Final Paper

Most Peaceful Musical Interval

Sound Healing and Therapy Certificate Program (Globe Institute)

Nidhi Setya
4-10-2024

Introduction

Sound healing has been gaining popularity as an adjunct healing modality in many clinical scenarios. It has shown to decrease stress levels, increase immunity, decrease pain threshold, and improve mental wellbeing across various spectrum of pathological identities.

Various intervals have been previously described to provoke certain human emotions and variable degrees of human connectivity. Pertinent to the current research, brief history of the music intervals studied are as follows.

1) Perfect Unison (1:1 ratio): According to Kay Gardener, who was an American musician, composer, and author, this interval creates a feeling of sameness, rootedness, and unity. Unison can be created by playing the same note twice or by sounding the same pitch together through different instruments. In this study, Unison was created by playing a crystal alchemy bowl and humming the same note with it.
2) Perfect Fourth (4:3 ratio): The two notes in this interval are five half steps or semitones apart. This interval brings the feeling of openness and lightness.
3) Perfect Fifth (3:2 ratio): This interval is created by playing notes that are seven half steps or semitones apart from each other. This is the second overtone of the harmonic series. This interval creates the feeling of movement, completeness, comfort, joy, creativity, and rebirth.
4) Perfect Octave (2:1 ratio): When two notes that are one octave apart from each other are played together, it creates a perfect octave interval. This means that one note is twice or half the frequency of the other note. This interval generates a feeling of togetherness and sameness. Mary Elizabeth Wakefield (licensed acupuncturist, herbalist, Zen Shiatsu practitioner and cranio-sacral therapist, and an opera singer) and Michel Angelo (Opera singer, classical composer, pianist, astrologer, healer, diviner and writer) believe that tis interval feels meditative, restful and grounding.
5) Minor Third (6:5 ratio): Minor third interval is created by playing two notes that are three semitones or half steps apart. Fabien Maman, who is a musician, composer, acupuncturist, author, researcher, healer, and martial artist believes that this interval is used in Country and Western music to tap into emotions like heartache and sadness.

6) Minor Sixth (8:5 ratio): Minor sixth is the musical interval that creates the closest expression of golden ratio 1.6:1 (8:5 ratio). Golden ratio is the blueprint, guiding principle, and consciousness behind the growth of many plants and animals, including humans. It is also seen in the relationship between plants in our solar system. This interval is created by playing notes that are eight half steps apart.

Based on the above characteristics, the primary goal of this study is to elucidate the musical interval that brings maximum feeling of peacefulness amongst the research participants. Secondarily, this research will explore the relationship of experiencing peacefulness with age, participant specific preferred musical note and mode of sound healing delivery method (in-person vs zoom).

Methods

This was a study conducted as a part of the Sound Healing and Therapy Certificate Program at the Globe Institute. This was a prospective study conducted on volunteer healthy adults after obtaining consent from the participants. The subjects were not suffering from any major systemic ailment.

The research was conducted either in-person or via zoom as suitable for the participant. The questionnaire utilized is on the next page.

Questionnaire

On a scale of 0 to 10, with 0 being not peaceful at all and 10 being extremely peaceful, how peaceful were the following intervals?

1) Unison

0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

2) Perfect Fourth

0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

3) Perfect Fifth

0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

4) Perfect Octave

0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

5) Minor Third

0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

6) Minor Sixth

0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

Unison, perfect fourth, perfect fifth and octave are chosen for the study because these intervals have been found to be the most harmonious musical intervals. Minor third and minor sixth have been chosen because those intervals are called the sound of love. The six intervals included in this study are a part of any minor chord.

Two notes (low G and low A) are played for the participants for 2 minutes each one after the other and they are asked to pick a note that felt most peaceful to them. Once the preferred note between G and A is chosen by the participants, musical intervals are created based on that note as the home note or the key of that particular minor scale.

The notes used to make the musical intervals are as follows:

Low G Home Note (G minor chord)

G	A	Bb	C	D	Eb	F	G
1	2	3	4	5	6	7	8

1) Unison = Low G + Voice
2) Minor Third = Low G to Low Bb
3) Perfect Fourth = Low G to Middle C
4) Perfect Fifth = Low G to Middle D
5) Minor Sixth = Low G to Middle Eb
6) Octave = Low G to Middle G

Low A Home Note (A minor chord)

A	B	C	D	E	F	G	A
1	2	3	4	5	6	7	8

1) Unison = Low A + Voice
2) Minor Third = Low A to Middle C
3) Perfect Fourth = Low A to Middle D
4) Perfect Fifth = Low A to Middle E
5) Minor Sixth = Low A to Middle F
6) Octave = Low A to Middle A

