H7), yoga (1H5), and meditation (1H6). Two of the Hindustani participants (1 male and 1 female, coded as 1H5 and 1H7 respectively) mentioned

following a variation of cool-down post their practice session. Participant 1H5 reported that he spent some time after the practice in silence to cool down, and 1H7 stated that she "chanted omkaar" in order to cool down. Two participants in the Hindustani group (1H3, male; 1H8, female) reported of not following any practices to warm-up or cool down.

Description of a typical practice session

Of the Carnatic respondents, 3 individuals (2 females and 1 male; 1C3, 1C4, 1C9) mentioned that they start their practice with 'akaram', which was the most commonly mentioned aspect. Two participants described separate practice sessions (1 male and 1 female; 1C1, 1C8), wherein they did an early morning practice consisting of akarma for a vocal warm-up and followed up later in the morning to practice compositions and creative aspects of singing. Two participants (1C7 and 1C10) started with practice of compositions, and then creative aspects, while another (1C2) stated that he focussed only on practice of creative aspects in his practice sessions. The female participants coded as 1C5 and 1C6 both said that they "didn't specifically sit to practice and kept singing throughout the day." Of these, participant 1C5 specified that throughout the day she kept singing the vocal exercises that she had learned from a Western vocalist, and participant 1C6 emphasised that she believed in "kelvi gnyanam" [learning by listening], and so chose to give priority to listening to various artists' recordings through the day.

Among the Hindustani cohort, a common theme that was noticed was the participants' report of starting their practice with an emphasis on low notes (kharj or mandra sapthak)

and slow speed, and moving through the course of their practice to higher notes and higher speeds. This pattern was reported by 4 participants coded as 1H2, 1H4, 1H5, 1H6, and 1H7 (male, female, male, and female respectively). Participants 1H2, 1H5, 1H6, and 1H7 specifically used the term "kharj ka riyaaz" or "mandra sapthak" when talking about singing low notes in the morning. An interesting addition to information about kharj was given by participant 1H5, who specified that the particular riyaaz was meant to be done specifically avoiding the intake of water. He did not provide any elaboration for this point. Participants 1H1, 1H3 and 1H8 (female, male, female) reported to start their practice directly with an 'alaap' or an improvisation, followed by compositions. Similar to some responses by Carnatic participants, 2 Hindustani participants (1H2, male; 1H5, male) reported to divide their practice into distinct sections, doing 'kharj ka riyaaz' in the morning, then spending their afternoons also in practice in different ways. Participant 1H2 stated that he spent his afternoon in listening to recordings of eminent singers of his gharana and participant 1H5 reported that he practiced compositions in the afternoon and sang fast phrases like 'taans' at the end of the day.

Change(s) in practice regimen over the years

Among the 10 Carnatic respondents, the majority of participants (9 participants) reported that they noticed a change in their practice regimen over the years. Of these, 8 reported improvements, while 1 participant (female; coded as 1C3) stated that she was "not able to sing akaram as well as she used to be able to." Six participants (all the male participants as well as two female participants) of the eight who reported improvement in their practice regimen mentioned that their current methodology of practice was

aimed at improving their creativity and skills of improvisation in singing, an advanced concept in Carnatic music (1C1, male; 1C2, male; 1C4, female; 1C7, male; 1C9, male; 1C10, female). In the remaining two participants of those who reported a positive change, one (1C5) mentioned specific practices targeted towards a particular aspect of singing that they were practising currently such as adding lip rolls as a warm-up, while the other participant (1C1) reported that he focussed on practicing sustained notes to improve his breath control. One Carnatic participant had not made any changes to their practice regimen over the years.

Five Hindustani participants reported a change in the way they practiced. Of these, one participant (coded as 1H1) indicated a decrease in duration of practice post marriage. Among the remaining four, three respondents (2 male and 1 female, coded as 1H5, 1H6, and 1H7 respectively) reported to have begun to focus more on creativity and improvisation, along similar lines to some Carnatic respondents. Also, participant 1H4 mentioned that she had only begun to include cool-downs in her practice regimen after attending a singing workshop, in which she also had learned some new 'alankars' (note combinations) which she subsequently added to her practice. In addition, she reported that she had stopped forcing her voice if it felt tight. The remaining three of the eight did not report of any change in regimen.

Input from the teacher/ Guru for practice session

In the Carnatic group, 4 participants (1C1, male; 1C2, male; 1C2, female; 1C6, female) reported that their guru provided a lot of input with regard to their practice sessions. One respondent (1C1) qualified this answer with additional information. He stated that

his guru (a professional singer and musicologist) was taking an especial interest in providing him information on voice culture. The remaining 6 Carnatic participants did not report of a large amount of input from their teacher with regard to their practice sessions.

Among the Hindustani singers interviewed, only 2 male participants (1H3, 1H5) reported high levels of input, with the mention of 'talim' given by participant 1H5. Two of them reported to receive some input. For example, Participant 1H6 also mentioned talim; however, he reported that while his guru's input in this regard used to be high, it had reduced over time, and Participant 1H1 specified that her guru gave input only about improvisational aspects like alaap. Respondents coded as 1H2 (male), 1H4 (female), 1H7 (female), and 1H8 (female) reported that they received "not much input" from their gurus.

Source of information for Practice

Seven of the Carnatic participants reported that they only followed what their guru told them in their practice sessions, and this was the most common response. Participant 1C1 further mentioned that his guru did not believe in following external sources and actively discouraged him from following any other vocal practices from outside sources. Among the remaining 3 Carnatic participants, 2 of them stated that they took no input from their teacher or any other external source in their practice sessions and carried them out independently. A single participant (1C8) mentioned that she followed some information from public domain sources such as YouTube, along with listening to her teacher.

Four participants in the Hindustani group reported that they followed only what their teacher told them, which was the most common response. Two female participants (1H7 and 1H8) reported that they got information from their senior peer artists. Participant 1H8 said, however, that the information she got did not pertain to voice culture or riyaaz sessions. One female participant (1H5) reported to do some research on her own regarding methods of vocal practice and one male participant (1H5) obtained information for practice from listening to other artists' concerts.

Vocal Habits and Issues: This domain contained 7 questions pertaining to particular dietary habits, practices followed for voice care, gender-specific voice use and issues, history of voice problems and management of the same, and sources of information regarding prevention and treatment of voice problems.

Specific diet plan to safeguard voice

The responses for this section were classified as 'stringent diet plan', 'moderately stringent or less restrictive diet plan', 'flexible diet plan', along with following up with some contingency to safeguard voice, and 'completely non-restrictive or non-stringent diet'.

Among the Carnatic respondents, 4 individuals reported of following a highly stringent diet in which they completely avoided cold, spicy, sour, and/or sweet foods and also only drank warm water with some Indian spices such as jeera. Two respondents indicated that they only avoided or lessened the intake of cold foods and also drank

warm water. Another 2 individuals reported that they partook of almost all foods; however, they followed this up with drinking warm water or milk. Finally, 2 individuals stated that they did not follow any diet plan whatsoever.

In the Hindustani cohort, 4 out of 8 respondents reported a 'moderate' level of stringency in their diet plan, which involved avoidance of aerated drinks and cold foods, lessening caffeine and sweet intake, and drinking more water. Two participants followed a highly stringent diet of only boiled food and lukewarm or room temperature water. The remaining 2 participants in this group reported of no particular diet modifications specifically for the care of their voice.

Specific/unique practices to safeguard voice

Of the Carnatic interviewees, all the four male respondents reported of following specific practices, such as controlling their amount of talking in general (1C7 and 1C9), limited talking before a performance (1C1) and talking less loudly (1C2).

Only one female participant mentioned a specific practice followed to safeguard voice (1C10), who reported that she tried to be careful about drinking outside water. The remaining five female participants did not indicate following any specific routine.

Six Hindustani singers reported specific safeguarding practices. Two females (1H1, 1H7) and one male (1H6) reported that they avoided speaking loudly. Participant 1H4 mentioned that she avoided all environments where she was required to speak loudly.

One female (1H1) and one male (1H5) restricted their amount of speaking. Participant 1H2 reported that he avoided dusty environments. The remaining 2 participants did not report of anything specific to safeguard their voice.

Voice use during puberty in males and pre-menstrual syndrome in females

All 10 female participants, be it Carnatic or Hindustani, unanimously responded that they did not change their singing habits in any way before or during their menses. Participants 1C6 and 1H1 further added that singing helped them manage the pain and cramps during their menstrual cycles.

Among the male participants in the Carnatic set, 1C2 mentioned that he lessened singing and increased listening during time of voice change, 1C1 stated that he continued to sing as before but slowly changed scale as needed over a period of time. Participants 1C7 and 1C9 reported that they had started learning Carnatic singing only post their pitch-shift.

In the male Hindustani singers, all 4 of them reported that they continued to sing and slowly changed scales while monitoring their comfortable pitch under the guidance of their gurus. Participant 1H5 reported that his guru had advised him not to attempt high pitched singing during puberty due to the risk of his voice cracking.

History of voice problems and treatment

Three males and one female reported of having faced voice problems before in the Carnatic group, of which one (1C1) had consulted a speech-language pathologist, one (1C3) had used home remedies, one (1C4) had reduced their shruthi, and one (1C7) had taken homeopathic medicine. The remaining 6 Carnatic participants reported of not having faced any issues with their voice in the past.

Three Hindustani participants, one male and two female, reported that they had experienced voice problems in the past. One (1H2) stopped singing for some time, one (1H4) consulted a speech-language pathologist in the UK, and one (1H8) took advice from a senior singer. For example, Participant 1H2 (male) said, "Yes, [twelve years ago] I had a viral fever and lost my voice because of an infection at my vocal cords. I had to stop singing for 3-4 months and take antibiotics. Then a few years ago again I had problems because of acidity… I just started eating on time and brought it into control." The remaining 5 Hindustani participants did not have a history of voice problems.

Specific/particular practices to help treat common voice problems

Six Carnatic participants reported specific practices, of which five mentioned home remedies like ayurvedic preparations, certain herbs, or gargling with salt water and honey. For example, Participant 1C3 (female) said, "I use home remedies only for this like omavelli, then warm water with honey, gargling, ground ginger. Betel leaf in the morning with clove is also something I take." Of these six individuals, one participant

(1C5) also reported of practicing lip and tongue trills to help treat voice problems under advice from a peer Western vocalist.

Only two Hindustani participants quoted specific practices to treat voice problems. A female participant from Assam (1H1) mentioned that she avoided high pitch singing during voice cracks and drank 1/2 teaspoon mustard oil with 1/2 teaspoon 'khar'. A male participant 1H3 stated that he chanted 'omkaars' to help mitigate voice problems. In both styles, the remaining participants (4 in Carnatic and 6 in Hindustani) did not specify any particular practices followed by them to treat voice problems.

Input from Guru about habits to maintain voice and/or deal with problems in voice

Among the Carnatic participants, 2 male and 2 female participants reported that their guru provided a lot of input, 1 male and 1 female participant reported that they provided some input, 2 female singers reported that they did provide much input, and 1 female and 1 male participant reported to receive no input from their guru regarding habits to maintain their voice and/or deal with problems in their voice.

Two male Hindustani participants reported to receive a lot of input from their gurus, two male and two female participants stated that they received some input, and two female singers stated that they did not receive much input from their gurus

Other sources of information to maintenance voice, prevention and/ treatment of voice problems

In the Carnatic group, 7 participants reported that they took information only from their guru and no other sources. Participant 1C1 (male) further quoted, "[My guru] doesn't believe in voice therapy…She wanted me to stop voice therapy…She says speech language pathologists are not musicians. They only have theoretical knowledge. They don't know the demands of Carnatic music." Three participants reported sources of information other than their respective teachers. Participant 1C5 reported that she took information from a western musician who was an acquaintance of hers. Participant 1C7 (male) stated that he had been taught some yoga 'mudras' to help treat throat problems by a yoga teacher of his acquaintance. Participant 1C8 (female) mentioned that she took information from her family members.

