

Therapeutic Aspects of Indian Classical Music

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Abstract

In the context of Music Therapy, the Western Music is much more popular as compared to the Indian Classical Music. The author argues that the subjectivity of Indian classical music acts as a barrier to universality and hence is this disparity. By identifying the correspondence between the Western musical notes and the Indian musical notes the author tried to conjecture that the prevalent therapeutic practices of Western Music, to some extent, are equally applicable/ extendable to Indian music also.

Keywords: Musical notes, svara, raaga, disease, healing, frequency, harmonic ratios

Introduction: As per Indian mythology the primordial inmate of the Universe, called adipurusha, is Lord Shiva. He holds the mystic Damaru in his hand. The fourteen different sounds of this Damru are the fourteen Maaheshvara-Sutra or Shiva-Sutra encrypted by Grammarian Panini from where the Deva-vaani i.e. Sanskrit Language originated. The Damaru, a symbol of conjunction of prakriti and purusha, is considered to be the first musical instrument. Many other deities/ mythological characters are also known to be associated with some musical instruments e.g. Lord Krishna plays flute, Lord Vishnu holds the conch, Vaagdevi Sarasvati has vina in her hands, Muni Naarada keeps ikatara and so on. It is also believed that the very first veena, nowadays called Rudra-Veena, was created by Lord Shiva while embodying his sleeping wife Devi Paarvati. Numerous examples are available in literature which convincingly asserts that the Indian music is not merely mathematical calculations but has divinity at the backdrop.

As per Panchamsaara Samhitaa [13] the music is a conjunction of 'dhaatu' i.e. naada (sound) and 'maatu' i.e. akshara samooha (collection of syllables). The word 'naada' is composed of 'naa' and 'da' where 'naa' represents prana (breathe) known as vital force and 'da' is the agni or fire i.e. heat energy of the body [12]. In this sense naada is a consequence of interaction of vital force and the heat of the body. The movement of prana i.e. the vital force of the body is due to the vaata tattva (i.e. air or wind). When this air (vaata) strikes different parts of the body the struck sound, called aahata naada, is produced. This aahata naada is believed to be the manifestation of the anaahata naada (unstruck sound) which is the virtue (guna) of ether i.e. aakaasha-tattva, one of the pancha-mahaabhoota (five elements). The other four elements inherit the qualities of ether. Since the human body is composed of the said pancha-

mahaabhoota so the unstruck sound is inherited by each individual but remains concealed and hence cannot be perceived by the physical senses. This is called paraa-vaak. Only the learned yogi-s may have experienced its presence while meditating but its manifestation in the form of aahata naada i.e. the vaikhari vaani is, in fact, the communicative language used in worldly affairs.

Every sound, whether it is aahata or anaahata, is a result of vibrations only. Unstruck sound is the result of vibrations of the ether while struck sounds are vibrations of the air. Struck sounds may further be grouped as lettered i.e. varnaatmaka and unlettered i.e. dhvanyaatmaka. Both these sounds have equal importance in music. The sounds produced by the musical instruments are all unlettered sounds initially but we give them the words/letters e.g. dhaa-dhin-dhin-dhaa are the words/letters identified in the sound of tabla, daa-raa-draa are the bol (words) of sitar and so on. Singing lyrics, obviously, is the form of lettered sounds.

The sound vibrations travel in the form of waves to reach to the ears of listeners. Since our inception till the time of death we experience these vibrations - whether inside the womb or in the outside world. Conception is the very first vibration which everyone encounters. In fact the whole process of gestation, responsible for creation of this Universe, is nothing but vibrations only. The presence of bodily vibrations is a symbol of life. The heartbeat, pulsation (spandana) in pulse (naadi), burping, respiration – all are either producing or are by-products of vibrations of the air (vaata). The medical practitioners in western world have tried to identify the frequencies of these vibrations for various organs to detect and cure the diseases. Disturbance in the regularity i.e. frequency of any organ is surely an indication of some disease. A lot of alternate healers use music therapy, vibrational therapy, tuning forks, acupressure, acupuncture, meridian therapy, chi-energy method... etc. where the organ frequencies play vital role.

In the coming pages, the frequencies of western musical notes have been approximated to Indian musical notes to look into the applicability of Indian Music via Western music. In the alternate healing methods, the use of western music is prominently seen but “Does the Indian music equally applicable for the purpose?” is the question to be discussed yet.