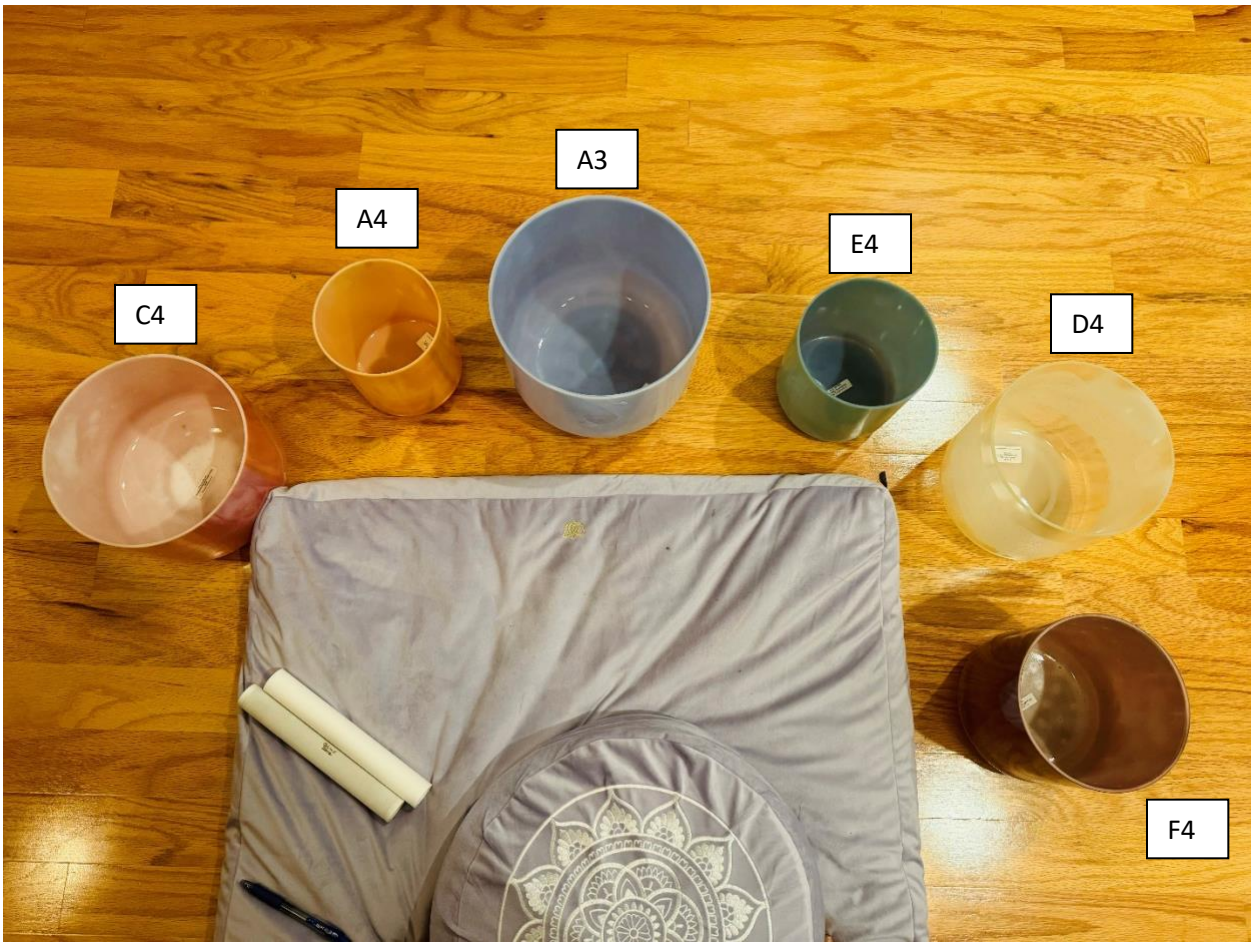
Alchemies and physical characteristics of the bowls used in the study are as follows:

Low G as root

1) Low G (G3) = 12” G -20 Black Tourmaline + Palladium
2) Low Bb (Bb3) = 10” Bb/A# -20 Kyanite Frosted (Inside)
3) Middle C (C4) = 9” C -35 Rhodochrosite + White Light Angel Gold
4) Middle D (D4) = 8” D -30 Lemurian Seed + Lemon Aura Gold
5) Middle Eb (Eb4) = 8” Eb/D# -15 Pink Aura Gold
6) Middle G (G4) = 7” G -25 St. Germain Aura (Pink Aura Gold + Platinum)

Low A as root

1) Low A (A3) = 12” G -20 Black Tourmaline + Palladium
2) Middle C (C4) = 9” C -35 Rhodochrosite + White Light Angel Gold
3) Middle D (D4) = 8” D -30 Lemurian Seed + Lemon Aura Gold
4) Middle E (E4) = 7” E -30 Mt. Shasta Serpentine
5) Middle F (F4) =7” F -5 Ruby + White Light Angel Gold
6) Middle A (A4) = 6” A -10 Sedona Red Rock + Platinum



Statistical methodology

SPSS IBM version 29 was utilized to conduct statistical analysis. Means of the questionnaire were compared using ANOVA test given the variances in data. Univariate analysis comparing the descriptive frequencies in measuring secondary outcomes were done using Fisher exact test. P value of < 0.05 was defined as statistical significance.