Two Hindustani singers (1H1, 1H3; female, male) out of the total eight reported that they took information only from their gurus. Participant 1H4 reported that she also did her 'own research' apart from consulting with her teacher, but did not qualify this statement further. Two female participants reported taking senior musicians' advice (1H7, 1H8). Participant 1H2 said his mother gave some information on how to manage voice problems, and 1H5 stated that he relied on input from his friends, family, and audience. One participant mentioned staying in touch with an ENT doctor for voice treatment tips (1H6, male).

Performance: This domain contained 8 questions related to performance experience, frequency of performance, time of day singers usually performed, duration and

description of a typical Classical performance, the accompaniments involved in a performance, the voice-related considerations in planning and executing a performance, and the extent of the teacher's support of input for a performance.

Years of experience, frequency, and duration of performance

Among the Carnatic participants, the range of experience was from 5 to 30 years, and 6 of them had 16 or more years of experience performing, with the median response being 16-20 years of performance experience. For performance frequency, a large number of them reported to perform 2-5 times per year (5 responses), and the range of answers were mostly from 2-5 per year to 6-8 per month, with a single outlying response of 1-2 per year. Carnatic respondents mostly reported to perform for a duration of 2-3 hours (7 participants).

In the Hindustani set, the majority (6 participants) had between 10-20 years of experience with performance, with 2 outlying respondents who had between 25-27 years performance experience. Hindustani performance frequencies ranged from 2-4 per year to 5-6 per month. The most common reported durations of performance were 1-1.5 and 2-3 hours, with 1 response each at the extremes of 0.5 hours and 3-4 hours. Experience, frequency, and duration of performance among Carnatic and Hindustani interviewees are depicted graphically in Figures 6-11.
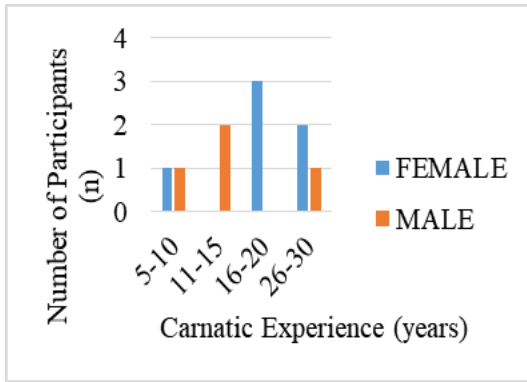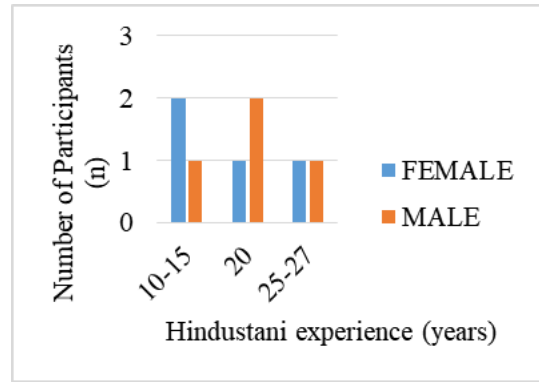
Figure 6: Carnatic Performance Experience
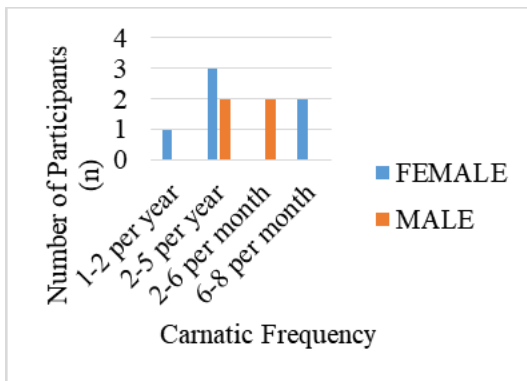

Figure 7: Hindustani Performance Experience

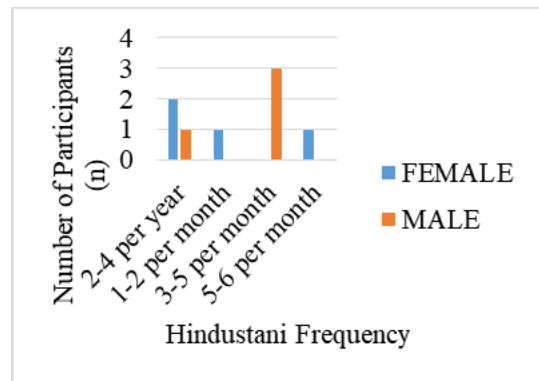*Figure 8: Carnatic Performance Frequency*

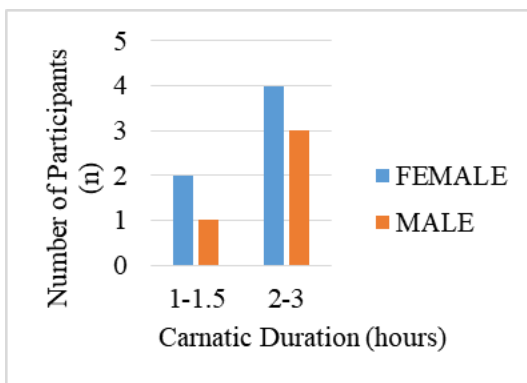*Figure 9: Hindustani Performance Frequency*

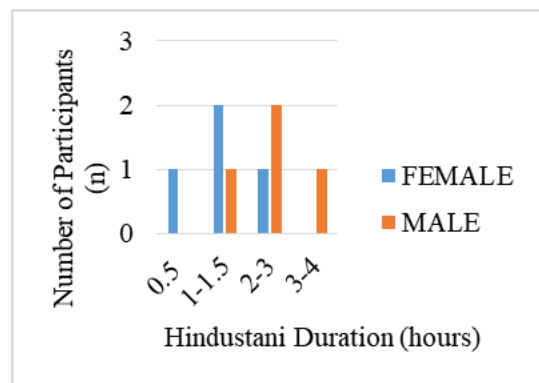*Figure 10: Duration of Carnatic Performances*

Figure 11: Duration of Hindustani Performances

Time of performance

All Carnatic participants reported that they performed in the evening usually. Three participants (1C1, 1C7, and 1C8) further added that during poojas or the music season, morning concerts were also sometimes present.

Hindustani participants gave more varying answers. While 5 participants stated that they usually performed in afternoons or evenings (1H1, 1H4, 1H8, 1H3, 1H2), 3 individuals mentioned that they got the opportunity to perform all round the clock (1H7, 1H6, 1H5).

Accompaniments during a performance

All of the Carnatic participants mentioned that the typical accompaniments were violin, mridangam, and sometimes kanjira, ghatam, and/or morsing.

Among the Hindustani respondents, all participants commonly mentioned having a tabla, harmonium, and tanpura, and sometimes a sarangi.

Typical structure of vocal performance

All Carnatic respondents described a 'standard' kutcheri format with a fairly stringent structure. This was described by one participant as follows: "first a varnam or a ganapathi song, then a few songs, then a sub-main, that is a small alapana, then a song with swaras, then two small songs, then main with a fifteen minute alapana, then the

main song with a neraval then swaras, thani avarthanam, then perhaps a thillana or a mangalam, ending with perhaps some tukdas or hindi bhajans."

All of the Hindustani participants also described similar structures to their performance, albeit differing from the Carnatic structure. They described singing a single raag throughout the performance, singing first a slower composition called a bada khyal and then a fast-paced composition called a chota khyal, with improvisation in the form of alaaps and taans in both at differing speeds.

Voice-related considerations involved in planning a performance

Three Carnatic participants (1C1, 1C6, and 1C9) answered that they did not have any such voice-related considerations. Six participants (1C2, 1C3, 1C4, 1C5, 1C7, and 1C8) described taking a call on the particular day of the performance based on their voice status. Of these, 4 of them reported that they chose which raga to sing based on the condition of their voice on the day of performance, as some ragas were pre-disposed to higher or lower parts of the octave. Participant 1C8 reported that if she felt strain she would try to warm-up beforehand. Participant 1C5 stated that she chose the order of songs to sing by balancing the octaves most frequently occurring in each song. She explained, "If I have to sing high in one octave for one song I will plan the next song such that it is lower octave." A single participant (1C10) reported avoiding oily and spicy food before a performance.

In the Hindustani group, 5 participants (1H1, 1H3, 1H5, 1H7, 1H8) reported that there are no such considerations when planning a performance. One participant (1H6) stated that they "just take a call on a particular day and decide what to do." Two respondents (1H2, 1H4) reported that their voice status on the day of their performance impacted which raga they chose as well as the length of their performance.

Input of Guru in planning and executing a performance

All of the Carnatic participants reported that they worked fairly independently in planning and executing a performance.

Among the Hindustani participants, 5 individuals reported that they did not rely on much input from their guru, while 3 of them reported that they received a lot of input.

Ideal Voice Characteristics: This domain contained 6 questions pertaining to the participants' personal opinions of what constituted the ideal voice for Carnatic/Hindustani music, whether this opinion was influenced by the teacher or other sources, the achievability of the ideal, specific or particular training for attaining the ideal, suggestions by the participants for the same, and finally, the participants' self-description of their own voices.

Personal opinion of the 'ideal' voice for Carnatic/Hindustani vocal music

Among the Carnatic participants, 3 of them (1C6, 1C2, 1C7) mentioned that they felt the ideal voice should be heavy, deep, and loud. Participant 1C3 opined that maintaining shruthi was important, and 1C1 was of the opinion that gamakas should flow easily. Five participants stated that they did not believe in the concept of an ideal voice for Carnatic music (1C4, 1C8, 1C5, 1C9, 1C10).

Hindustani participants tended to use terms like 'naturalness' and 'personality' to the voice to describe the ideal (1H8, 1H4). Participant 1H1 specified that females should not have too high-pitched voices in her opinion. Three respondents (1H2, 1H5, 1H6) described about the necessity of a wide frequency range of three octaves to be useable for an ideal voice. Participants 1H3 and 1H7 stated that they did not believe in an ideal voice for Hindustani music.

Influence of Guru/ Bani/ Gharana or external sources on opinions of this ideal

In the Carnatic set, 4 participants (1C1, 1C5, 1C7, and 1C10) stated that their opinions were based on their own experience, while 6 participants 91C2, 1C3, 1C4, 1C6, 1C8, and 1C9) reported that their opinions were based on that of their guru.

Conversely, all of the Hindustani participants reported that their opinions were purely their own.

Particular training from the Guru to specifically to meet the ideals

None of the participants in either group described training given specifically to meet the targets described in the earlier description of an 'ideal' voice.

Belief about achieving the ideal by any student of Carnatic/Hindustani music

Three of the five Carnatic participants who believed in an ideal voice answered in affirmative. However, 2 of them said that they did not believe that an ideal voice was attainable by anyone (1C3 and 1C6). Participant 1C3 stated, "No, the voice is something God-given. If you don't have it you cannot sing."

In the Hindustani group, out of the 6 participants who believed in an ideal voice, participant 1H1 said that this was not possible because every student had a unique voice. Participant 1H2 also answered in negative, also citing that the voice was 'God's gift.' The other four participants answered that an ideal voice was attainable by any student of Hindustani music.

Suggestions for students of vocal music striving towards achieving this ideal voice

Responses for both groups can be grouped under 'shruthi', 'patience, willpower and motivation', and 'importance of Guru'.

Among the 6 Carnatic participants who had described their opinion of an ideal voice, 3 emphasised the importance of paying attention to shruthi while singing (1C7, 1C9,

1C10). Three participants stressed on the importance of rigorous practice and motivation (1C2, 1C8, 1C10) and two (1C1, 1C8) about the impact of the guru, the student's choice in approaching a guru and complete adherence to the teachings of Guru.

In the Hindustani respondents, 5 of them described about the importance of regular practice and motivation to learn (1H1, 1H2, 1H3, 1H5, and 1H7). The importance of listening to the guru was emphasised by participants 1H4 and 1H6. A single participant (1H8) stated that singing in one's own natural voice was essential.