Notations and terminology used: Throughout the discussion, unless stated otherwise, musical notes are the North Indian Classical Musical notes (svara). These are Shadja (Sa), Rishabha (Ri), Gaandhaara (Ga), Madhyama (Ma), Panchama (Pa), Dhaivata (Dha) and Nishaada (Ni). The word ‘svara’ translated to ‘note’ is not an exact translation because the pitch for the ‘note’ is supposed to be fixed but for ‘svara’ of Indian music it’s not true [12]. The pitch of the fundamental note is always the choice of the performer and all other svara-s of that scale bear a fixed relation with that fundamental note. With this reservation the word ‘note’ is being used for ‘svara’ in this paper.

Each musical note is supposed to have a definite shruti-sthaan (microtonal place) in a heptad (saptak). There are varied views available in literature regarding shruti-sthaan of svara but the

most popular one among modern musicologists is the pattern of 4, 3, 2, 4, 4, 3, 2 shruti intervals due to Shaarangadeva [12]. Sa and Pa are immovable notes (achala svara) i.e. they always remain pure and their modified forms do not exist while Ri, Ga, Dha and Ni can be softer (flatter) than their pure form i.e. they can be sung/played at a lower shruti -sthaan and are called komala svara. Ma cannot be flat. Its modified form is sharp (teevra). The svara in their original form are called shuddha svara (pure notes) while komala or teevra svara are called vikrita svara (modified notes). Throughout discussion, Capital first letters denote pure notes while the small first letters are the modified notes. So all twelve notes (including pure as well as modified notes) in aarohi karma i.e. in ascending order are:

Sa, ri (komal), Ri (shuddha), ga (komal), Ga (shuddha), Ma (shuddha), ma (teevra), Pa, dha (komal), Dha (shuddha), ni (komal), Ni (shuddha)

The capital letters A, B, C, D, E, F and G denote the Western Musical notes with symbol 'b' used for flat notes and '#' stands for sharper ones.

A raaga is a permutation-combination of a minimum of five to seven notes out of a total of twelve - seven pure (shuddh) and five modified (vikrita) notes. In any raaga the most frequently used note is called the vaadi svara while the note which is used much frequently but less than that of vaadi svara is the samvaadi svara. All other notes of a raaga are called anuvaadi svara. Wherever a range is mentioned in the table(s) in the coming sections, it means the given frequency matches at some shruti-sthaan within the given range. There are practices of using varied shruti-sthaan for modified notes in different raagas e.g. raaga Darbaari use modified gaandhaara of flat third shruti while raaga Bhairava has modified gaandhaara of flat second shruti.

Frequencies of Indian Musical notes: As mentioned earlier, in Indian music, the performer is free to choose her/his scale as the basic tonic. The chosen basic shadja (Sa) generates other svara-s based on specific ratios usually the harmonic ratios. In Indian music they are sub-grouped in 22 shruti-s. But mathematically there can be many ratios in any interval due to density theorem for real numbers. As discussed by Daniélou [4] only 53 harmonic ratios are possible. But Table I enlists the frequencies and the ratios with step size 0.01 just because our discussions may need some intermediate values also. Some ratios may not exist harmonically but do exist mathematically so calculated frequencies may not have ratios mentioned in the column of harmonic ratios against these values. Here two basic tonics of middle octave, at 264 Hz and 256 Hz have been considered to compute the frequencies of notes in the higher, middle and lower and twice lower scale.