Results

Demographics:

Total 12 subjects

In person: 7/12 (58.3%)

Zoom: 5/12 (41.7%)

Age: Range 23-70, mean 44 years

Sex: Female 9/12 (75%), Male 3/12 (25%)

Age Grade

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Age < 40	6	50.0	50.0	50.0
	Age 40-59	3	25.0	25.0	75.0
	Age >60	3	25.0	25.0	100.0
	Total	12	100.0	100.0	

Preferred Note

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	5	41.7	41.7	41.7
	G	7	58.3	58.3	100.0
	Total	12	100.0	100.0	

Descriptive Statistics (Comparison Means)

	N	Minimum	Maximum	Mean	Std. Deviation
Unison	12	5	10	7.67	1.371
Perfect Fourth	12	5	9	7.17	1.403
Perfect Fifth	12	5	10	7.67	1.435
Perfect Octave	12	5	10	7.25	1.815
Minor Third	12	5	10	8.33	1.614
Minor Sixth	12	5	10	8.00	1.706
Valid N (listwise)	12				

The interval that brought most peace (based on mean) was Minor Third (8.33), followed by Minor Sixth (8.00). The interval that brought the least feeling of peace was Perfect Fourth (7.17).

Group Statistics

	Gender (1 Female, 2 Male)	N	Mean	Std. Deviation	Std. Error Mean
Unison	Female	9	7.44	1.333	.444
	Male	3	8.33	1.528	.882
Perfect Fourth	Female	9	7.00	1.500	.500
	Male	3	7.67	1.155	.667
Perfect Fifth	Female	9	7.67	1.658	.553
	Male	3	7.67	.577	.333
Perfect Octave	Female	9	6.78	1.716	.572
	Male	3	8.67	1.528	.882
Minor Third	Female	9	8.22	1.856	.619
	Male	3	8.67	.577	.333
Minor Sixth	Female	9	8.22	1.856	.619
	Male	3	7.33	1.155	.667

No statistical significance but interesting findings of perfect octave. Males find perfect octave more peaceful than females. This could be a bias because all males were on zoom.

Effect of musical intervals on different age groups

Age Grade		Unison	Perfect Fourth	Perfect Fifth	Perfect Octave	Minor Third	Minor Sixth
Age < 40	Mean	7.67	7.33	7.50	7.00	8.83	8.00
	N	6	6	6	6	6	6
	Std. Deviation	.816	1.862	1.643	2.366	1.169	1.414
Age 40-59	Mean	6.33	7.33	8.00	7.33	8.00	9.67
	N	3	3	3	3	3	3
	Std. Deviation	1.528	1.155	2.000	1.528	2.646	.577
Age >60	Mean	9.00	6.67	7.67	7.67	7.67	6.33
	N	3	3	3	3	3	3
	Std. Deviation	1.000	.577	.577	1.155	1.528	1.528
Total	Mean	7.67	7.17	7.67	7.25	8.33	8.00
	N	12	12	12	12	12	12
	Std. Deviation	1.371	1.403	1.435	1.815	1.614	1.706

Minor 6th is significantly more peaceful in the age group 40-59 years, (p =0.036). It is least peaceful in age group > 60 years

Unison is significantly more peaceful in the age group > 60 years, (p=0.038). Unison is the least peaceful in the age group 40-59 years.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Unison	Between Groups	10.667	2	5.333	4.800	.038
	Within Groups	10.000	9	1.111		
	Total	20.667	11			
Perfect Fourth	Between Groups	1.000	2	.500	.218	.808
	Within Groups	20.667	9	2.296		
	Total	21.667	11			
Perfect Fifth	Between Groups	.500	2	.250	.102	.904
	Within Groups	22.167	9	2.463		
	Total	22.667	11			
Perfect Octave	Between Groups	.917	2	.458	.117	.891
	Within Groups	35.333	9	3.926		
	Total	36.250	11			
Minor Third	Between Groups	3.167	2	1.583	.559	.591
	Within Groups	25.500	9	2.833		
	Total	28.667	11			
Minor Sixth	Between Groups	16.667	2	8.333	4.891	.036
	Within Groups	15.333	9	1.704		
	Total	32.000	11			

In person vs zoom

Unison is statistically significantly more peaceful on zoom and Minor Sixth is higher in person.