Self-description of own voice

Seven Carnatic participants described their respective voices as loud as well as having a range of 1.5-2 octaves. Three participants (1C5, female; 1C8, female; and 1C9, male) stated that their voices had a large range of octaves but were not very loud.

Three of the Hindustani participants were unable to describe their own voices. Two people described their voices as 'bass' (1H1, 1H2). Three people said their voices were light and high pitched (1H3, 1H7, 1H8).

In summary, compilation of all the information in Phase I led to differing views which were taken into consideration and a questionnaire with 48 questions was devised. This questionnaire was validated by a total of 3 Carnatic and 3 Hindustani singers, all of whom had a minimum of 5 years of formal musical training in their respective styles.

Phase II

In Phase II, a total of 48 questions were framed corresponding to the domains Demographic Data, Training History (General and Style-specific), Practice (Style-specific), Vocal Habits and Issues, Performance, and Ideal Voice Characteristics, as shown in Appendix II.

In particular, there were:

- 5 questions in demographic data

- 11 questions in General Training

- 13 questions in Style-specific training (6 in Hindustani and 7 in Carnatic)

- 6 questions in Style-specific practice (3 in Hindustani and 3 in Carnatic)

- 7 questions in Vocal habits and Issues

- 4 questions in performance

- 2 questions in ideal voice characteristics in their style of singing.

Questions were either brief answer, single-choice selection, or multiple-choice selection questions. Of these, 38 were answerable by Hindustani respondents and 39 were answerable by Carnatic respondents.

The responses for pertinent questions of all the participants in Phase II were compiled and are described as results in the following paragraphs, and shown in tables 5-6 and in figures 12-32.

Demographic Data

The Demographic details of the participants of phase II has been described in the previous chapter (Method) and also been depicted in the same chapter in Tables 3-4. The questions are similar to both the styles and hence common numbering was used.

Training

In this, the questions are similar to both the styles and hence common numbering was used.

What have you studied up till? (Q-6) Was your formal education in Indian Classical Music? (Q-7)

Among the Carnatic participants, the majority of them had completed a master's degree, either in music or in some other discipline (75% of total Carnatic participants), and in the Hindustani group, 45% of the total had studied up till a Bachelor's degree.

Of the overall 40 participants (Carnatic and Hindustani combined), 55% of each group reported of no formal education in music, while the remaining 45% in each style had studied music in formal education. The results are depicted in Table 6 below.

Table 5: Education of Phase II participants.

Education		Musical Style					
Field of Education	Level of Education	Carnatic (n=20)			Hindustani (n= 20)		
		Male	Female	Total	Male	Female	Total
Music	Diploma	5%	0%	5%	0%	5%	5%
	Bachelor's	5%	0%	5%	10%	5%	15%
	Master's	15%	15%	30%	15%	10%	25%
	PhD	0%	5%	5%	0%	0%	0%
Other Disciplines	Diploma	0%	5%	5%	0%	0%	0%
	Bachelor's	0%	5%	5%	25%	20%	45%
	Master's	25%	20%	45%	0%	10%	10%
	PhD	0%	0%	0%	0%	0%	0%
		Total		100%	Total		100%

Are you currently a full-time musician? (Q-9)

More Carnatic participants sang full-time (85% of Carnatic participants), while 55% of Hindustani participants reported singing as their full-time career. Results are compiled and displayed in Figures 12-13.
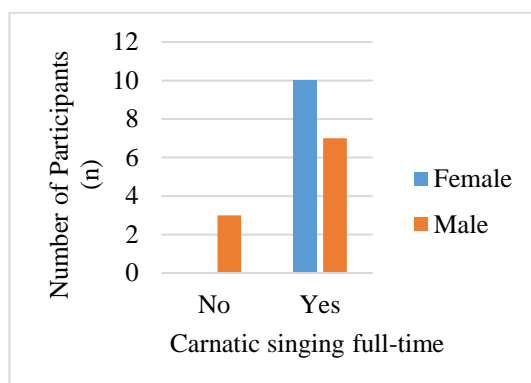

Figure 12: Carnatic singing full-time

Figure 13: Hindustani singing full-time
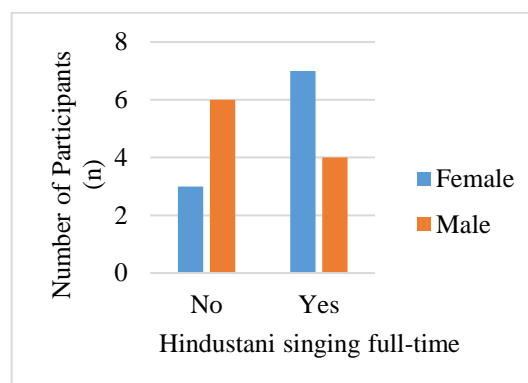
How old were you when you started learning Indian Classical Singing? (Q-11)

Among both groups, '5-10 years old' was the most common answer (65% of Carnatic respondents and 45% of Hindustani respondents). Results are depicted graphically in figures 14-15.
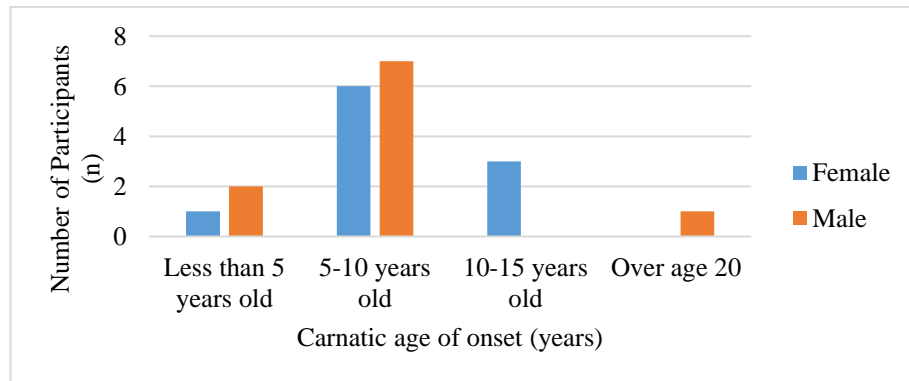

Figure 14: Age of beginning musical training: Carnatic
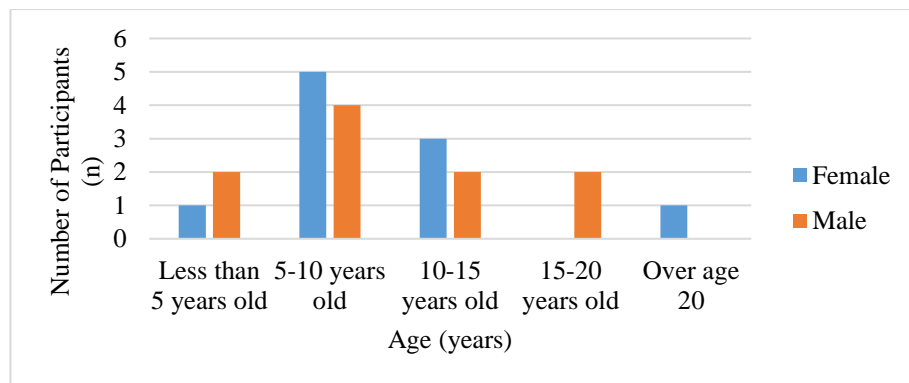
Figure 15: Age of beginning musical training—Hindustani

Are you still learning from a Guru? (Q-13)

60% of the Carnatic participants answered in affirmative, while 60% of Hindustani participants answered in negative. Results are depicted graphically in Figures 16-17.
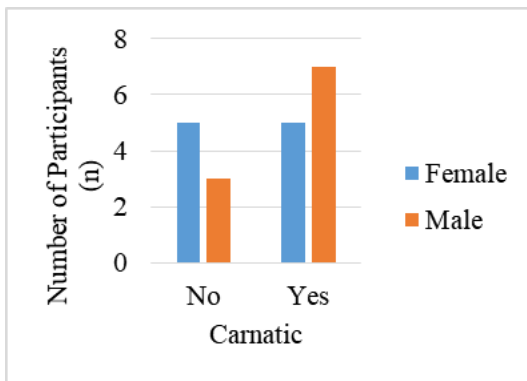
Figure 16: Current training status: Carnatic
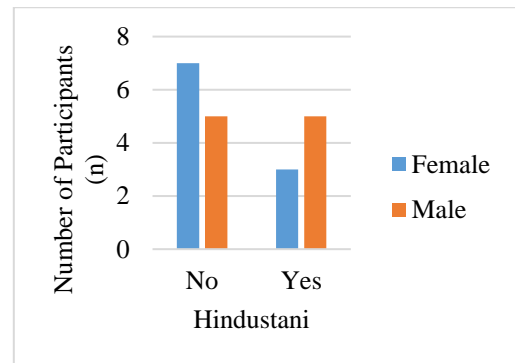
Figure 17: Current training status—Hindustani

Did you learn from a single Guru or multiple Gurus? (Q-14)

All 20 Carnatic participants (100%) reported that they had learned under multiple gurus.

Among the Hindustani cohort also, 'different gurus' made up the majority of the responses, with only 30% of the participants reporting to have learned music entirely with one teacher. Results are depicted below in Figure 18.
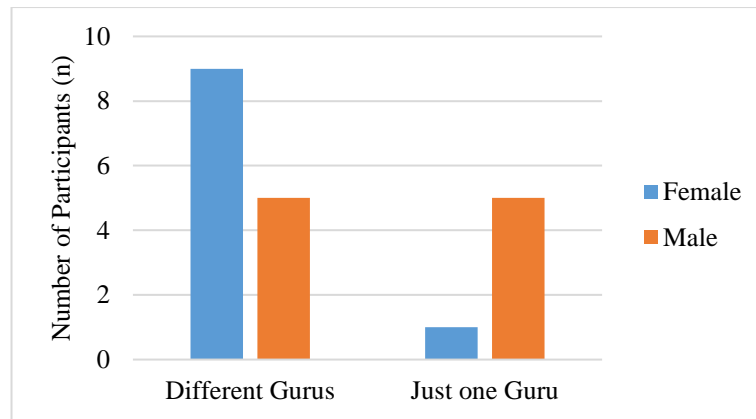
Figure 18: Single or Multiple gurus: Hindustani

Style-specific training

There are noteworthy distinctions in the singing traditions practiced which encompass the subtle yet distinct characteristics across the two styles of vocal music, Carnatic and Hindustani. Hence, the questions in this section differed across the two styles, leading to use of specific identity markers. The questions were denoted as H17-22 for Hindustani participants and C17-23 for Carnatic participants.

*Do you follow any particular 'bani'? (Q-C17) If 'yes', please specify which bani. (Q-C18) or Which gharana(s) do you follow? (Q-H17)*

80% of the Carnatic respondents did not follow any bani, while 80% of the Hindustani participants followed at least one gharana.

Among the remaining Carnatic respondents, 15% of them reported to follow a single bani and 5% reported to follow two banis, but there was no consensus among the responses.

As some of the Hindustani singers follow more than one 'gharana' the question H17 allowed respondents to choose more than one option. A majority of Hindustani respondents (60%) followed only a single gharana, and among them, Gwalior gharana was the most commonly followed (30% of total Hindustani participants). The results are shown in Table 6 below.

Table 6: Banis and Gharanas followed by participants of Phase II

Bani/Gharana		Carnatic			Hindustani		
		Male	Female	Total	Male	Female	Total
None		40%	40%	80%	5%	15%	20%
Gharana(s)	Gwalior	NA	NA	NA	10%	20%	30%
	Kirana	NA	NA	NA	10%	5%	15%
	Other single*	NA	NA	NA	5%	10%	15%
	Gwalior and Patiala**	NA	NA	NA	10%	0%	10%
	Other combination	NA	NA	NA	10%	0%	10%
Bani(s)	Chennai	5%	0%	5%	NA	NA	NA
	Musiri	0%	5%	5%	NA	NA	NA
	Semmangudi	5%	0%	5%	NA	NA	NA
	Tanjore and Andhra	0%	5%	5%	NA	NA	NA

*Other single: Dagar, Jaipur, Patiala; **Other combination: Kirana & Jaipur, Kirana & Patiala

Do you believe your gharana affects your voice culture? (Q-H18) or *Do you believe your bani affects your voice culture? (Q-C19)*

An interesting observation by the majority (90%) of the Carnatic participants was that they did not believe bani affected voice culture while Hindustani participants (65%) more commonly answered in affirmative.