Table I: Frequencies of ratios with step-size 0.01

Indian Musical Note	Harmonic Ratios	Ratios in decimals	Higher Scale	Middle Scale	Lower Scale	Higher Scale	Middle Scale	Lower Scale
Shadaj	1	1	528.00	264.00	132.00	512.00	256.00	128.00
	81/80	1.01	534.60	267.30	133.65	518.40	259.20	129.60
	128/125	1.02	540.67	270.34	135.17	524.29	262.14	131.07
	31/30	1.03	545.60	272.80	136.40	529.07	264.53	132.27
	25/24	1.04	550.00	275.00	137.50	533.33	266.67	133.33
	256/243	1.05	556.25	278.12	139.06	539.39	269.70	134.85
		1.06	559.68	279.84	139.92	542.72	271.36	135.68
	16/15	1.07	563.20	281.60	140.80	546.13	273.07	136.53
	27/25	1.08	570.24	285.12	142.56	552.96	276.48	138.24
	135/124	1.09	574.84	287.42	143.71	557.42	278.71	139.35
	800/729	1.10	579.42	289.71	144.86	561.87	280.93	140.47
rishabh	10/9	1.11	586.67	293.33	146.67	568.89	284.44	142.22
		1.12	591.36	295.68	147.84	573.44	286.72	143.36
Rishabh	9/8	1.13	594.00	297.00	148.50	576.00	288.00	144.00
	8/7	1.14	603.43	301.71	150.86	585.14	292.57	146.29
	15/13	1.15	609.23	304.62	152.31	590.77	295.38	147.69
	93/80	1.16	613.80	306.90	153.45	595.20	297.60	148.80
	75/64	1.17	618.75	309.38	154.69	600.00	300.00	150.00
		1.18	623.04	311.52	155.76	604.16	302.08	151.04
	32/27	1.19	625.78	312.89	156.44	606.81	303.41	151.70
gaandhaar	6/5	1.20	633.60	316.80	158.40	614.40	307.20	153.60
	75/62	1.21	638.71	319.35	159.68	619.35	309.68	154.84
	243/200	1.22	641.52	320.76	160.38	622.08	311.04	155.52
	100/81	1.23	651.85	325.93	162.96	632.10	316.05	158.02
		1.24	654.72	327.36	163.68	634.88	317.44	158.72
Gaandhaar	5/4	1.25	660.00	330.00	165.00	640.00	320.00	160.00
		1.26	665.28	332.64	166.32	645.12	322.56	161.28
	19/15	1.27	668.80	334.40	167.20	648.53	324.27	162.13
	32/25	1.28	675.84	337.92	168.96	655.36	327.68	163.84
	31/24	1.29	682.00	341.00	170.50	661.33	330.67	165.33
	125/96	1.30	687.50	343.75	171.88	666.67	333.33	166.67
		1.31	691.68	345.84	172.92	670.72	335.36	167.68
	320/243	1.32	695.31	347.65	173.83	674.24	337.12	168.56
Madhya	4/3	1.33	704.00	352.00	176.00	682.67	341.33	170.67

ma								
		1.34	707.52	353.76	176.88	686.08	343.04	171.52
	27/20	1.35	712.80	356.40	178.20	691.20	345.60	172.80
		1.36	718.08	359.04	179.52	696.32	348.16	174.08
	512/375	1.37	720.90	360.45	180.22	699.05	349.53	174.76
	62/45	1.38	727.47	363.73	181.87	705.42	352.71	176.36
	25/18	1.39	733.33	366.67	183.33	711.11	355.56	177.78
		1.40	739.20	369.60	184.80	716.80	358.40	179.20
madhya ma								
	45/32	1.41	742.50	371.25	185.63	720.00	360.00	180.00
	64/45	1.42	750.93	375.47	187.73	728.18	364.09	182.04
		1.43	755.04	377.52	188.76	732.16	366.08	183.04
	36/25	1.44	760.32	380.16	190.08	737.28	368.64	184.32
	90/62	1.45	766.45	383.23	191.61	743.23	371.61	185.81
	19/13	1.46	771.69	385.85	192.92	748.31	374.15	187.08
		1.47	776.16	388.08	194.04	752.64	376.32	188.16
	40/27	1.48	782.22	391.11	195.56	758.52	379.26	189.63
		1.49	786.72	393.36	196.68	762.88	381.44	190.72
Pancham a								
	3/2	1.50	792.00	396.00	198.00	768.00	384.00	192.00
		1.51	797.28	398.64	199.32	773.12	386.56	193.28
	243/160	1.52	801.90	400.95	200.48	777.60	388.80	194.40
		1.53	807.84	403.92	201.96	783.36	391.68	195.84
	192/125	1.54	811.01	405.50	202.75	786.43	393.22	196.61
	31/20	1.55	818.40	409.20	204.60	793.60	396.80	198.40
	25/16	1.56	825.00	412.50	206.25	800.00	400.00	200.00
		1.57	828.96	414.48	207.24	803.84	401.92	200.96
	128/81	1.58	834.37	417.19	208.59	809.09	404.54	202.27
		1.59	839.52	419.76	209.88	814.08	407.04	203.52
dhavata	8/5	1.60	844.80	422.40	211.20	819.20	409.60	204.80
	50/31	1.61	851.61	425.81	212.90	825.81	412.90	206.45
	81/50	1.62	855.36	427.68	213.84	829.44	414.72	207.36
		1.63	860.64	430.32	215.16	834.56	417.28	208.64
		1.64	865.92	432.96	216.48	839.68	419.84	209.92
	400/243	1.65	869.14	434.57	217.28	842.80	421.40	210.70
		1.66	876.48	438.24	219.12	849.92	424.96	212.48
Dhavata	5/3	1.67	880.00	440.00	220.00	853.33	426.67	213.33
		1.68	887.04	443.52	221.76	860.16	430.08	215.04
	27/16	1.69	891.00	445.50	222.75	864.00	432.00	216.00
		1.70	897.60	448.80	224.40	870.40	435.20	217.60
	12/7	1.71	905.14	452.57	226.29	877.71	438.86	219.43
	31/18	1.72	909.33	454.67	227.33	881.78	440.89	220.44