Group Statistics

	In person (1 yes)	N	Mean	Std. Deviation	Std. Error Mean
Unison	In Person	7	7.00	1.155	.436
	Zoom	5	8.60	1.140	.510
Perfect Fourth	In Person	7	7.43	1.397	.528
	Zoom	5	6.80	1.483	.663
Perfect Fifth	In Person	7	7.43	1.813	.685
	Zoom	5	8.00	.707	.316
Perfect Octave	In Person	7	6.86	1.952	.738
	Zoom	5	7.80	1.643	.735
Minor Third	In Person	7	8.57	1.902	.719
	Zoom	5	8.00	1.225	.548
Minor Sixth	In Person	7	9.00	1.155	.436
	Zoom	5	6.60	1.342	.600

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Unison	Between Groups	7.467	1	7.467	5.657	.039
	Within Groups	13.200	10	1.320		
	Total	20.667	11			
Perfect Fourth	Between Groups	1.152	1	1.152	.562	.471
	Within Groups	20.514	10	2.051		
	Total	21.667	11			
Perfect Fifth	Between Groups	.952	1	.952	.439	.523
	Within Groups	21.714	10	2.171		
	Total	22.667	11			
Perfect Octave	Between Groups	2.593	1	2.593	.770	.401

	Within Groups	33.657	10	3.366		
	Total	36.250	11			
Minor Third	Between Groups	.952	1	.952	.344	.571
	Within Groups	27.714	10	2.771		
	Total	28.667	11			
Minor Sixth	Between Groups	16.800	1	16.800	11.053	.008
	Within Groups	15.200	10	1.520		
	Total	32.000	11			

Unison sounded most peaceful to participants over 60 years of age. All those participants were zoom participants. Further study is needed to determine if this result of statistical significance of Unison as most peaceful on zoom is because of zoom or age over 60 years.

DESRIPTIVE TABULATION OF MUSICAL INTERVAL PEACE OUTCOMES

0 = Undesirable
1-4 = Average
5 = Good
6-7 = Very good
8-9 = Excellent
10 = Best

Grade Unison

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	8.3	8.3	8.3
	Very Good	4	33.3	33.3	41.7
	Excellent	6	50.0	50.0	91.7
	Best	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Unison scored 50% in Excellent. When Best and Excellent are combined, Unison scored a 58.3%.

Best or Excellent Unison (8 and above)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	5	41.7	41.7	41.7
	yes	7	58.3	58.3	100.0
	Total	12	100.0	100.0	

Grade Perfect Fourth

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	8.3	8.3	8.3
	Very Good	6	50.0	50.0	58.3
	Excellent	5	41.7	41.7	100.0
	Total	12	100.0	100.0	

Perfect Fourth scored 50% in Very Good. When Best and Excellent are combined, Perfect Fourth scored a 41.7%.

Best or Excellent Perfect Fourth (8 and above)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	7	58.3	58.3	58.3
	yes	5	41.7	41.7	100.0
	Total	12	100.0	100.0	

Grade Perfect Fifth

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	3	25.0	25.0	25.0
	Excellent	8	66.7	66.7	91.7
	Best	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Perfect Fifth scored 50% in Excellent. When Best and Excellent are combined, Perfect Fifth scored 75%.

Best or Excellent Perfect Fifth (8 and above)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	3	25.0	25.0	25.0
	yes	9	75.0	75.0	100.0
	Total	12	100.0	100.0	

Grade Perfect Octave

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	2	16.7	16.7	16.7
	Very Good	6	50.0	50.0	66.7
	Excellent	2	16.7	16.7	83.3
	Best	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Perfect Octave scored low on Best and Excellent individually. When Best and Excellent are combined, Perfect Octave scored 33.3%.

Best or Excellent Perfect Octave (8 and above)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	8	66.7	66.7	66.7
	yes	4	33.3	33.3	100.0
	Total	12	100.0	100.0	

Grade Minor Third

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	8.3	8.3	8.3
	Very Good	2	16.7	16.7	25.0
	Excellent	6	50.0	50.0	75.0
	Best	3	25.0	25.0	100.0
	Total	12	100.0	100.0	

Minor Third scored 50% in Excellent. When Best and Excellent are combined, Minor Third scored 75%.

