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ABSTRACT

Ralph Waldo once said, "The only gift is a portion of thyself." Organ Donation is one of the most pivotal contributions that gifts 'life' to a person nearing his death. Thanks to medical science, every organ donor transforms the lives of more than 10 people. While, the merits and demerits of organ donation is being vastly studied; new technology fused with scientific principles is trying to build a world that is organ donation-friendly. However, what do people think about organ donation? This has been explored and analysed in the study.

Objective: To understand people's perspective towards organ donation by investigating their attitude, willingness and curiosity and drawing important reasonings and conclusions.

Methods: A convenience based cross sectional study was conducted from May 2, 2022 to May 9, 2022. The survey was conducted through Google Forms, data collected in Google Sheets, further analysed by SPSS with associations calculated using Person Chi Test.

Results: 63 respondents participated in the survey which included people from different gender, age groups, regions and religions. With regard to attitude, 73% of the respondents strongly agreed, 17.5% agreed, 7.9% neither agreed nor disagreed while 1.6% disagreed with the principle of organ donation. There was a strong association between age and attitude. While willingness did not have any strong associations, attitude towards consent had strong associations with religion and age. Curiosity and religion had good associations. It indicates that ignorance and confusion in certain age and religious groups can arise during organ donation

Conclusions: The perspective towards organ donation has been positive, driven by the humanistic concerns. The survey also showcased that people wanted their autonomic rights to be protected. However, there is lack of knowledge among the general public which must be addressed by the concerned authorities.

Keywords: attitude, consent, organ donation, transplantation, willingness

Introduction

As defined by Wikipedia, Organ Donation is the process when a person allows an organ of their own to be removed and transplanted to another person, legally, either by consent while the donor is dead or alive with the consent of the donor or his/her next of kin. However, there is more to organ donation than this simple definition. It is a lifesaving procedure that unites mankind through lives. One life gives birth to another and sorrow gives way to hope. Organ Donation has been a widely discussed topic in the last few decades. With medical science advancing in a rapid pace and new technologies bringing in new possibilities, donating an organ has gained prominence in today's world. According to a data published by Health Resources and Services Administration (HRSA), every donor can save 8 lives and enhance over 75 more. Nearly 130,000 organ transplantations were carried out worldwide in 2020. However, these numbers are still less compared to the countless patients waiting for a lifesaving transplant every single day. HRSA reveals that every 9 minutes, another person is added to the transplant waiting list, while nearly 17 people die each day waiting for an organ transplant in the

United States. Analysing the reasons behind it, we can see that Organ donation is not merely a medical procedure, but a blessing that finds its roots in Bioethics. While health related professionals weigh the medical importance of organ donation, the general public is more interested in the other aspects of organ donation. Religious and cultural reasons, myths, malpractices and the ethical dilemma of defining death can put an individual on the horns of a dilemma and prevent him/her in taking an important decision. It is imperative that government authorities as well as the medical experts debunk the myths and misconceptions that revolve around organ donation. To kick off, organizations must first understand what people think of organ donation and what are the challenges that must be addressed.

Through the following study, I have attempted to understand people's perspective on organ donation through survey and given a personal analysis on various factors and possible explanations for the same. While this study can debunk some idea about people's opinions on the "Anatomical Gift", I do believe a bigger scale study conducted by concerned authorities can go a long way in shaping the track of organ donation worldwide.

Material and Methodology

Study design and study setting

A cross sectional study was conducted from May 2, 2022 to May 9, 2022 to understand people's perspective towards organ donation. The target population included people from different age groups, gender, religion and regions participating in the study.

Sampling method and Sample size

For the study, a non-probability, convenience sampling was used. People from different backgrounds were chosen for the purpose of understanding the differences in their attitude and willingness towards organ donation. In the time span of seven days, 63 people volunteered to participate in the survey. All the respondents were allowed to participate after informed consent. All the 63 respondents gave their consent for participation, and as a result, 63 participants were included in the study.