		1.73	913.44	456.72	228.36	885.76	442.88	221.44
	125/72	1.74	916.67	458.33	229.17	888.89	444.44	222.22
		1.75	924.00	462.00	231.00	896.00	448.00	224.00
	225/128	1.76	928.13	464.06	232.03	900.00	450.00	225.00
		1.77	934.56	467.28	233.64	906.24	453.12	226.56
	16/9	1.78	938.67	469.33	234.67	910.22	455.11	227.56
		1.79	945.12	472.56	236.28	916.48	458.24	229.12
nishaada	9/5	1.80	950.40	475.20	237.60	921.60	460.80	230.40
	29/16	1.81	957.00	478.50	239.25	928.00	464.00	232.00
	729/400	1.82	962.28	481.14	240.57	933.12	466.56	233.28
		1.83	966.24	483.12	241.56	936.96	468.48	234.24
		1.84	971.52	485.76	242.88	942.08	471.04	235.52
	50/27	1.85	977.78	488.89	244.44	948.15	474.07	237.04
		1.86	982.08	491.04	245.52	952.32	476.16	238.08
		1.87	987.36	493.68	246.84	957.44	478.72	239.36
Nishaada	15/8	1.88	990.00	495.00	247.50	960.00	480.00	240.00
		1.89	997.92	498.96	249.48	967.68	483.84	241.92
	243/128	1.90	1002.3 8	501.19	250.59	972.00	486.00	243.00
		1.91	1008.4 8	504.24	252.12	977.92	488.96	244.48
	48/25	1.92	1013.7 6	506.88	253.44	983.04	491.52	245.76
		1.93	1019.0 4	509.52	254.76	988.16	494.08	247.04
	31/16	1.94	1023.0 0	511.50	255.75	992.00	496.00	248.00
	125/64	1.95	1031.2 5	515.63	257.81	1000.00	500.00	250.00
		1.96	1034.8 8	517.44	258.72	1003.52	501.76	250.88
		1.97	1040.1 6	520.08	260.04	1008.64	504.32	252.16
	160/81	1.98	1042.9 6	521.48	260.74	1011.36	505.68	252.84
		1.99	1050.7 2	525.36	262.68	1018.88	509.44	254.72
Sa (next scale)	2/1	2.00	1056.0 0	528.00	264.00	1024.00	512.00	256.00

Table II: Frequencies of human body parts/constituents and corresponding musical notes

Organ	Frequency [15]	Western note [15]	Indian note (Sa at 264Hz)
Blood	321.9	E	ga < 321.9 < Ga
Adrenals	492.8	B	ni < 492.8 < Ni
Kidney	319.88	Eb	ga < 319.88 < Ga
Liver (double)	317.83	Eb	ga
Bladder	352	F	Ma
Intestine	281	C#	ri
Lungs	220	A	Dha (lower octave)
Colon	176	F	Ma (lower octave)
Gall Bladder	164.3	E	Ga (lower octave)
Pancreas	117.3	C#	ri (twice lower octave)
Stomach	110	A	Dha (twice lower octave)
Brain	315.8	Eb	ga
Fat Cells	295.8	C#	Ri
Muscles	324	E	ga < 324 < Ga
Bone	418.3	Ab	Pa < 418.3 < dha

Table III: Frequencies of Chakra Energy Centers of our Body [15], [6]

Chakra	Reference [15]		Indian note (Sa = 256Hz)	Indian note (Sa = 264Hz)	Reference [6]	
	frequency	Western note			Western note	Indian note
Crown	480	B	Ni	ni < 480 < Ni	B	Ni
Third Eye	448	A	Dha < 448 < ni	Dha < 448 < ni	A	dha
Throat	384	G	Pa	ma < 384 < Pa	G	Pa
Heart	341	F	Ma	Ga < 341 < Ma	F	Ma
Solar Plexus	320	Eb	Ga	ga < 320 < Ga	E	Ga
Diaphragm	315	D#	ga < 315 < Ga	ga	D	Ri
Root	256	C	Sa	ni < 256 < Sa	C	Sa

Wieder [14] identified the frequencies of vertebrae of humans and Simone Straub [17] enlists the organ connection along with the possible physical problems of these vertebrae. Table IV gives combined information along with the approximate corresponding Indian musical notes. Here C1 to C7 represent the vertebrae of Cervical Spine, T1 to T12 are of Thoracic Spine and L1 to L5 are of Lumbar Spine. According to table I this frequency measure is almost half of

the usually considered tonic at 256 Hz. In other words, these frequencies are the frequencies of musical notes with lower scale.