Best or Excellent Minor Third (8 and above)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	3	25.0	25.0	25.0
	yes	9	75.0	75.0	100.0
	Total	12	100.0	100.0	

Grade Minor Sixth

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	8.3	8.3	8.3
	Very Good	3	25.0	25.0	33.3
	Excellent	5	41.7	41.7	75.0
	Best	3	25.0	25.0	100.0
	Total	12	100.0	100.0	

Minor Sixth scored highest (41.7%) in Excellent. When Best and Excellent are combined, Minor Sixth scored 66.7%

Best or Excellent Minor Sixth (8 and above)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	4	33.3	33.3	33.3
	yes	8	66.7	66.7	100.0
	Total	12	100.0	100.0	

CORRELATION OF AGE WITH BEST OR EXCELLENT MUSICAL INTERVAL EXPERIENCE

1. Unison

		Best or Excellent Unison		
		no Count	yes Count	Percent
Age Grade	Age < 40	3	3	50
	Age 40-59	2	1	33.33
	Age >60	0	3	100

All participants aged 60 years and above experienced Unison as Best or Excellent.

Pearson Chi-Square Tests

		Best or Excellent Unison
Age Grade	Chi-square	3.086
	df	2
	Sig.	.214[a]

2. Perfect Fourth

		Best or Excellent Perfect Fourth		
		no Count	yes Count	Percent
Age Grade	Age < 40	3	3	50
	Age 40-59	1	2	66.67
	Age >60	3	0	0

Perfect Fourth interval was felt most peaceful by age group 40 to 59 years. None of the participants aged 60 years and above experienced Perfect Fourth as Best or Excellent.

Pearson Chi-Square Tests

		Best or Excellent Perfect Fourth
Age Grade	Chi-square	3.086
	df	2
	Sig.	.214[a]

3. Perfect Fifth

		Best or Excellent Perfect Fifth		
		no	yes	
		Count	Count	Percent
Age Grade	Age < 40	1	5	83.33
	Age 40-59	1	2	66.67
	Age >60	1	2	66.67

Perfect Fifth was felt as Best or Excellent by all age groups especially by age less than 40.

Pearson Chi-Square Tests

		Best or Excellent Perfect 5th
Age Grade	Chi-square	.444
	df	2
	Sig.	.801[a,b]

4. Perfect Octave

		Best or Excellent Perfect Octave		
		no	yes	
		Count	Count	Percent
Age Grade	Age < 40	4	2	33.33
	Age 40-59	2	1	33.33
	Age >60	2	1	33.33

Perfect Octave scored low on Best or Excellent by all age groups.

Pearson Chi-Square Tests

		Best or Excellent Perfect Octave
Age Grade	Chi-square	.000
	df	2
	Sig.	1.000[a,b]

5. Minor Third

		Best or Excellent Minor Third		
		no	yes	
		Count	Count	Percent
Age Grade	Age < 40	1	5	83.33
	Age 40-59	1	2	66.67
	Age >60	1	2	66.67

Minor Third was felt as Best or Excellent by all age groups especially by age less than 40. This finding is similar to Perfect Fifth.

Pearson Chi-Square Tests

		Best or Excellent Minor Third
Age Grade	Chi-square	.444
	df	2
	Sig.	.801[a,b]

6. Minor Sixth

		Best or Excellent Minor Sixth		
		no	yes	
		Count	Count	Percent
Age Grade	Age < 40	2	4	66.67
	Age 40-59	0	3	100
	Age >60	2	1	33.33

All participants aged 40 to 59 experienced Minor Sixth as Best or Excellent. 66.67% of participants less than 40 years of age experienced Minor Sixth as Best or Excellent.

Pearson Chi-Square Tests

		Best or Excellent Minor Sixth
Age Grade	Chi-square	3.000
	df	2
	Sig.	.223[a,b]

IN PERSON VS ZOOM

1. Unison: There is a trend of more peace with Unison on zoom vs in-person but not statistically significance likely because of low sample size. However, this may be practically significant. Also, we cannot rule out if there is a bias based on age.

Crosstab

			Best or Excellent Unison		
			no	yes	Total
In person (1 yes)	In Person	Count	4	3	7
		% within In person (1 yes)	57.1%	42.9%	100.0%
		% within Best or Excellent Unison	80.0%	42.9%	58.3%
		% of Total	33.3%	25.0%	58.3%
	Zoom	Count	1	4	5
		% within In person (1 yes)	20.0%	80.0%	100.0%
		% within Best or Excellent Unison	20.0%	57.1%	41.7%
		% of Total	8.3%	33.3%	41.7%
Total		Count	5	7	12
		% within In person (1 yes)	41.7%	58.3%	100.0%
		% within Best or Excellent Unison	100.0%	100.0%	100.0%
		% of Total	41.7%	58.3%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.656[a]	1	.198		
Continuity Correction[b]	.480	1	.488		
Likelihood Ratio	1.736	1	.188		
Fisher's Exact Test				.293	.247
Linear-by-Linear Association	1.518	1	.218		
N of Valid Cases	12				