How much time per week do you currently spend in learning from a Guru? (Q-H21/C22)

Of the Carnatic respondents reporting to be currently learning from a guru (60% of total participants), a majority of people (45% of total participants) reported that they spent 1-4 hours in training per week. Among the respondents in the Hindustani group who said they were still learning (45% of total respondents), more people spent an hour or less per week in training (25% of total respondents), and 20% of the total number of Hindustani participants spent between 1-4 hours per week. Results are shown in Figures 19-20.
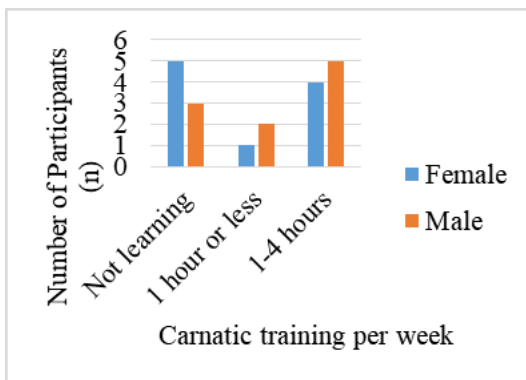

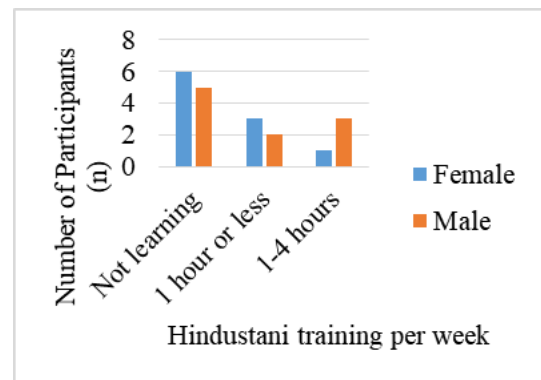*Figure 19: Time per week spent in training—Carnatic*

Figure 20: Time spent per week in training: Hindustani

Where do you get information about voice for your learning, practice habits, voice care, and managing voice problems? (Q-H22/C23)

This question allowed multiple selections per answer, as many participants had more than one source of information.

Among the Carnatic respondents, 40% of the participants chose Guru, public domain recordings such as those on YouTube, and listening to other vocalists. A single choice of 'Guru' only was chosen by 20% of them. Only 20% of the participants did not include their respective teachers as a source of information in their choices, and instead chose to opt for only obtaining information from medical professionals or public domain media. The other 20% chose a large variety of sources of information.

There was also a similar trend seen in the sources of information among Hindustani participants, in which 30% of participants chose to follow only the teachings of their Guru and 20% followed their Guru along with public domain media sources. The other 50% of participants chose to follow varying combinations of sources.

Style-specific Practice

This section had different terminologies provided in the questions and different options for each respective style, and hence, the differential system of numbering questions with the numeral prefixed with either 'H' or 'C' continued for this section.

How often do you practise vocal music? (Q-H23/C24)

In each category, 55% of respondents reported to practice music every day. Most other Hindustani participants (35%) practiced at least 4-6 days a week, and 20% of Carnatic participants practiced 1-3 days a week. Results are shown in Figures 21-22.
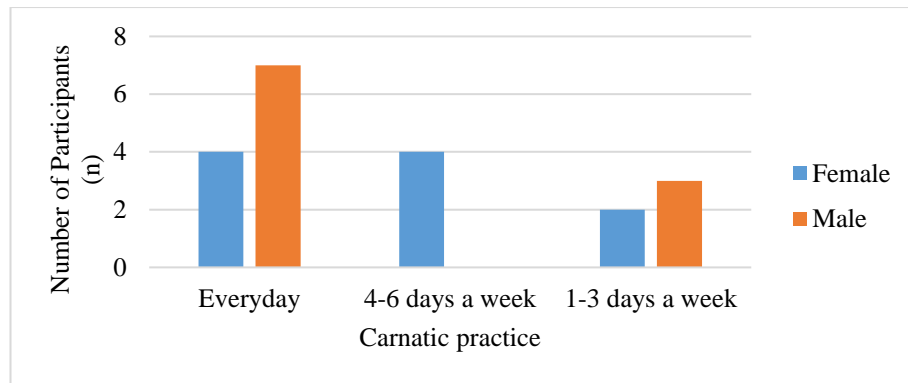
Figure 21: Frequency of practice sessions: Carnatic
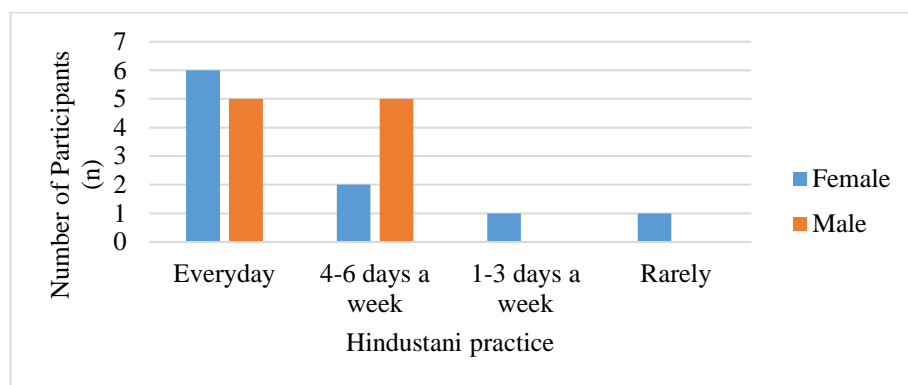
Figure 22: Frequency of practice sessions: Hindustani

What is the duration of an average practice session? (Q-H24/C25)

Among the Carnatic participants, 50% of them reported practicing between 30 minutes to 1 hour and 50% reported that they practiced between 1 and 3 hours.

In the Hindustani group, a slightly larger number of people (65% of the participants) reported that they practiced for between 1 and 3 hours each day and 35% of them reported that their average practice duration was for 30 minutes-1 hour.

In both styles, a slightly higher proportion of males appeared to practice for longer durations, as indicated in Figures 23-24 below.
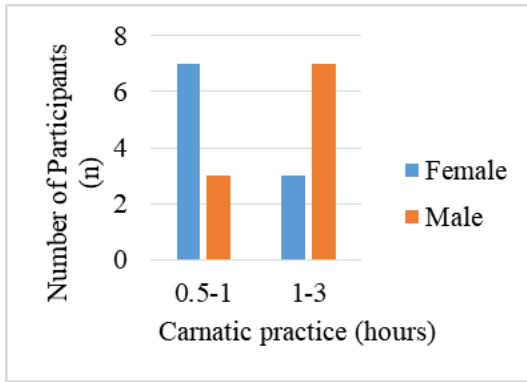
Figure 23: Practice time: Carnatic   *Figure 24: Practice time: Hindustani*
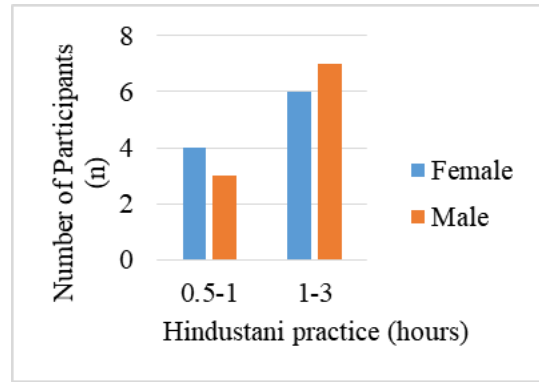
Do you incorporate any of the following in your practice session? (Q-H25/C26)

This question allowed multiple selections per answer. Options were provided based on the different interview responses that had been obtained for different styles in Phase I. Among the Carnatic respondents, 25% reported to only do 'akaram practice in basic varsais'. A further 25% did Pranayama and exercises involving sustaining notes for extended periods of time in addition to akaram. Doing practice in the lower octave (Mandhra sthayi) in the early morning was carried out in addition to all the above mentioned exercises by 25% of the participants. The remaining 25% did any combination of these or performed other vocal exercises like lip or tongue trills.

In the Hindustani group, 35% of the respondents reported to follow practices including aakaars, omkaars, kharaj ka riyaaz, alankaars, and pranayama. Also, 15% of the participants did physical exercise in addition to all of these. Among the remaining respondents, different combinations of answers were noted with no clear consensus. A single participant in each group reported not to follow any specific practices.

<u>Vocal Hygiene Habits and Vocal Issues</u>

In this section, the questions followed a common system of numbering as they were all worded similarly for both sets of respondents (Questions 27-33).

Do you do any of the following to take care of your voice? (Q-27)

This question allowed multiple selections per answer and related to diet modifications as well as conservative voice use. 'Drinking warm water' was one of the most commonly chosen responses in both styles, in combination with other responses that are described below.

Among the Carnatic respondents, 30% of them followed practices of diet modification that included avoidance of cold, spicy, oily, and/or sour foods and also drank warm water. Another 20% of the participants followed these habits and also tried to use their voice conservatively by lessening their speaking intensity and duration. Avoiding caffeine and sweet intake along with all of the other diet restrictions was reported by 15% of the participants. A few of them (10% of participants) only chose drinking warm water among the options provided. The remaining participants followed different combinations of practices with no specific consensus.

A similar trend was seen in the Hindustani set, in which 30% of the participants chose 'drinking warm water' in combination with avoidance of sweet, sour, oily, or spicy food. Another 20% of chose lessening their amount of and avoiding dust in addition to the previously mentioned options. Out of the total participants, 10% did not choose any of the options. In general, Hindustani participants appeared to choose less options,

meaning that they made less changes in diet and lifestyle than their Carnatic counterparts

If you are a woman who has not yet attained menopause, do you avoid singing before or during your menses? (Q-28)

Of the 20 total female participants, the majority (95%) of them reported that they did not stop singing during or before menses, except for a single Hindustani respondent.

If you are a man, during the time your voice pitch changed in adolescence did you change your singing habits in any way? (Q-29) If 'yes', please describe briefly (Q-30)

Of the 20 male respondents, the majority (75% of male participants) reported that they had not changed their singing habits during adolescent voice change. 15% of them reported a change in singing habits during puberty in that they had slowly shifted pitch over time. A single individual had started his training post-puberty and therefore answered as 'not-applicable'.

Have you ever faced problems with your voice? (Q-31) If 'yes', whom did you consult for advice? (Q-32)

In the Carnatic group, 60% of the participants reported of having faced a voice problem in the past. These individuals more commonly responded that they did not consult anyone for advice (20% of total Carnatic participants). The teacher along with doctor and family members was chosen by 15% of total respondents. Some individuals chose to consult only the Guru (10%) or only the doctor (10%).

Among the Hindustani singers, 45% reported of having had problems with their voice before. A significant percentage of this group reported of having consulted their Guru, family members, and a doctor (20% of total respondents). Some of them (15%) chose to consult only a doctor. A single respondent in each group also chose 'speech-language pathologist' along with the above mentioned options.

What would you do in case of a voice problem? (Q-33)

Among the Carnatic respondents, the majority of respondents chose to use home remedies and stop singing for some time (30%) or only use home remedies (20%). An additional 15% of respondents also included going to a doctor and going to a voice therapist along with the previously mentioned options. The remaining participants chose a variety of options with no observable trend.

Sixty percent of the Hindustani respondents chose to follow home remedies, go to a medical doctor, and stop singing for some time. Some individuals (20%) only chose 'stop singing for some time'. Others chose different combinations of options.

Performance

In this section, the questions followed a common system of numbering as they were all worded similarly for both sets of respondents (Questions 34-37).

How many years have you been a performing artist? (Q-34)

Fifty percent of the Carnatic participants had between 5-15 years of performance experience, and the range of experience was from 0-5 to 25-30 years.