Table IV: Frequencies of Vertebrae and related disorders

Vertebrae	Frequency	Equivalent Indian Musical Note (Sa=256Hz)	Organ Connection	Possible physical problems
C1	130.81	Less than Sa of lower scale i.e. svara of twice lower scale	Head, optical nerve, brain	Head-aches, migraines, high blood, chronic tiredness, dizziness. Paralysis due to irregular circulation in brain
C2	146.8	ri	Eyes, tongue, ears, sinuses	Sinus problem, eye trouble, deafness, ear pains
C3	164.81	ga < 164.81 < Ga	Ears, teeth, facial nerves	Pain in facial nerves, spots, acne, tinnitus, toothache, bad teeth, plaque, bleeding gums, neuralgia
C4	174.61	Ga < 174.61 < Ma	Nose, mouth, lips, ears, mandibular joint, throat	Constant cold, loss of hearing, chapped lips, cramped lip muscles, adenoids, catarrh
C5	196.00	ma < 196.0 < Pa	Cervical muscles, throat, neck	Hoarseness, sore throat, chronic cold, laryngitis
C6	220.20	Dha	Acromio-clavicular joint, shoulder, tonsils, neck	Tonsillitis, croup, stiff neck, upper arm pains, whooping cough, goiter
C7	246.94	ni < 246.94 < Ni	Thyroid gland, elbow, sterno-clavicular joint	Disease of the thyroid gland, colds, bursitis in the shoulder or elbow, depression, fear
T1	130.81	Less than Sa of lower scale i.e. svara of twice lower scale	Shoulder, wrist, hand, neck, lower arm, fingers	Shoulder pains, neck cramps, lower arm/hand pains, ligament inflammations, fury feeling in the fingers
T2	146.8	ri	Heart, blood vessels, chest	Heart trouble, disruption in rhythm, fears, chest pain
T3	164.81	ga < 164.81 < Ga	Lung, skin,	Bronchitis, influenza,

			breasts, chest, mammary gland	pleurisy, pneumonia, cough, breathing difficulties, asthma, disruption in chest region
T4	174.61	Ga < 174.61 < Ma	Gallbladder, tendons, ligaments	Trouble in gallbladder, gall stones, jaundice, headaches on one side (from the gallbladder meridian)
T5	196.00	ma < 196.0 < Pa	Liver, circulatory system, immune system, tendons, ligaments	Disruption in liver, low blood, anemia, fatigue, shingles, circulatory weakness, arthritis
T6	220.20	Dha	Stomach, muscles, pancreas	Stomach and digestion problems, heartburn, diabetes
T7	246.94	ni < 246.94 < Ni	Duodenum, stomach, pancreas, muscles	Duodenal ulcers, stomach complaints, hiccups, possible lack of vitamins, feeling of weakness
T8	138.57	Sa < 138.57 < ri	Spleen, blood, muscles	Spleen problems, weakness in immune system
T9	155.56	Ri < 155.56 < ga	Adrenal gland	Allergies, nettle rash
T10	185.00	Ma < 185.0 < ma	Kidney, bones	Kidney problem, salt cannot get out, chalked –up arteries, chronic tiredness
T11	207.65	Pa < 207.65 < dha	Skin, kidney, urinary track, bones	Skin disease like acne, spots, eczema, boils, raw skin, psoriasis
T12	233.08	Dha < 233.08 < ni	Small intestine, ovary, testicles, blood vessels, circulation	Problems with small intestine, wind, rheumatism, disruption in growth, infertility, erectile dysfunction
L1	138.57	Sa < 138.57 < ri	Large intestine, skin	Problems with large intestine, disruption in circulation in intestine, blockages, diarrhea etc., constipation
L2	155.56	Ri < 155.56 < ga	Large bowel, appendix, skin	Problems with appendix, stomach cramps, hyper acidity, varicose veins
L3	185.00	Ma < 185.0 < ma	Bladder, uterus,	Problems during pregnancy,

			prostate, knee	menstruation pains, menopause problems, bladder pain, knee aches- often together with bladder, impotence, bed-wetting
L4	207.65	Pa < 207.65 < dha	Sigmoid, sciatic nerve, prostate	Sciatica, lumbago, prostate trouble, painful or too frequent urination
L5	233.08	Dha < 233.08 < ni	Rectum	Circulation problems in legs and feet, cold feet, cramps in the calves, swelling of feet and legs

In case the basic tonic is fixed at frequency of L1 i.e. at 138.57Hz then the frequencies of L2, L3 and L4 will correspond to Ri, Ma and Pa respectively while L5 will be at slightly raised Dha. Table II, III and IV justifies that the ascending musical notes correspond to ascending levels of consciousness i.e. from moolaadhaara (root) to sahasraara (crown) as claimed in [11].