2. Perfect Fourth

Crosstab

			Best or Excellent Perfect Fourth		
			no	yes	Total
In person (1 yes)	In Person	Count	3	4	7
		% within In person (1 yes)	42.9%	57.1%	100.0%
		% within Best or Excellent Perfect 4th	42.9%	80.0%	58.3%
		% of Total	25.0%	33.3%	58.3%
	Zoom	Count	4	1	5
		% within In person (1 yes)	80.0%	20.0%	100.0%
		% within Best or Excellent Perfect 4th	57.1%	20.0%	41.7%
		% of Total	33.3%	8.3%	41.7%
Total		Count	7	5	12
		% within In person (1 yes)	58.3%	41.7%	100.0%
		% within Best or Excellent Perfect 4th	100.0%	100.0%	100.0%
		% of Total	58.3%	41.7%	100.0%

In person participants scored Perfect Fourth as Best or Excellent more than zoom participants.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.656[a]	1	.198		
Continuity Correction[b]	.480	1	.488		
Likelihood Ratio	1.736	1	.188		
Fisher's Exact Test				.293	.247
Linear-by-Linear Association	1.518	1	.218		
N of Valid Cases	12				

3. Perfect Fifth: High score as Best or Excellent both In-person and zoom.

Crosstab

			Best or Excellent Perfect Fifth		
			no	yes	Total
In person (1 yes)	In Person	Count	2	5	7
		% within In person (1 yes)	28.6%	71.4%	100.0%
		% within Best or Excellent Perfect Fifth	66.7%	55.6%	58.3%
		% of Total	16.7%	41.7%	58.3%
	Zoom	Count	1	4	5
		% within In person (1 yes)	20.0%	80.0%	100.0%
		% within Best or Excellent Perfect Fifth	33.3%	44.4%	41.7%
		% of Total	8.3%	33.3%	41.7%
Total		Count	3	9	12
		% within In person (1 yes)	25.0%	75.0%	100.0%
		% within Best or Excellent Perfect Fifth	100.0%	100.0%	100.0%
		% of Total	25.0%	75.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.114[a]	1	.735		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.116	1	.733		
Fisher's Exact Test				1.000	.636
Linear-by-Linear Association	.105	1	.746		
N of Valid Cases	12				

4. Perfect Octave: Low score as Best or Excellent both In-person and zoom.

Crosstab

			Best or Excellent Perfect Octave		
			no	yes	Total
In person (1 yes)	In Person	Count	5	2	7
		% within In person (1 yes)	71.4%	28.6%	100.0%
		% within Best or Excellent Perfect Octave	62.5%	50.0%	58.3%
		% of Total	41.7%	16.7%	58.3%
	Zoom	Count	3	2	5
		% within In person (1 yes)	60.0%	40.0%	100.0%
		% within Best or Excellent Perfect Octave	37.5%	50.0%	41.7%
		% of Total	25.0%	16.7%	41.7%
Total		Count	8	4	12
		% within In person (1 yes)	66.7%	33.3%	100.0%
		% within Best or Excellent Perfect Octave	100.0%	100.0%	100.0%
		% of Total	66.7%	33.3%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.171[a]	1	.679		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.170	1	.680		
Fisher's Exact Test				1.000	.576
Linear-by-Linear Association	.157	1	.692		
N of Valid Cases	12				

5. Minor Third: High score as Best or Excellent both In-person and zoom.

Crosstab

			Best or Excellent Minor Third		
			no	yes	Total
In person (1 yes)	In Person	Count	2	5	7
		% within In person (1 yes)	28.6%	71.4%	100.0%
		% within Best or Excellent Minor Third	66.7%	55.6%	58.3%
		% of Total	16.7%	41.7%	58.3%
	Zoom	Count	1	4	5
		% within In person (1 yes)	20.0%	80.0%	100.0%
		% within Best or Excellent Minor Third	33.3%	44.4%	41.7%
		% of Total	8.3%	33.3%	41.7%
Total		Count	3	9	12
		% within In person (1 yes)	25.0%	75.0%	100.0%
		% within Best or Excellent Minor Third	100.0%	100.0%	100.0%
		% of Total	25.0%	75.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.114[a]	1	.735		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.116	1	.733		
Fisher's Exact Test				1.000	.636
Linear-by-Linear Association	.105	1	.746		
N of Valid Cases	12				