Among the Hindustani respondents, the range of experience was mostly evenly distributed from 5-10 to 25-30 years, with a single participant having less than 5 years of performance experience. The performance experience results for both groups are depicted graphically in Figures 25-26.
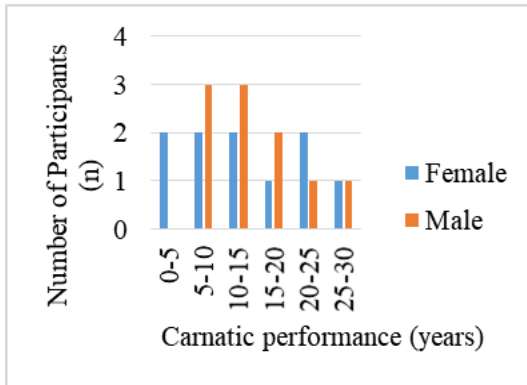
Figure 25: Performance experience: Carnatic
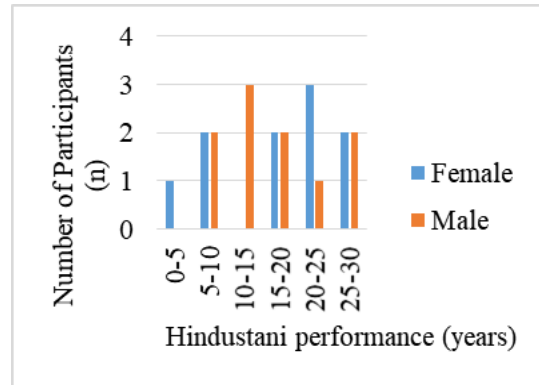
Figure 26: Performance experience: Hindustani

On average, how frequently do you sing in Indian Classical Vocal performances? (Q-35)

A significant number of Carnatic respondents (30%) reported that they sang 1-3 times a year, which was the most common response, while 25% of them sang 4-6 times a year.

Among the Hindustani respondents, 30 % of them performed 4-6 times a year, which was the most frequent response, and 25% of them sang 1-3 times a year. A single respondent reported that they had never performed so far. Results for frequency of performances are depicted for each style in Figures 27-28.
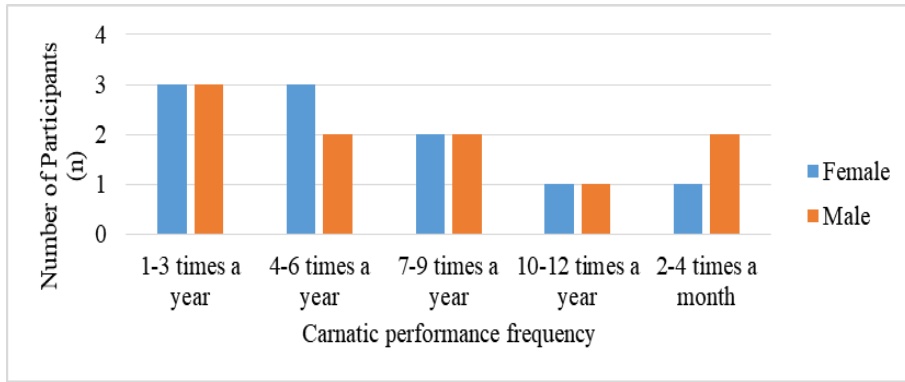
Figure 27: Performance frequency: Carnatic
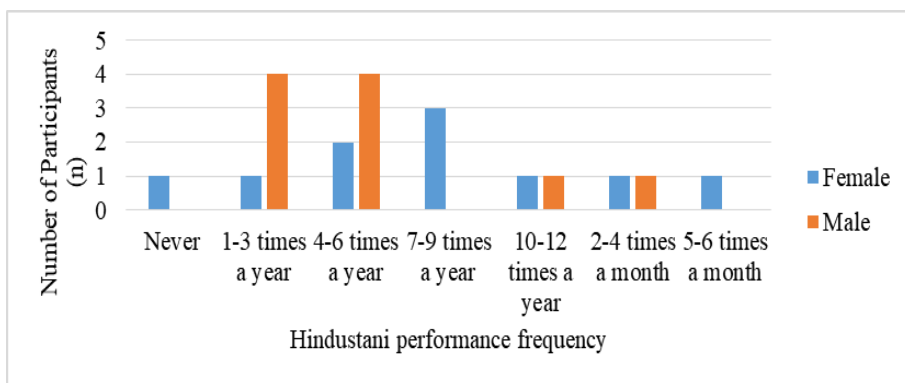
Figure 28: Performance frequency: Hindustani

How much is the input of your Guru in planning and executing a performance?

(Q-36)

A majority of the Carnatic respondents (55% of respondents) reported that they took a lot of input from their Guru in planning and executing a performance.

Among Hindustani respondents, 35% of them reported a moderate amount of input by their guru in planning and executing a performance, which was the most common response. The results are shown graphically in Figures 29-30.
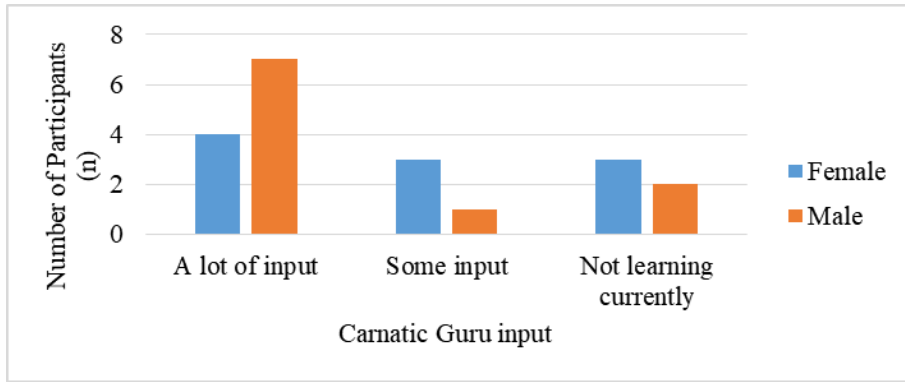
Figure 29: Input by Guru in performance planning: Carnatic
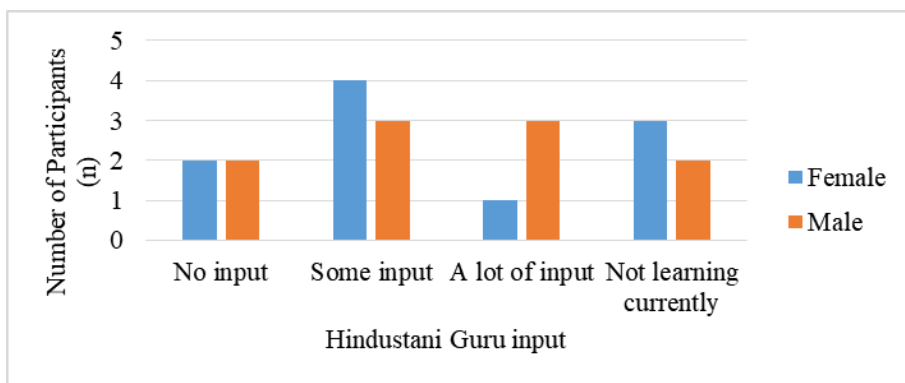
Figure 30: Input by Guru in performance planning: Hindustani

How much consideration do you give to your voice health in planning and executing a performance? (Q-37)

Of the Carnatic respondents, 70% of them reported that they gave 'a lot of consideration' to their voice health in planning and executing a performance, which was by far the most frequent response.

On the other hand, 60% of the Hindustani respondents reported giving only 'some consideration' to their voice health in a performance. Results are depicted in figures 31-32.
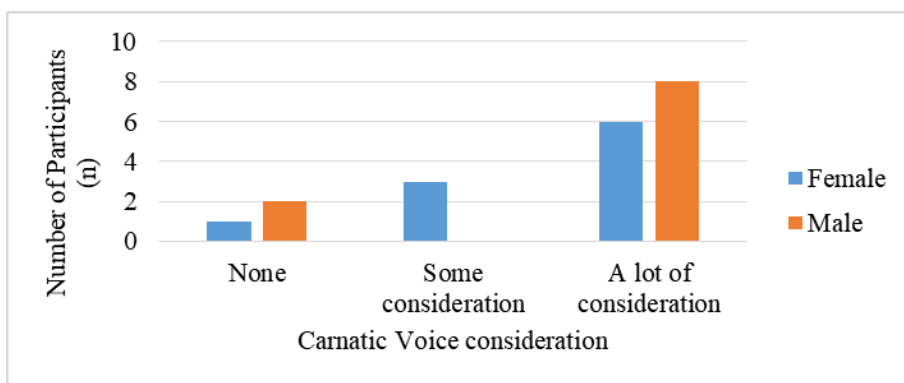
Figure 31: Voice health in performance planning: Carnatic
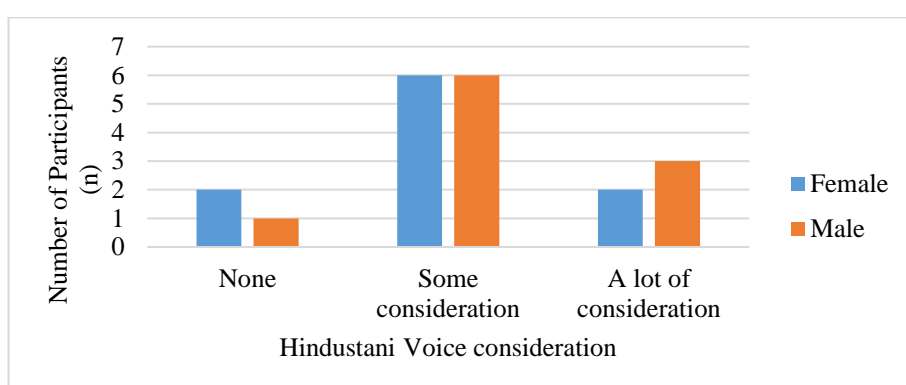
Figure 32: Voice health in performance planning: Hindustani

The Ideal Voice for Carnatic/Hindustani Singers

In this section, the questions followed a common system of numbering as they were all worded similarly for both styles of respondents (Questions 38-39).

Which of the following features should be present in an ideal singing voice, according to you? (Q-38)

Respondents were allowed to choose multiple options to answer for the features they felt were required for an ideal voice. Options were given based on the set of responses

obtained in the interview for the question asking respondents to describe the ideal voice for their chosen style of singing. Overall, 'flexibility' and 'large pitch range' were two of the most popular options, along with 'loud', which was favoured more by male respondents.

Most of the Carnatic participants (45%) agreed that the ideal singing voice for Carnatic music had to be flexible, have a large pitch range, and also be loud and melodious. Another 15% chose (females) the options 'flexible', 'large pitch range', and 'melodious' but not 'loud', on the other hand, 10% (males) emphasised only loudness and heaviness was important to the ideal singing voice. Ten percent of respondents did not believe in an ideal singing voice, and the remaining participants chose other combinations of options.

In the Hindustani set, 20% of the participants did not believe in an ideal singing voice. Among the remaining, 'large pitch range' was chosen more often, followed closely by 'flexibility'. The same common combination of options, i.e. 'flexible', 'loud', 'large pitch range', and 'melodious' was chosen by 35% of the Hindustani participants, of which all but one were male. Similarly, 20% of participants chose 'flexible', 'large pitch range', and 'sweet', and these were comprised mostly of female participants.

Do you believe that given training and practice, anyone can attain an ideal voice for singing Indian Classical Music? (Q-39)

Seventy-five percent of the Carnatic respondents felt that an ideal voice was attainable by any learner of vocal music. In the Hindustani participants, 85% of them held the same opinion.

In summary, the results of Phase II indicated that participants of different styles held different views; however, all their views were based on stringent beliefs and were strongly influenced by their respective teachers/gurus. The following results were noted among a majority of participants in each domain.