Healing through Indian music: In any performance (vocal or instrumental), at every point of time there is a mixed gamut of musical notes. In fact at every moment all notes are alive (indirectly or directly played/ struck) because the musical sounds are continuous waves. After striking any particular note, before it ceases to exist, the next note is struck and then the next one and then the next... and so on but surely in a rhythmic sequence. That is, the resonance of one note mixes with the next struck note and this process continues throughout the performance. The actual pitch of a particular note is just a momentary affair and gets changed immediately and continuously due to playing/striking of the next notes. In this way, at every moment, we hear integrated sound of different musical notes. This integration also includes some irregular and unpleasant atmospheric noises as well which we consciously ignore and concentrate on the pleasant, regular and smooth sounds to enjoy the music. This collective sound impact influences our mind and generates vibrations in the body fluids which results in either disturbance or healing in the body. Ears only are not responsible for listening/hearing rather the whole human body gets influenced by sounds. The experiments have shown that even deaf persons enjoy the musical sounds because the skin and bones are equally sensitive to the noises though ears dominate the process. The air vibrations created by sounds touch the skin and other body parts which activate brain by generating waves in the body fluids. That is why the sound of temples, churches etc. calms us while the rowdy music of pubs energizes initially but become exhaustive finally.

Shardaatanaya (quoted from [12]) relates seven musical notes with seven main constituents of the body. Shadja (Sa) with semen, Rishabha (Re) with marrow, Gaandhaara (Ga) with bones, Madhyama (Ma) with fats, Panchama (Pa) with flesh, Dhaivata (Dha) with skin, and Nishaada (Ni) with blood. Some versions of literature relate Dhaivata (Dha) to skin, and

Nishaada to Shrotra. Whatever be the case, this association, in addition to information of Table II, may be suggestive of some cure for a few bodily disorders.

In view of the mentioned ranges of equivalent musical notes of table IV, it may be suggested that the problems arising due to Cervical and the Thoracic vertebrae could be treated with the raaga-s of sampoor-na- jati i.e. having all seven notes, may be in any form, pure or modified or both while audava or shaadva- jati (having a five/ six notes) raaga-s may be applicable to problems of Lumbar zone.

The atmosphere also affects the bodily functions and hence there is a tradition of seasonal, occasional and societal raaga-s in Indian music. The musical notes used in such raaga-s develop a coherence with the nature and the environment which adds to overall health of an individual e.g. Basanta Bahaara is for spring while Malhaara is for the rainy season; phaaga is meant for Holi festival while Dhrupada is used for devotional purposes. Each raaga has been assigned a special time of the day at which it is supposed to be most effectively performed/played and hence imparts maximum impact on health. Ayurveda justifies this time schedule which author is planning to take up in some upcoming article.

Table IV is for yogic healing. The Shakti (prakriti) is believed to remain concealed in the moolaadhaara (root) chakra in the form of Kundalini-Shakti in human body. During yogic meditation, when it gets awakened, it moves upwards to conjoin with Shiva (purusha) who is believed to be residing in Sahasraara (Crown) chakra. This upward movement passes through the other five chakras and traces an infinite spiral which validates the divinity of music. The frequencies of these seven chakras have been listed in table IV. The yogic healers as well as psychologists believe that any disorder in these chakra-s impact the personality and hence the physical health of individuals. E. Beamer [16] comprehensively presented this in a Matrix form on the bases of the works of Caroline Myss. So by regularizing the functioning of these chakra-s diseases may be cured effectively. Eileen [6] claims that she cured many patients by regulating the chakra-s using tuning forks of western note frequencies.

The concept of vaadi- samvaadi of raaga-s may be another basis to choose the raaga-s for cure of diseases. As vaadi- samvaadi are 'most occurring' svara-s in any rendition so the collective vibrating gamut gets dominated by the frequencies of these two and hence become dominating in cure as well.

Various scholars [7], [8], [9], [10] and [18] have identified different raaga-s for the cure of many disorders. The table V is the comprehensive list.