Method of Data Collection

The survey was conducted through Google Forms, which aimed to collect both qualitative and quantitative data. The survey had five sections to evaluate the general awareness, personal views, attitude and willingness towards organ donation as well as demographic data which included questions on age, gender, place of residence and religion. Questions on demographics were in Multiple Choice Question Format while Questions on general awareness, willingness, attitude and personal views included Multiple Choice Questions, Checkboxes, Linkert scale and descriptive type answers. The data was collected in Google spreadsheet and analysed by SPSS. Associations were evaluated using Person-Chi Square test and p-values <0.05 were considered significant.

Results

The study population consisted of 63 people, which include 47 females, 14 males and 2 people who preferred not to reveal their gender. The respondents' demographic data is revealed in the following table

Category	n=63 (in %)
Age in Years	
<18	8 (12.6%)
18-24	25 (39.6%)
25-34	7 (11.1%)
35-44	7 (11.1%)
45-54	13 (20.6%)
55-64	2 (3.1%)
65>	1 (1.6%)
Region	
Asia	53 (82.8%)
Central America	1 (1.6%)
Eastern Europe	3 (4.7%)
European Union and Western Europe	2 (3.1%)
Middle East	2 (3.1%)
North America	1 (1.6%)
South America	1 (1.6%)
Religion	
Christianity	35 (55.5%)
Hinduism	24 (38%)
Buddhism	1 (1.6%)
Sikhism	1 (1.6%)
Atheism	2 (3.2%)

- Knowledge about Organ Donation

15.8% of the respondents are completely aware, 36.5% aware, 44.4% neither aware nor unaware while 3.1% are completely unaware about organ donation. None of them are unaware.

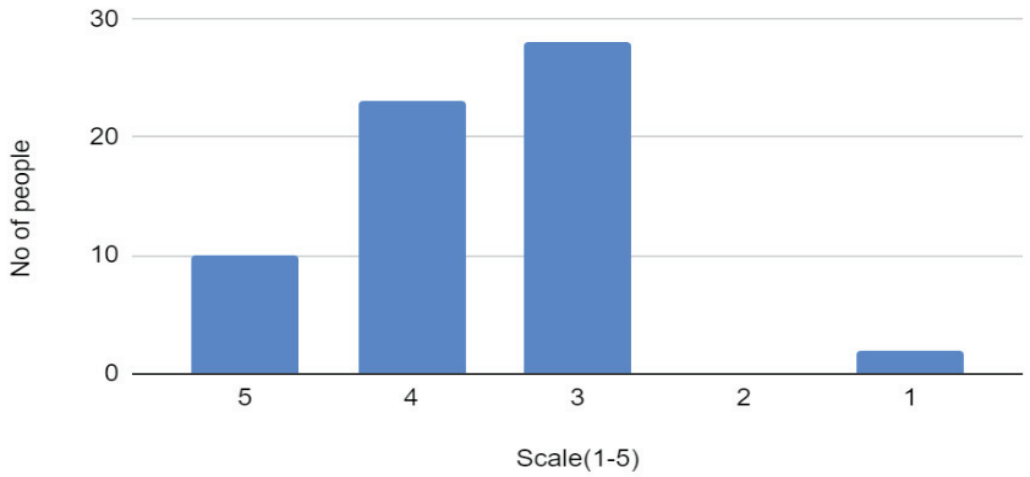

Table 1.1: Knowledge level (1- Completely unaware to 5- Completely aware) among participants plotted against the number of participants

- Attitude towards the principle of organ donation

73% of the respondents strongly agreed, 17.5% agreed, 7.9% neither agreed nor disagreed while 1.6% disagreed with the principle of organ donation. None of them strongly disagreed.