6. Minor Sixth: Higher score as Best or Excellent In-person (85.7%) vs Zoom (40%).

Crosstab

			Best or Excellent Minor Sixth		
			no	yes	Total
In person (1 yes)	In Person	Count	1	6	7
		% within In person (1 yes)	14.3%	85.7%	100.0%
		% within Best or Excellent Minor 6th	25.0%	75.0%	58.3%
		% of Total	8.3%	50.0%	58.3%
	Zoom	Count	3	2	5
		% within In person (1 yes)	60.0%	40.0%	100.0%
		% within Best or Excellent Minor 6th	75.0%	25.0%	41.7%
		% of Total	25.0%	16.7%	41.7%
Total		Count	4	8	12
		% within In person (1 yes)	33.3%	66.7%	100.0%
		% within Best or Excellent Minor 6th	100.0%	100.0%	100.0%
		% of Total	33.3%	66.7%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.743[a]	1	.098		
Continuity Correction[b]	1.071	1	.301		
Likelihood Ratio	2.805	1	.094		
Fisher's Exact Test				.222	.152
Linear-by-Linear Association	2.514	1	.113		
N of Valid Cases	12				

PREFERRED NOTE

1) Unison

Crosstab

			Best or Excellent Unison		
			no	yes	Total
Preferred Note	A	Count	3	2	5
		% within Preferred Note	60.0%	40.0%	100.0%
		% within Best or Excellent Unison	60.0%	28.6%	41.7%
		% of Total	25.0%	16.7%	41.7%
	G	Count	2	5	7
		% within Preferred Note	28.6%	71.4%	100.0%
		% within Best or Excellent Unison	40.0%	71.4%	58.3%
		% of Total	16.7%	41.7%	58.3%
Total		Count	5	7	12
		% within Preferred Note	41.7%	58.3%	100.0%
		% within Best or Excellent Unison	100.0%	100.0%	100.0%
		% of Total	41.7%	58.3%	100.0%

Participants who preferred note G felt more peace with Unison.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.185[a]	1	.276		
Continuity Correction[b]	.245	1	.621		
Likelihood Ratio	1.195	1	.274		
Fisher's Exact Test				.558	.311
N of Valid Cases	12				

2) Perfect Fourth

Crosstab

			Best or Excellent Perfect Fourth		
			no	yes	Total
Preferred Note	A	Count	2	3	5
		% within Preferred Note	40.0%	60.0%	100.0%
		% within Best or Excellent Perfect Fourth	28.6%	60.0%	41.7%
		% of Total	16.7%	25.0%	41.7%
	G	Count	5	2	7
		% within Preferred Note	71.4%	28.6%	100.0%
		% within Best or Excellent Perfect Fourth	71.4%	40.0%	58.3%
		% of Total	41.7%	16.7%	58.3%
Total		Count	7	5	12
		% within Preferred Note	58.3%	41.7%	100.0%
		% within Best or Excellent Perfect Fourth	100.0%	100.0%	100.0%
		% of Total	58.3%	41.7%	100.0%

Participants who preferred note A felt more peace with Perfect Fourth.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.185[a]	1	.276		
Continuity Correction[b]	.245	1	.621		
Likelihood Ratio	1.195	1	.274		
Fisher's Exact Test				.558	.311
N of Valid Cases	12				

3) Perfect Fifth

Crosstab

			Best or Excellent Perfect Fifth		
			no	yes	Total
Preferred Note	A	Count	2	3	5
		% within Preferred Note	40.0%	60.0%	100.0%
		% within Best or Excellent Perfect Fifth	66.7%	33.3%	41.7%
		% of Total	16.7%	25.0%	41.7%
	G	Count	1	6	7
		% within Preferred Note	14.3%	85.7%	100.0%
		% within Best or Excellent Perfect Fifth	33.3%	66.7%	58.3%
		% of Total	8.3%	50.0%	58.3%
Total		Count	3	9	12
		% within Preferred Note	25.0%	75.0%	100.0%
		% within Best or Excellent Perfect Fifth	100.0%	100.0%	100.0%
		% of Total	25.0%	75.0%	100.0%

Both A and G participants experienced high Best or Excellent Perfect Fifth. G is higher than A.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.029 [a]	1	.310		
Continuity Correction[b]	.114	1	.735		
Likelihood Ratio	1.024	1	.312		
Fisher's Exact Test				.523	.364
N of Valid Cases	12				