Table V: Raaga-s for various diseases

Disorders	Name of the Raaga-s
Allergy	Ahira Bhairava
Anemia	Puriyaa, Puriyaa Dhanaashri
Anorexia	Shree

Anxiety	Bhimapalaasi, Malahaara, Patmanjaree, Pilu
Asthma	Bhairavi, Darbaari Kaanhdaa, Kedaara, Malahaara
Back Pain	Kirvaani
Blood Purification	Asaavari, Hindola
Cancer	Bhairavi
Colitis	Puriyaa, Raamakali
Coma	Bhairavi,, Bhairava, Bihaaga, Maalakaunsa, Todi
Common cold	Bhairavi, Kaunsi Kaanhdaa, Kedaara,Purvi, Shree, Todi
Concentration	Bhimapalaasi
Confidence building	Asaavari
Constipation	Gunakali, Jaunpuri
Cough	Bhairavi,Gurjari Todi, Kedaara
Depression	Bilaahadi, Vrindaavani Saaranga, Pilu
Diabetes	Baageshree, Puriyaa Dhanashri, Todi
Diarrhea	Jajjaiwanti, Jaunpuri
Diffusing Mental Tension	Darbaari Kaanhdaa, Khamaaja, Puriyaa
Gall Stones	Basanta Bahaara, Deepaka
Head ache	Darbaari Kaanhdaa ,Gunakali, Jajjaiwanti, Kedaara , Malahaara, Purvi,Sohani, Todi
Heart ailments	Caarukeshee, Candrakaunsa, Darbaari, Kalyaana, Kharaharpriyaa
Hemorrhoids	Madhuwanti
High fever	Maaravaa, Hindola
Hyperacidity	Deepaka, Maaravaa, Madmaadh Saaranga, Puriyaa Dhanashri, Todi
Hypertension/ High Blood Pressure	Ahira Bhairava, Baageshree, Bhairavi, Bhimapalaasi, Bhupaali, Darabaari, Durgaa, Kaunsi Kaanhdaa, Kalaavati, Maalakaunsa, Maaravaa, Puriyaa, Puriyaa Dhanaashri, Shree, Todi, Yamana
Hypotension/ Low Blood Pressure	Maalakaunsa
Hysteria	Darbaari Kaanhdaa, Khamaaja, Puriyaa
Indigestion	Ahira Bhairava, Deepaka, Maaravaa
Insomnia	Baageshree, Bahaara, Bihaaga, Darbaari, Kaafi, Khamaaja, Kalyaana, Nilaabari
Intellectual excellence	Shivaranjani
Intestinal Gas	Hindola, Maalakaunsa
Kidney disorders	Ananda Bhairavi, Hindola, Maaravaa
Liver Ailments	Hindola
Malaria	Maaravaa
Memory related problems	Bhimapalaasi, Hindola, Shivaranjani
Mental Disorders	Jajjaiwanti

Migraine	Bhupaali
Nausea	Patmanjari
Paralysis	Jaijaiwanti, Megha
Piles	Raamakali
Psychological disorders	Asaavari
Reducing severe stress	Baageshree, Darbaari, Durgaa, Hamsadhvani, Kalaavati, Kharaharpriyaa, Malahaara, Maaravaa, Tilaka Kaamoda, Shree, Yamana
Rheumatic Arthritis	Ahira Bhairava, Basanta, Bhairavi, Jaijaiwanti, Hindola, Yamana
Sinusitis	Bhairavi, Jogiyaa, Madhuvarshini, Todi
Skin Diseases	Ahira Bhairava
Sleep Disorders	Bihaaga, Kaafi, Khamaaja,
Tonsillitis	Chaayaanata, Kedaara, Shyaama Kalyaana,
Tuberculosis	Bhairavi
Urinary Tract Infection	Jaunpuri
Vomiting	Patamanjari

Subjectivity of Indian Classical Music: Svara-s are also considered to be the representation of various expressions called 'rasa' in literature. It is believed that shaanta rasa (tranquility or calmness) being an eternal disposition, cannot be achieved by worldly affairs so Shaarangadeva associates only eight out of nine rasa with the seven musical notes. Shadaj and rishabha are used for heroism, wonder and wrath; Gaandhaara and nishaada for pathos; Dhaivata for abhorrence and terror; Madhyama and Panchama for mirth and conjugal love [12]. A few similar stances are available in western music also e.g. minor third (komala gaandhaar in Indian music) is a universal expression of sadness [6] while perfect fifth (panchama in Indian music) is believed to create a sound through which Shiva, the masculine principle, calls Shakti, the feminine principle, to the dance of life [1].

Some resources mention that an ancient text of music called raaga-maalaa personifies each raaga e.g. raaga Bhairavi personifies Goddess Bhairavi while raaga Bhairava personifies Shiva; raaga Nattnaaraayan personifies Lord Vishnu, raaga Khamaaja represents a youthful Kambhojika searching desperately her beloved; and so on [5]. These personifications are called dhyaana- moorti-s because performer meditates to replicate these formations in his/her music. But to achieve such perfection and excellence, deep meditation of many years is required which is called raaga-dhyaana (raaga -meditation) in musical world. It is considered as a synonym of naadopaasanaa. Naarada Samhitaa also endorses this concept of embodiment (dhyaana moorti): "The note Sa is said to be the soul, Ri is called the head, Ga is the arms, Ma the chest, Pa the throat, Dha the hips, Ni the feet. Such are the seven limbs of the modal scale" (quoted in [3]). The purity of soul and sensibility of the artist adds magic to this meditation. Each performer has his/ her own interpretation and hence personification and consequently the incarnations. At times these are so convincing and sharp that even audience gets overwhelmed by these. The trained ears get fully engrossed in those images. But such magic, though tried by each performer, is rare. The more spiritual, pious and thorough is the