- In training, most of the Carnatic participants were continuing their musical training at the time of the survey, while most of the Hindustani singers had terminated their training. A majority of the Hindustani singers followed one or more gharanas, while most of the Carnatic participants did not follow any specific bani. Most participants in both styles chose to seek information about voice from their respective teachers and/or from public domain media sources.

- Singers of both styles practiced music almost every day, and their practice sessions were of duration between 30 minutes to 3 hours. Akaram/aakaars, practice in lower octave, and pranayama were some of the specific practice techniques carried out across both the styles.

- All the participants reported specific diet and lifestyle modifications, such as drinking warm water, avoiding cold foods, and reducing intensity and duration of speaking, with more stringent restrictions seen among the Carnatic cohort. In gender-specific vocal issues, females did not refrain from singing or practicing music during their pre-menstrual and menstrual duration, and males had not refrained from singing during their pubertal voice change, but had only adapted their singing to changing pitch range over time. A majority of Carnatic participants and a significant percentage of Hindustani participants reported of having faced voice problems in the past and most of them sought medical advice or consulted their teacher and/or family members to help resolve the same.

- Most of the surveyed participants had 5-30 years of performance experience, and most of them performed 1-6 times a year. Carnatic performers took a lot of input from their teachers in planning their performances, while Hindustani performers took less input. Also, Carnatic performers gave more priority to vocal health when planning their performances when compared to the Hindustani performers.

- Opinions regarding the ideal singing voice included characteristics like flexibility and a large pitch range. More Carnatic than Hindustani respondents considered having a loud voice as one of the ideal characteristics. Most of the participants across both the styles felt that the ideal voice for singing was attainable by anyone.

CHAPTER V

DISCUSSION

The results of the study revealed several points of interest in regard to the training, practice, vocal habits and issues, performance, and opinions of the ideal voice held by Carnatic and Hindustani singers. These will be discussed under the above-mentioned headings.

Training

In both phases of the study, all participants from both styles reported having undergone personal training under one or more 'Guru'(s). This is notably in contrast to the view expressed by one study regarding Hindustani Guru-sishya parampara that this musical oral tradition was at a crossroads, unable to survive in the modern day fast-paced life and larger economy, and was better off being replaced by a system of musical conservatories (Schippers, 2007). However, (Rama, 2008) said that this was the ideal system, a blend of the traditional 'gurukulavasa' and the modern commercialised method of imparting a skill.

Also, both Carnatic and Hindustani vocalists commonly reported starting their training between the ages of 5-10 years old, and even after 15+ years of training and being well-established in the music field, a majority of Carnatic singers said that they were still continuing their training, and moreover, met with their teachers for 1-4 hours per week even now. This indicates a large amount of material to be learnt and assimilated over a lifetime. This may provide some justification for the primarily oral tradition that is still

seen across students of Indian Classical music—given the lengthy duration of training, a student may possibly find more ease and comfort learning over the years from individual teachers rather than enrolling in an academy or a conservatory. The longer duration of training in Carnatic musicians than Hindustani can be attributed to the greater emphasis of the former on rule-based, structured singing, a greater number of these rules, as well as a much larger number of compositions of greater complexity to be learnt, which is due to the more ancient origins of this style (Durga, 2007; Upadhyay, 2010).

All the participants of the Carnatic category in the present study described a similar order of training. This is largely due to the standardised basic lessons for Carnatic music originally given by the saint-composer Purandaradasa in the 18th century (Popley, 1921).

The Hindustani participants also all gave a similar responses when asked to describe their learning process, saying that they learned one 'raag' at a time and learned a general 'aalaap' for each raag, followed by a composition, then learned how to improvise the raag based on the outline provided by the teacher. Rohrmeier and Widdess (2017) noted that the learning of Hindustani classical music had parallels to the learning of language in that nothing was taught explicitly; the student was given some 'prototypical' features of a given melody or raag and was expected to come up with something completely novel in his/her performance while still adhering to the underlying (yet untaught) grammar of the given raag. This may explain the comparatively higher number of Hindustani participants who were not under the strict

supervision of a Guru at the time of the survey, as well as the smaller duration of time per week spent with the teacher by those currently under training, indicating more independence accorded to students of Hindustani singing in the mastery of the art form.

The concept of 'gharana' was more prevalent in the Hindustani groups than the analogous concept of 'bani' in Carnatic music. This is also justifiable by the nature of the training process—as Hindustani training seemed to be more implicit and similar to first language acquisition than the structured paradigm of Carnatic music pedagogy that parallels the teaching of a new language (Schippers, 2007), it is understandable that different 'dialects' can evolve among different preceptors who try different approaches to singing and teaching music.

Unlike the Carnatic singer's idea of 'bani' which did not have any clear and consistent framework and mostly consisted of imitating a particular singer's way of delivering a composed work or following the technicalities of the composer exactly, Hindustani singers said the different gharanas had different works composed specifically for them (e.g. Kirana gharana, mostly focussing on khyal or ornament-filled compositions) different dynamics in improvisation (e.g. Patiala gharana requires quicker note transitions), different expectations for vocal pitch range (e.g. Jaipur gharana does not require the singer to traverse between a large number of octaves), and even different expected voice quality (Gwalior gharana requires a more open voice quality). All of these statements are from responses given by participants in both Phase I and Phase II of the study.

These responses are further corroborated by the statement in (Meddegoda, 2015) in which he stated, "…each gharana has developed musical individuality of voice production through training methods followed by a certain ideology of history and culture."

Among the different gharana traditions, 'Gwalior' was commonly followed by a majority of participants, which is justifiable as it is the oldest of the gharanas seen in Hindustani music today (Bhat, 2009). 'Kirana' was also followed by many, as it is the gharana that popularised the current-day form of 'khyal' singing over the older and more heavy and religious 'dhrupad' singing in Hindustani music. As easily inferred, 'gwalior' gharana is the main gharana to interest itself with 'dhrupad' style of compositions in present-day.

Both Carnatic and Hindustani participants quoted their Guru as their go-to source for information about voice culture, voice care, issues, and management. This can also be attributed to the long-standing oral tradition of music described by modern-day authors (Agarwal et al., 1999; Bhat, 2009; Schippers, 2007). Due to the conveniences of the digital age, many participants also used YouTube and audio recordings; however, they all said that this was only done to listen to different vocalists' performances and not to specifically learn about voice.

Practice

Both Carnatic and Hindustani vocalists reported high frequency of practice sessions. When it came to duration, Hindustani singers predominantly practiced for longer durations than Carnatic participants. This could be due to the more introspective, free-flowing nature of Hindustani music as opposed to the more structured approach taken in Carnatic style as described in the previous section. The specific practice most commonly followed by Carnatic and Hindustani respondents was 'akaram' or aakaars, which correlates with the findings of (Supraja & Savithri, 2007), where they found that 'akarasadagam' was practiced by 16.87% and 22.1% of Hindustani and Carnatic respondents respectively. Aakaars were much more frequently seen in male Hindustani respondents than in females, however, which is in contrast to the findings of the above mentioned study, in which aakaars were practiced by 7.14% of males and 26.6% of female respondents in Hindustani group).

Kharaj ka riyaaz was also quite common in Hindustani singers in the present study, which can be explained by the importance given to kharaj ka riyaaz in dhrupad singers (West, n.d.), who in turn are predominantly found among the Gwalior gharana. Also, kharaj ka riyaaz was more common among men, as dhrupad singing was traditionally more male-dominated and only the 'Dagar' gharana encouraged women to pursue dhrupad singing (Meddegoda, 2015).

Sustaining different notes for a long time was a practice found to be followed by many Carnatic singers in the current study; this is also a point in agreement with (Supraja & Savithri, 2007), who found that about 10% of their respondents sustained sa-pa-sa as a

warm-up during practice sessions. Further, Pranayama was also followed commonly by both styles of singers, similar to the findings of (Supraja & Savithri, 2007) who found that 43% and 63.6% of Hindustani and Carnatic singers respectively did pranayama. Only two Carnatic participants in the present study did a form of physical exercise (yoga), and six Hindustani participants reported doing physical exercise, of which four were male. Results from previous literature reports that 76% and 58% of Hindustani and Carnatic participants did physical exercises (Supraja & Savithri, 2007).

Vocal habits and issues

Among both sets of participants, the most common 'diet modification' followed to take care of the voice was 'Drinking warm water'. This was seen to be common among Carnatic singers in the study by (Boominathan et al., 2008) as well, in which 21% of singer respondents reported doing the same, as well as by (Supraja & Savithri, 2007), in which 24% of Carnatic respondents drank warm water before a performance. However, in the study by Supraja and Savithri (2007), only 14 % of Hindustani respondents had this practice, while in the present study the numbers in both sets were almost equal.

In the current study, almost none of the female participants reported any change in their singing habits before or during menstruation. This is a remarkable finding as it can represent the shift in the modern-day singer's thinking beyond taboos of the past. Further, many female participants reported that singing during their menses actually relieved the symptoms. Also, among the male respondents, most Carnatic respondents and a high number of Hindustani respondents did not change their singing habits during

adolescence. Those who did simply shifted their pitch slowly. This was reported to be done under the guidance of their guru.

More than half of the participants of the present study reported of having had voice problems in the past. This is supported by the findings of the survey by (Boominathan et al., 2008) in which 59% of the singers had voice problems, and is also the basis of the study by Arunachalam et al (2014), in which 45 Carnatic singers were seen to have voice problems. In the present study, voice problems were slightly more prevalent among Carnatic singers as opposed to Hindustani. Most of these participants said that for their voice problems they had primarily consulted their guru and/or a medical doctor. This is paralleled by the findings of the western study by (Weekly et al., 2018), in which 47% of singers surveyed chose to seek help with an otolaryngologist and 39% consulted their voice teacher.

The contingencies most commonly followed by Carnatic respondents was 'using home remedies' and 'stop singing for some time'. This trend has been seen in previous literature as well, with Boominathan et al (2008) having reported that 55% of their singer participants used traditional home remedies and 22% practiced voice rest in case of a voice problem. Also, Supraja and Savithri (2007) reported voice rest as practiced by 66% of Carnatic participants and 44% of Hindustani participants, which is very similar to the present study in that more Carnatic singers practiced voice rest than Hindustani.

Performance

Among the Carnatic group, half of the respondents had between 5 and 15 years of performance experience, with the other 10 individuals falling into the other categories. The distribution of performance experience was broader among the Hindustani participants. On the whole, Hindustani singers tended to perform slightly more often than Carnatic singers, although this generalisation is made not taking into account the varying musical 'seasons' in the north and the south of India. Carnatic singers tended to report higher amounts of teacher input during planning of a performance than Hindustani singers. This could be related to the longer durations of training in Carnatic music discussed in the first section. More Carnatic than Hindustani participants gave consideration to the status of their voice when planning a performance. This finding is surprising considering the generally higher performance duration in Hindustani music of about 2.5 to 4 hours as contrasted to 1.5 to 3 hours seen in Carnatic (as reported by participants of Phase I).

Ideal Singing Voice for Indian Classical Music

Participants in the Hindustani and Carnatic groups were asked to describe their opinion of what features were present in the ideal singing voice for their style. Most Carnatic and Hindustani respondents said that the voice should be 'flexible' and have a 'large pitch range'. It is interesting to note that these features have direct physiological correlates in terms of the speed and extent of pitch change in the laryngeal mechanism, which was subsequently followed up by most participants of both styles agreeing that attaining an 'ideal' singing voice was a matter of training and practice and not something inborn. Perhaps due to the normalisation of external amplification during

performances, participants chose 'loud' relatively less often, and even among those who chose it, there was a clear bias in favour of males in both styles. 'Large pitch range' was also chosen more often by men of both styles. This can possibly be correlated with the male larynx's higher capacity for loudness and pitch change. Less commonly, participants used more subjective terms like 'melodious' and 'sweet'. Rama (2008) emphasised the importance of a large pitch range in Carnatic musicians, specifying that there was to be little to no discernible voice register changes throughout the range. This can be correlated to the finding that many of the Carnatic participants were of the opinion that the voice should be deep/heavy, i.e. modal, throughout the range of pitches produced. The ideal Hindustani voice has been lauded on the basis of flexibility, diction, and naturalness by Radhakrishnan et al (2011). In this respect, however, only one participant mentioned 'naturalness' as an important characteristic in the current study, and none mentioned 'diction.'