There was no association between gender and attitude (p = .62), religion and attitude (p = .14) and place and attitude (p = .99). However, a significant association was found between age and attitude (p = .001)

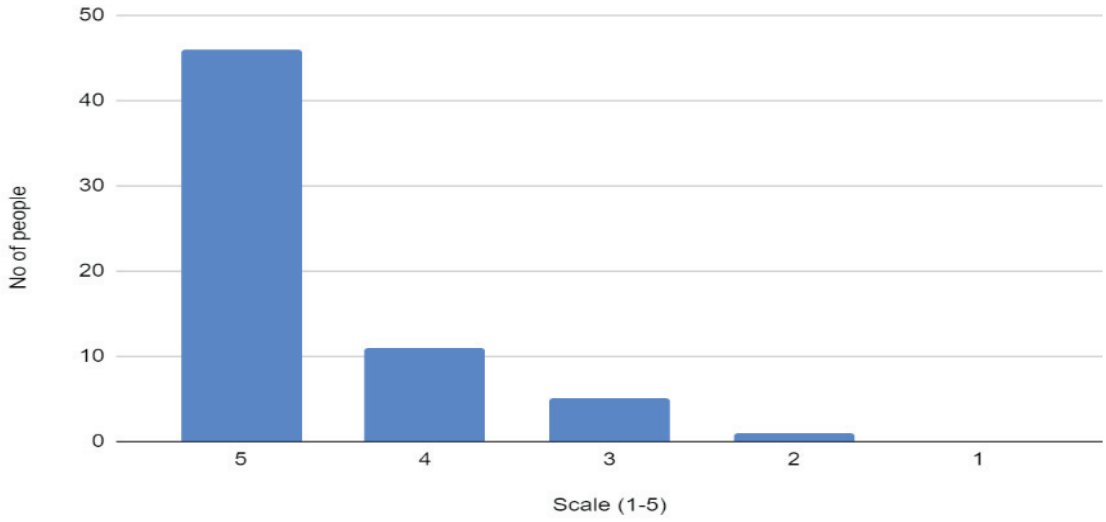

Table 1.2: Attitude towards organ donation (1- strongly disagreed to 5- strongly agreed) plotted against no of participants

Following tables elucidate associations with various factors: Gender, Age, Religion and Place

Gender x Attitude

Crosstab

		Attitude				
Disagree		Neither agree nor disagree	Agree	Strongly agree		Total
Gender	Male	1	1	2	10	14
	Female	0	4	9	34	47
	Prefer not to say	0	0	0	2	2
Total		1	5	11	46	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.403[a]	6	.622
Likelihood Ratio	4.402	6	.622
Linear-by-Linear Association	.864	1	.353
N of Valid Cases	63		

a. 9 cells (75.0%) have expected count less than 5. The minimum expected count is .03.

Age x Attitude

Crosstab

		Attitude				
Disagree		Neither agree nor disagree	Agree	Strongly agree		Total
Age	<18	0	2	2	4	8
	18-24	0	1	4	20	25
	25-34	0	1	3	3	7
	35-44	0	0	1	6	7
	45-54	0	1	1	11	13
	55-64	1	0	0	1	2
	65>	0	0	0	1	1
Total		1	5	11	46	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	41.483a	18	.001
Likelihood Ratio	17.784	18	.470
Linear-by-Linear Association	.102	1	.749
N of Valid Cases	63		

a. 23 cells (82.1%) have expected count less than 5. The minimum expected count is .02.

Religion x Attitude

Crosstab

Count

		Attitude				
Disagree		Neither agree nor disagree	Agree	Strongly agree		Total
Religion	Christianity	1	4	6	24	35
	Hinduism	0	0	4	20	24
	Buddhism	0	0	0	1	1
	Sikhism	0	1	0	0	1
	Atheism	0	0	1	1	2
Total		1	5	11	46	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	17.152[a]	12	.144
Likelihood Ratio	12.816	12	.383
Linear-by-Linear Association	.000	1	.984
N of Valid Cases	63		

a. 17 cells (85.0%) have expected count less than 5. The minimum expected count is .02.