performer, the more magical is his/her performance. While performing, the artist may not necessarily be reproducing the already composed renditions but he/she elaborates as per the environment, the requirements of the audience and foremost due to his/her inner feelings and psyche at that moment. That is why the same raaga performed by different persons or by the same person at different occasions have different impacts.

Besides the purity of performer, in ancient times, the musical instruments were also made to be alive notionally. The practices were to have at least one part/element of the instrument to be of some animal. It is well known that the percussion instruments were having goat-skin while elephant-tooth was used for bridges of sitaar or veena. The tantri-s of string instruments were made of goat-intestines and so on. It was believed that such usages infuse life to the embodied music.

Chaitanya Deva [5] rightly remarks that musical activity is actually a form of communication. But this communicative relationship is very special one. It's not necessary here that whatever has been communicated should be received exactly. In Indian classical music performances are raaga based and every raaga is meant to create an aura of some deity/ season/ rasa/ bhaava etc. The performer communicates rasa, bhaava and psyche of his/her own mind via music but the listener receives all these as per his/ her ability to comprehend. A learned musician may get engrossed fully or appreciate/ criticize the performer or may learn from the intricacies of the performer but a person who has no ear for classical music may feel irritated, disturbed or bored. The reception may also be affected by the mood/health/ psyche or circumstances of the listener at that particular moment. The fundamental note chosen by performer could also be the factor in establishing a relationship with the listener. Table III and IV show that Sa at 256 Hz is more accurately matched with the frequencies given as compared to Sa at 264 Hz. But besides all these, at times the musical communications are so strong that despite the fact that the listener is totally uninterested to receive, he/ she receives or compelled to receive. For healing, such situations need to be created.

Indian Music as Therapy: The subjectivity of Indian music discussed above is the great barrier for the popularity of Indian music in Music Therapy. For therapeutic purposes, most of the time, we use digital music instead of live performances which loses the positivity of a live concert. The aura of musician is equally important for healing. Cyndi Dale [2] discusses elaborately the electromagnetic charge communicated by healer to the patient and that shall remain absent in digital music. Whether the patient is interested in music or not; he/she has ear for music or not; the concentration level of the patient etc. all contribute considerably in healing. Though the brain cells get activated by musical sounds but whether exact stimulation required for that particular disorder has been originated or not, is a matter of great concern owing to the subjectivity of Indian classical music. In every session of therapy the emotional state of the patient as well as performer may not be same and hence same raaga may not be leaving a similar impact. The raaga-s performed by different artists, though follow a similar basic skeleton, have drastically varied elaborations which could be due to atmosphere, time of the day, audience, fundamental note chosen and foremost due to the inner feelings or psyche of the artist at that moment. The seasons and occasions also govern the performance

and hence affect the healing process. Mornings may be refreshing for some artists but exhaustive for the others which may contradict the performance of the artist and hence the patient. Consequently different persons/patients may receive varied emotional and hence physical impacts in the same one session with the same one raaga. This becomes a deterrent to fix any one raaga universally for a particular disease. The varied list of table V justifies it.

To grab this subjectivity, the Indian mythology promotes recital of mantras/ beeja mantras for healing. The best mantra is considered to be the recital of Aum, the cosmological sound of Universe. It is believed that the japa of this beeja mantra is the greatest healer. The three letters/syllables along with chandra-bindu (if we write in devnaagari script) of this mantra have all healing powers of human body. The recital of this mantra is considered equivalent to naadopaasanaa. The methodology of reciting Aum is so mystic that it vibrates the Sushumna naadee which passes through all yogic chakra-s and hence affects the physical as well as mental along with psychological health of the individual. In fact the repeated recital i.e. japa of this cosmological sound is 'in all the music therapy' as all other sounds of this Universe are believed to be originated from it and get dissolved in it.

Summarizing it can be said that since Western music is considered to be based on exact mathematical calculations so its impact on the human body could be analyzed exactly. But the effect of Indian music primarily depends on the performing artist's psyche, techniques, interpretations and elaborations, though it also follows the concepts of exact harmonics. This, on one hand makes the Indian music divine but on the other hand lowers the probability of universal applicability for pre-defined diseases.

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