Among the five domains that were explored in the study, most of them revealed findings that correlated with the literature, with some surprising findings that can be further investigated in future research. On average, Hindustani participants underwent shorter durations of training in the present study, and this was attributed to the greater extent of learning through insight seen in Hindustani musical pedagogy. The aural-oral tradition of training was also seen among all participants, and this led to most participants quoting their respective teachers as their sources for information about voice. Specific practice techniques like aakaar/akaram and practice in lower octave were seen to be common in the present study in accordance with previous studies. Most participants followed diet and lifestyle modifications as well as contingencies for voice problems that have been cited in earlier literature as well. The trends in gender-related

voice habits indicated a shift from earlier notions and traditional ideas. Finally, the ideal voice was described with characteristics that had direct physiological correlates that most participants considered to be attainable with sufficient training and practice.

CHAPTER VI

SUMMARY AND CONCLUSION

The current study aimed to develop a questionnaire to enhance understanding on the differences in vocal music pedagogy between singers trained in Carnatic and Hindustani styles of music, and then administer it on singers of both styles. This was done in two phases. In Phase I, 10 Carnatic and 8 Hindustani singers with a minimum 15 years of singing experience were interviewed in a semi-structured manner with respect to their training, practice, vocal habits and issues, performance habits, and their opinion of the ideal voice for Carnatic or Hindustani music. These responses were transcribed and based on the trend of responses per question for each style, a questionnaire was constructed and validated by 6 singers with a minimum of 5 years of formal musical training. The final questionnaire was uploaded on Google Forms with questions under the same domains. Requests for responses were sent to participants of Phase II through email and social media domains. The developed questionnaire was then administered to a total of 40 individuals (20 each of Carnatic and Hindustani, with 10 males and 10 females in each style). The responses from these participants were then compiled and converted into percentages. Finally, some inferences were drawn from the patterns observed and the results were compared to some findings seen in previous literature.

Some of the salient takeaways from this study based on the majority of participants' responses include the following:

- The personalised Guru-shishya parampara system of teaching and learning music was very much prevalent among both Carnatic and Hindustani singers.

- The training appeared to be influenced by the 'gharana' of the teacher in Hindustani music, while there was not much effect of 'bani' on the training in Carnatic singers.

- Both styles practiced training students at a very young age and training continued for multiple decades.

- Singers of both styles first preferred their guru in seeking information regarding anything voice related, be it for practice, performance, or voice health.

- In both singing traditions, practice was rigorous and it contained some traditional 'warm-ups' recommended by the guru, such as singing 'akaram' / 'aakaars'.

- There was similar importance given to using traditional methods and seeking medical advice in the event of a voice problem. However, consulting a speech-language pathologist seemed to be less popular in comparison and was sometimes even discouraged.

- Women singers did not ascribe to practices of refraining from singing before or during menstruation in both styles. Also, male singers continued their singing career during period of pubertal voice change and adapted to their new voice gradually.

- Performers in Hindustani music appeared to give moderate consideration to their voice status while performing while Carnatic singers gave a lot of consideration.

- More emphasis was placed on dynamics of singing skill over subjective perceptions of voice 'quality' or 'aesthetics' by singers in describing the ideal singing voice; also singers felt that singing can be learned effectively by anyone with training and practice.

Strengths

This is one of the first studies covering both Carnatic and Hindustani styles of music that sought to obtain information across a number of different domains related to voice culture and pedagogy.

Limitations

As this was an exploratory study, the information was wide-ranging and so a consensus could not be reached. As a result, generalisations could not be made. Also, all of the Hindustani 'gharanas' were not represented.

Future Directions

There can be attempts to draw parallels between the syllabi of Carnatic and/or Hindustani music and the information learnt by speech-language pathologists related to the singing voice. Also, the salient features of different elements of classical singing in each style can be chronicled and quantified acoustically so that speech-language pathologist may be able to devise methods to manage the needs of different singers with voice problems.

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APPENDIX I—*Questions for personal interview used in Phase I*

Training

1. How long have you been learning Carnatic/Hindustani Music?
2. Please tell me the name of your teacher, years of experience, profession and importance of singing to them?
3. At what age did you start your vocal music training?
4. Do you follow any particular bani/gharana? If so, please tell me about it?
5. Please describe the process of your training? How frequent and specify the duration are your singing classes if you are still attending them?
6. Did you have any specific stringent guidelines to be followed or refer to any external books or materials in the process of training?

Practice

7. How frequent are your practice sessions?
8. What is the duration of an average practice session?
9. Do you follow any specific practices such as warm-up, cool-down, meditation, or Pooja before and/or after a practice session?
10. Please describe your typical practice session?
11. Has your practicing regimen changed over the years?
12. How much input does your Guru provide about your practice session?
13. Apart from your Guru, where else do you get information about what to do during practice sessions?

Vocal habits

14. Do you follow any specific diet plan such as avoiding or eating certain foods/drinks to safeguard your voice?
15. Do you avoid/indulge in any particular situations to safeguard your voice?
16. Do your rest your voice prior to and/or during your period (if females)? Did you change anything about your singing during the period your voice changed in puberty (if males)?

17. Have you ever faced problems with your voice? Please describe these problems? Did you take any external treatment for these?

18. Do you have any particular practices that you use to help treat problems with your voice?

19. How much input does your Guru provide about habits to maintain your voice and/or deal with problems in your voice?

20. Apart from your Guru, where else do you get information about maintenance of voice, prevention, and treatment of voice problems?

Performance

21. How long have you been performing?

22. How frequent are your performances?

23. What is the typical duration of your performance?

24. What time do you perform usually?

25. What accompaniments do you usually have during a performance?

26. Please describe the typical structure of your vocal performance. Is it a stringent structure or an informal guideline?

27. Are there any voice-related considerations involved in planning a performance?

28. How much is the input of your Guru in planning and executing a performance?

Ideal Voice Characteristics

29. Please describe your opinion of the 'ideal' voice for Carnatic/Hindustani vocal music?

30. Are your opinions of this ideal influenced in any way by your Guru or your bani/gharana, or by any external sources?

31. During your training, did your Guru work with you specifically to meet any of these ideals? If so, in what way?

32. Do you think this ideal is fully achievable by any student of Carnatic/Hindustani music?

33. What would be your suggestions for a student of vocal music striving towards achieving this ideal?

34. Please describe your own singing voice?

APPENDIX II—*Questionnaire for assessment of vocal pedagogy in Indian Classical Singers*

This questionnaire is meant to gather information from eminent singers in Indian Classical Music on their voice training, practice, performance, voice habits and issues, and opinions of the ideal voice.

* Required

Informed Consent

This study is titled "Differences in Singing Pedagogy across vocalists Trained in Carnatic and Hindustani Styles: A Questionnaire-Based Study." It aims to develop a questionnaire to enhance understanding on the differences in vocal music pedagogy between singers trained in Carnatic and Hindustani styles of music and administer it on singers of both styles. Participation is completely voluntary. Responses and participant details will be kept strictly confidential. Do you consent to participate in this study? *

o   Yes

Demographic Data

1. Please state your name? *

2. Please state your age? *

3. What is your gender? *
    Please choose one option.
    - o   Female
    - o   Male

4. Where are you from? *

5. Please list the languages you know. *

Training History

6. What have you studied up till? *

Please choose one option.

- o School
- o Diploma
- o Bachelor's degree
- o Master's degree
- o Doctorate or further
- o Other:

7. Was your formal education in Indian Classical Music? *

Please choose one option.

- o Yes
- o No

8. If 'no', please describe your field of education.

9. Are you currently a full-time musician? *

Please choose one option.

- o Yes
- o No

10. If 'no', please describe your job apart from indian classical singing and mention how much of your time is devoted to indian classical singing.

11. How old were you when you started learning Indian Classical Singing? *

Please choose one option.

- o Less than 5 years old
- o 5-10 years old
- o 10-15 years old
- o 15-20 years old
- o Over age 20

12. How many years did you learn Indian Classical Singing? *

13. Are you still learning from a Guru? *

Please choose one option.

- o Yes
- o No

14. Did you learn from a single Guru or multiple Gurus? *

Please choose one option.

- o Just one Guru
- o Different Gurus

15. Please state the name of your Guru(s)

16. Are you primarily a Hindustani or a Carnatic Vocalist? *

Please choose one option.

- o Hindustani
- o Carnatic

Training—Hindustani

H17. Which gharana(s) do you follow? *

Please check all that apply.

- o Gwalior
- o Kirana
- o Jaipur
- o Agra
- o Patiala
- o I do not follow any particular gharana.
- o Other:

H18. Do you believe your gharana affects your voice culture? *

Please choose one option.

- o Yes
- o No

H19. If 'yes', please describe how.

H20. Please describe the process of your training briefly. *

H21. How much time per week do you currently spend in learning from a Guru? *

Please choose one option.

o   1 hour or less than 1 hour

o   1-4 hours

o   More than 4 hours

o   I am not currently learning from a Guru.

H22. Where do you get information about voice for your learning, practice habits, voice care, and managing voice problems? *

Please check all that apply.

o   Guru

o   Guru-prescribed textbooks

o   Other books

o   Other vocalists of same gharana

o   Other vocalists of different gharana

o   Youtube videos or audio recordings

o   Medical Professional (e.g. ENT Doctor)

o   Voice therapist (speech-language pathologist)

o   Other:

Practice—Hindustani

H23. How often do you practise vocal music? *

Please choose one option.

o   Everyday

o   4-6 days a week

o   1-3 days a week

o   Rarely

o   Never

H24. What is the duration of an average practice session? *

Please choose one option.

o   30 minutes to 1 hour

o   1-3 hours

o   4-6 hours

o   More than 6 hours

o   I do not practise vocal music

H25. Do you incorporate any of the following in your practice session? *

Please check all that apply.

o   Physical exercise/yoga

o   Pranayama

o   meditation

o   Kharaj ka riyaaz/mandra sapthak ka riyaaz

o   aakaars

o   omkaars

o   vocal exercises like lip trills or tongue trills

o   gargling with warm water

o   none

o   Other:

Training—Carnatic

C17. Do you follow any particular 'bani'? *

Please choose one option.

o   Yes

o   No

C18. If 'yes', please specify which bani(s).

C19. Do you believe your bani affects your voice culture? *

Please choose one option.

o   Yes

o   No

C20. If 'yes', briefly explain how.

C21. Please describe the process of your training briefly. *

C22. How much time per week do you currently spend in learning from a Guru? *
Please choose one option.
o   1 hour or less than 1 hour
o   1-4 hours
o   More than 4 hours
o   I am not currently learning from a Guru.