Place x Attitude

Crosstab

		Attitude				
Disagree		Neither agree nor disagree	Agree	Strongly agree		Total
Place	Asia	1	5	8	39	53
	Eastern Europe	0	0	1	2	3
	European Union and Western Europe	0	0	1	1	2
	Middle East	0	0	1	1	2
	South America	0	0	0	1	1
	North America	0	0	0	1	1
	Central America	0	0	0	1	1
Total		1	5	11	46	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.293[a]	18	.998
Likelihood Ratio	5.860	18	.997
Linear-by-Linear Association	.468	1	.494
N of Valid Cases	63		

a. 26 cells (92.9%) have expected count less than 5. The minimum expected count is .02.

- Comfort with the idea of donating organs

42.9% of the respondents are very comfortable, 27% comfortable, 14% neither comfortable or uncomfortable, 3.2% uncomfortable and 4.8% are very uncomfortable about the idea of donating their organs

There was no association between gender and comfort (p = .80), age and comfort (p = .65) and place and comfort (p = .35)

A strong association was found between religion and comfort to donate organ (p = <0.001)

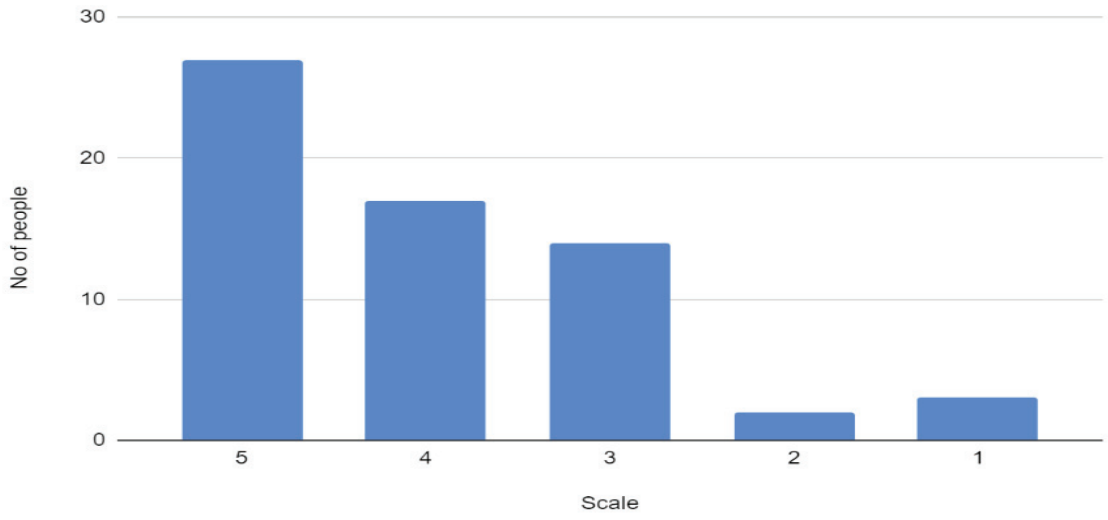

Table 1.3: Comfort (1- Very uncomfortable to 5- Very comfortable) plotted against number of participants

Following tables elucidate associations with various factors: Gender, Age, Religion and Place

Gender x Comfort

Crosstab

		Comfort					
		Very uncomfortable	Uncomfortable	Neither comfortable nor uncomfortable	Comfortable	Very comfortable	Total
Gender	Male	1	0	1	5	7	14
	Female	2	2	12	12	19	47
	Prefer not to say	0	0	1	0	1	2
Total		3	2	14	17	27	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.554[a]	8	.804
Likelihood Ratio	5.939	8	.654
Linear-by-Linear Association	.535	1	.464
N of Valid Cases	63		

a. 11 cells (73.3%) have expected count less than 5. The minimum expected count is .06.

Age x Comfort

Crosstab

		Comfort					
		Very uncomfortable	Uncomfortable	Neither comfortable nor uncomfortable	Comfortable	Very comfortable	Total
Age	<18	1	1	0	4	2	8
	18-24	2	0	8	4	11	25
	25-34	0	0	2	3	2	7
	35-44	0	0	1	1	5	7
	45-54	0	1	2	4	6	13
	55-64	0	0	1	0	1	2
	65>	0	0	0	1	0	1
Total		3	2	14	17	27	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	20.814[a]	24	.650
Likelihood Ratio	23.657	24	.481
Linear-by-Linear Association	1.572	1	.210
N of Valid Cases	63		

a. 31 cells (88.6%) have expected count less than 5. The minimum expected count is .03.