4) Perfect Octave

Crosstab

			Best or Excellent Perfect Octave		
			no	yes	Total
Preferred Note	A	Count	3	2	5
		% within Preferred Note	60.0%	40.0%	100.0%
		% within Best or Excellent Perfect Octave	37.5%	50.0%	41.7%
		% of Total	25.0%	16.7%	41.7%
	G	Count	5	2	7
		% within Preferred Note	71.4%	28.6%	100.0%
		% within Best or Excellent Perfect Octave	62.5%	50.0%	58.3%
		% of Total	41.7%	16.7%	58.3%
Total		Count	8	4	12
		% within Preferred Note	66.7%	33.3%	100.0%
		% within Best or Excellent Perfect Octave	100.0%	100.0%	100.0%
		% of Total	66.7%	33.3%	100.0%

Both A and G participants experienced low Best or Excellent Perfect Octave. A is higher than G.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.171[a]	1	.679		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.170	1	.680		
Fisher's Exact Test				1.000	.576
N of Valid Cases	12				

5) Minor Third

Crosstab

			Best or Excellent Minor Third		
			no	yes	Total
Preferred Note	A	Count	1	4	5
		% within Preferred Note	20.0%	80.0%	100.0%
		% within Best or Excellent Minor Third	33.3%	44.4%	41.7%
		% of Total	8.3%	33.3%	41.7%
	G	Count	2	5	7
		% within Preferred Note	28.6%	71.4%	100.0%
		% within Best or Excellent Minor Third	66.7%	55.6%	58.3%
		% of Total	16.7%	41.7%	58.3%
Total		Count	3	9	12
		% within Preferred Note	25.0%	75.0%	100.0%
		% within Best or Excellent Minor Third	100.0%	100.0%	100.0%
		% of Total	25.0%	75.0%	100.0%

Both A and G participants experienced high Best or Excellent Perfect Minor Third. A is higher than G.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.114[a]	1	.735		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.116	1	.733		
Fisher's Exact Test				1.000	.636
N of Valid Cases	12				

6) Minor Sixth

Crosstab

			Best or Excellent Minor Sixth		
			no	yes	Total
Preferred Note	A	Count	0	5	5
		% within Preferred Note	0.0%	100.0%	100.0%
		% within Best or Excellent Minor Sixth	0.0%	62.5%	41.7%
		% of Total	0.0%	41.7%	41.7%
	G	Count	4	3	7
		% within Preferred Note	57.1%	42.9%	100.0%
		% within Best or Excellent Minor Sixth	100.0%	37.5%	58.3%
		% of Total	33.3%	25.0%	58.3%
Total		Count	4	8	12
		% within Preferred Note	33.3%	66.7%	100.0%
		% within Best or Excellent Minor Sixth	100.0%	100.0%	100.0%
		% of Total	33.3%	66.7%	100.0%

All participants who preferred Note A experienced Minor Sixth as Best or Excellent.

42.9% of participants who preferred Note G experienced Minor Sixth as Best or Excellent.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.286[a]	1	.038		
Continuity Correction[b]	2.100	1	.147		
Likelihood Ratio	5.716	1	.017		
Fisher's Exact Test				.081	.071
N of Valid Cases	12				

CONCLUSION

The interval that brought most peace (based on mean) was Minor Third (8.33), followed by Minor Sixth (8.00). The interval that brought the least feeling of peace was Perfect Fourth (7.17). Males find perfect octave more peaceful than females. This could be a bias because all males were on zoom.

Minor 6^{th} is significantly more peaceful in the age group 40-59 years, ($p = 0.036$). It is least peaceful in age group > 60 years

Unison is significantly more peaceful in the age group > 60 years, ($p = 0.038$). Unison is the least peaceful in the age group 40-59 years.

Unison is statistically significantly more peaceful on zoom and Minor Sixth is higher in person. Unison sounded most peaceful to participants over 60 years of age. All those participants were zoom participants. Further study is needed to determine if this result of statistical significance of Unison as most peaceful on zoom is because of zoom or age over 60 years.
When Best and Excellent are combined, Unison scored a 58.3%, Perfect Fourth scored a 41.7%, Perfect Fifth scored 75%, Perfect Octave scored 33.3%, Minor Third scored 75%, and Minor Sixth scored 66.7%.

All participants aged 60 years and above experienced Unison as Best or Excellent. Perfect Fifth was felt as Best or Excellent by all age groups especially by age less than 40.
Participants who preferred note G felt more peace with Unison.
Participants who preferred note A felt more peace with Perfect Fourth.
Both A and G participants experienced high Best or Excellent Perfect Fifth. G is higher than A.
Both A and G participants experienced low Best or Excellent Perfect Octave. A is higher than G.
Both A and G participants experienced high Best or Excellent Perfect Minor Third. A is higher than G.
All participants who preferred Note A experienced Minor Sixth as Best or Excellent.

FUTURE DIRECTION

More data can be collected based on the same methodology to have stronger evidence for analysis.