C23. Where do you get information about voice for your learning, practice habits, voice care, and managing voice problems? *
Please check all that apply.
o   Guru
o   Guru-prescribed textbooks
o   Other books (e.g. Sangeetha ratnakara, natya shastra, etc)
o   Listening to other vocalists
o   Youtube videos or audio recordings
o   Medical Professional (e.g. ENT Doctor)
o   Voice therapist (Speech-language pathologist)
o   Other:

Practice—Carnatic

C24. How often do you practise vocal music? *
Please choose one option.
o   Everyday
o   4-6 days a week
o   1-3 days a week
o   Rarely
o   Never

C25. What is the duration of an average practice session? *

Please choose one option.

o	30 minutes to 1 hour

o	1-3 hours

o	4-6 hours

o	More than 6 hours

o	I do not practise vocal music

C26. Do you incorporate any of the following in your practice session? *

Please check all that apply.

o	yoga

o	Pranayama

o	akaaram practice in basic varsais

o	sustaining different notes for a long time

o	mandhra sthayi practice in the early morning

o	vocal exercises like lip or tongue trills

o	None.

o	Other:

Vocal hygiene habits and Vocal Issues

27. Do you do any of the following to take care of your voice? *

Please check all that apply.

o	Drinking warm water

o	Gargling with warm water

o	Avoiding cold foods/drinks

o	Avoiding oily foods

o	Avoiding spicy foods

o	Avoiding sour foods

o	Avoiding hot foods

o	Avoiding aerated drinks (e.g. soda)

o	Avoiding sweet foods

o	Avoiding caffeinated drinks (e.g. coffee or tea)

o	Avoiding milk

o   Avoiding speaking loudly

o   Avoiding speaking for extended periods of time

o   Avoiding dust

o   None

o   Other:

28. If you are a woman who has not yet attained menopause, do you avoid singing before or during your menses?
Please choose one option.

o   Yes

o   No

29. If you are a man, during the time your voice pitch changed in adolescence did you change your singing habits in any way?
Please choose one option.

o   No

o   Yes

30. If 'yes', please describe briefly.

31. Have you ever faced problems with your voice? *
Please choose one option.

o   Yes

o   No

32. If 'yes', whom did you consult for advice?

Please check all that apply.

o   Guru

o   Doctor

o   Family members

o   Friends

o   Voice therapist (Speech-language pathologist)

o   Internet search

o   I did not consult anyone

o   Other:

33. What would you do in case of a voice problem? *

Please check all that apply.

o   Stop singing for some time

o   Use home remedies

o   Go to a medical doctor

o   Go to homeopathic/ayurvedic doctor

o   Go to a voice therapist

o   Nothing

o   Other:

Performance

34. How many years have you been a performing artist? *

35. On average, how frequently do you sing in Indian Classical Vocal performances? *

Please choose one option.

o   1-3 times a year

o   4-6 times a year

o   7-9 times a year

o   10-12 times a year

o   2-4 times a month

o   5-6 times a month

o   More than 6 times a month

o   Other:

36. How much is the input of your Guru in planning and executing a performance? *

Please choose one option.

o   No input

o   Some input

o   A lot of input

o   I am not currently learning under a Guru.

37. How much consideration do you give to your voice health in planning and executing a performance? *

Please choose one option.

o   None

o   Some consideration

o   A lot of consideration

The Ideal Singing Voice

38. Which of the following features should be present in an ideal singing voice, according to you? *

Please check all that apply.

o   flexibility

o   deep/heavy

o   large pitch range

o   loud

o   melodious

o   sweet

o   I do not believe there is any one ideal singing voice.

o   Other:

39. Do you believe that given training and practice, anyone can attain an ideal voice for singing Indian Classical Music? *

Please choose one option.

o   Yes

o   No

APPENDIX III—*Glossary of Terms*

Term	Pronunciation	Definition
Akaram, Akarasadagam/Aakaar, Ukaar, Ikaar	*ʌka:rʌm, ʌka:rʌsa:ɖʌgʌm/a:ka:r, u:ka:r, i:ka:r*	Singing different frequencies sequentially while phonating the vowel 'a' (or any other vowel in case of ukaars, or ikaars)
Alaap/Alapana	*a:la:p/a:la:pʌna*	A non-rhythmic creative form of singing in which the singer creates a melody in a particular raga in front of an audience without adding meaningful lyrics
Alankar	*ʌlʌŋka:r*	Literally meaning 'ornament', singing different note combinations by skipping notes
Anuswara	*ʌnʊswʌra:*	Swaras which should not be present in a particular raga
Atharva, Yajur, Rig, Sama Veda	*ʌʈʌrvʌ, jʌdʒʊr, rɪg, sa:mʌ ve:ɖa*	The four Vedas, important scriptures in the religion Hinduism
Bani	*ba:ni*	A stylistic way of singing in Carnatic music often based on the way a given musician sings
Bhairav/Maya Malava Gowla	*bʰʌɪrʌv/ma:ja: ma:ʃʌvʌ gʌʊʃʌ*	Maya malava gowla in Carnatic and Bhairav in Hindustani are the names of the raga in which music instruction typically starts. The scale is characteristic because it has four pairs of Swaras separated by a half-note, with each pair separated by a full note

Bhajan	*bʰʌd͡ʒʌn*	A short, simple devotional composition
Bhavam	*bʰa:vʌm*	Emotion and prosody in music
Gamak/Gamaka	*gʌmʌk/gʌmʌka*	Different forms of ornamentation in Hindustani/Carnatic music usually seen in the dynamics of movement between two notes
Ganapathi	*gʌnʌpʌʈi*	A Hindu deity traditionally worshipped at the beginning of any endeavour
Geetha	*gi:ʈa*	Short, notated compositions that are the first compositions with lyrics taught to beginners in Carnatic music following the teaching pf different Varsais.
Gharana	*gʰʌra:na*	A musical tradition or lineage in Hindustani music. Different gharanas may include Gwalior, Patiala, Kirana, Dagar, Jaipur,
Ghatam	*gʰʌtʌm*	A percussion instrument in Carnatic consisting of a clay and metal pot that is beaten by the fingers
Guru	*gʊru*	Sanskrit term for teacher-preceptor, noted in Hindu culture to be near to deity status
Guru-Shishya Parampara	*gʊru ʃiʃya pʌrʌmpʌra*	The way of teaching traditional Indian art forms in which the art is passed down between generations of gurus and students

Gurukula	*gʊrukʊla*	An early of education in India in which the student lived with the teacher full time and imbibed knowledge over many years of observation of the guru
Harmonium	*harmonɪʌm*	Pump organ
Hindustani	*hɪnd̪ʊst̪ani*	The classical form of music prevailing in the northern region of India
Kanjira	*kʌnd͡ʒira*	A small handheld drum used as a percussive accompaniment in Carnatic concerts
Carnatic	*kʌrnatɪk*	The classical form of music prevailing in the southern region of India
Kashayam	*kʌʃajʌm*	A bitter syrup mixed and prescribed in traditional Ayurvedic medicine
Kattai	*kʌt:ʌɪ*	The Carnatic equivalent of the different lettered pitches seen in western music. The western pitch 'C' is 1 kattai, C# is 1.5 kattai, and so on. There are kattais (7 kattai= western note 'B')
Kelvi Gnyanam	*ke:ɭvi ɲa:nʌm*	Tamil phrase meaning 'learning by listening'
Khar	*kʰar*	A traditional Assamese ingredient made by filtering water through ashes of raw plantain
Khyal	*kʰʌjal*	A major genre in Hindustani music that brings emphasis on

		the artist's creativity as opposed to older more structured forms like dhrupad
Krithi/Keerthana	*krɪʈi/kiːrʈʌna*	A composition in Carnatic music which generally consists of an initial stanza called the pallavi, often followed by an anupallavi, and ends with one or more 'charanams', with the first line of the pallavi sung in between each of these sections. A form of pre-composed (kalpitha) music
Kutcheri	*kʌtʃːeri*	A Tamil word for a Carnatic music concert
Laya	*lʌja*	The tempo of a composition in Indian classical music
Mandhra Sapthak/Kharaj ka Riyaaz	*mʌnɖrʌ sʌpʈʌk/kʰʌrʌd͡ʒ ka rɪjaːz*	The octave below the middle (madhya) octave is the mandra sapthak, practicing sustaining swaras in this octave (usually in the morning) is known as mandhra sapthak ka riyaaz of kharaj ka riyaaz
Mangalam	*mʌŋgʌʃʌm*	A short piece sung at the end of a Carnatic concert marking the end
Manodharma/Kalpana Sangeetham	*mʌnodʰʌrma/kʌlpʌna sʌŋgiʈʌm*	Any of the creative, improvised forms of music produced spontaneously by an artist in Carnatic music. Examples include alapana, tanam, neraval, kalpana swaras

Maqam	*mʌʔɔm*	A Persian style of music characterised by melodic improvisation with less emphasis on the rhythmic aspect
Morsing	*morsɪŋg*	A small stringed percussion instrument held in the mouth while playing, used as an accompaniment in Carnatic concerts
Mridangam	*mrʊɖʌŋgʌm*	A double convex two-sided drum of wood and animal skin played with the finger tips and palms, used in Carnatic concerts
Neraval	*nɛrʌvʌl*	A form of manodharma sangeetham in which a single lyrical line of a song is sung in a number of improvised tunes during a performance
Omkaars	*o:mka:r*	Chanting of sound 'om'
Padandharam	*pa:da:nɖʌrʌm*	The learned tradition with respect to specific compositions in Carnatic music
Pranayama	*pra:na:ja:ma*	Literally meaning Prana: life force + Yama: control, the practice of controlling life force by controlling one's breath, yogic breathing exercises
Purandaradasa	*pʊrʌnɖʰʌrʌda:sa*	An eminent 18th century composer of Carnatic music from Karnataka, the first person to provide the basic lessons including the varsais and the

		short 'geethas', known as the 'Pitamaha' or great forefather of Carnatic music
Ragam/Raga	*ra:gʌm/ra:ga*	Technically the specific combinations of different notes to evoke a particular musical idea, consisting of rules of which notes can be present, what phrases can and cannot be present, and the different dynamics between the notes for each raga
Ragam-Tanam-Pallavi	*ra:gʌm ta:nʌm pʌl:ʌvi*	A Carnatic musical piece in which the artist begins with an alapana, moves on to a tanam, and concludes with a pallavi of a song including neraval and kalpana swaras for the pallavi
Rasa	*rʌsa*	Mood in music, nine common moods are present (navarasas)
Rasam	*rʌsʌm*	A traditional South Indian gravy made of lentils, herbs, and spices, meant to soothe the stomach and the throat, usually eaten mixed with rice
Sadhana/Riyaaz	*sa:ḏʰʌna/rɪja:z̤*	Practice of music
Sangathi	*sʌŋgʌṯi*	A composed variation in the tune of a line of a song, a particular line of a song may have two or more sangathis, and each is sung twice
Saptaswaras--Sa, Ri, Ga, Ma, Pa, Dha, Ni	*sʌpṯʌswʌra:s Sa, Ri, Ga, Ma, Pa, Dha, Ni*	The seven 'natural notes' in Indian classical music, each of

		with has 2 or 3 variations apart from 'sa' and 'pa'
Sarangi	*sa:rʌŋgi*	A stringed instrument often used in Hindustani Classical Music
Sargam	*sʌrgʌm*	Note names 'sa, ri, ga, ma, pa, da, ni, sa' in Hindustani music
Shruthi/Sur	*ʃrʊʈi/sʊr*	A pitch in Indian classical music
Sthayi	*sʈʰa:ji*	An octave in Carnatic music
Swara	*swʌra*	A note in Indian classical music
Swarajathi	*swʌrʌjʌʈi*	A structured composition in Carnatic music taught after teaching geethas
Taan	*ʈa:n*	Fast-tempo tonal patterns sung as a part of improvisational music in a Hindustani concert
Tabla	*ʈʌbla*	A pair of drums made of wood with a membrane stretched over the surface played as a percussive accompaniment in a Hindustani concert
Tala	*ʈa:la*	Rhythm in Indian Classical Music
Talim	*ʈa:li:m*	The learning and teaching of music according to the Guru-Shishya tradition in Hindustani music
Tanam	*ʈa:nʌm*	An improvisational piece in Carnatic music sung in the form of semi-rhythmic syllables 'nom-tom-tom' meant to sound similar to the plucking of veena strings

Tanpura	*tʌnpura*	A stringed instrument that plays a steady drone of the base shruthi
Thani Avarthanam	*ʈʌni a:vʌrʈʌnʌm*	A rhythmic piece of different laya patterns improvised by a Carnatic percussionist during a performance
Thillana	*ʈɪl:a:na*	A lively composition of a fast tempo with syllables of 'tala' sung at the end of a Carnatic performance, tailored specifically for dance
Tukda	*ʈʊkda*	Literally meaning 'a little piece', a lighter composition sung towards the end of a Carnatic concert
Varnam	*vʌrnʌm*	A structured composition in Carnatic music taught at the intermediate level, also sung at the beginning of concerts
Varsais	*vʌrsʌɪ*	Initial composed basic note combinations taught to beginners in Carnatic music
Vistar	*vɪsʈa:r*	Improvised music in the Hindustani genre, e.g. alaap, taans