Religion x Comfort

Crosstab

		Comfort					
Very uncomfortable		Uncom-fortable	Neither com-fortable nor uncomfortable	Comfortable	Very comfort-able		Total
Religion	Christianity	2	1	10	8	14	35
	Hinduism	0	0	4	8	12	24
	Buddhism	0	0	0	0	1	1
	Sikhism	0	1	0	0	0	1
	Atheism	1	0	0	1	0	2
Total		3	2	14	17	27	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	46.069[a]	16	<.001
Likelihood Ratio	20.267	16	.208
Linear-by-Linear Association	1.105	1	.293
N of Valid Cases	63		

a. 19 cells (76.0%) have expected count less than 5. The minimum expected count is .03.

Place x Comfort

Crosstab

		Comfort					
		Very uncomfortable	Uncom-fortable	Neither com-fortable nor uncomfortable	Comfort-able	Very comfort-able	Total
Place	Asia	3	2	8	16	24	53
	Eastern Europe	0	0	3	0	0	3
	European Union and Western Europe	0	0	1	0	1	2
	Middle East	0	0	2	0	0	2
	South America	0	0	0	0	1	1
	North America	0	0	0	1	0	1
	Central America	0	0	0	0	1	1
Total		3	2	14	17	27	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	25.925[a]	24	.357
Likelihood Ratio	24.754	24	.419
Linear-by-Linear Association	.009	1	.926
N of Valid Cases	63		

a. 32 cells (91.4%) have expected count less than 5. The minimum expected count is .03.

- Willingness to donate organs

41.3% of the respondents definitely want to donate their organs after, death, if possible, 46% would consider donating their organs after death, if possible, 11.1% don't know if they want to donate their organs after death while 1.6% definitely do not want to donate their organs after death.

There was no association found between gender and willingness (p = .99), age and willingness (p = .39), religion and willingness (p = .83) and place and willingness (p = .44)

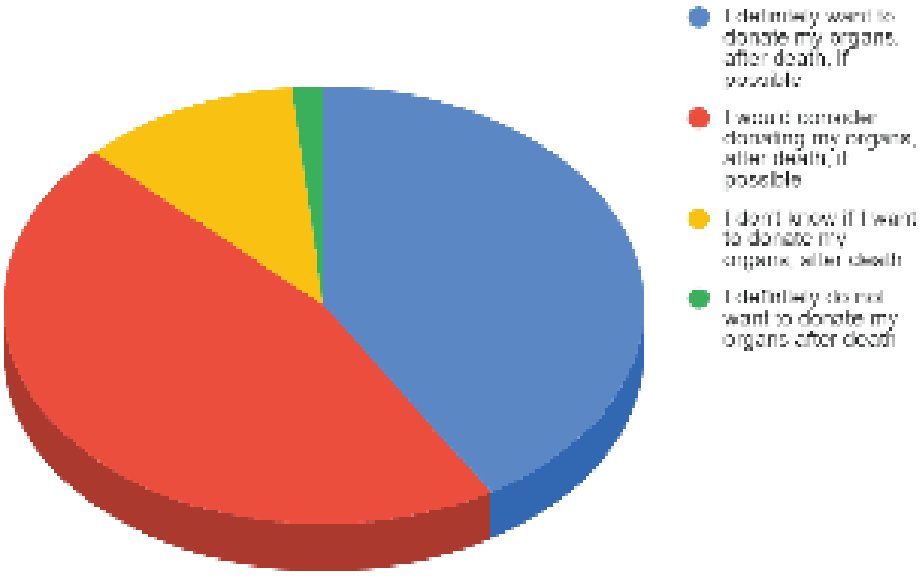

Table 1.4: Pie Chart showcasing the willingness to donate organs among the participants

Following tables elucidate associations with various factors: Gender, Age, Religion and Place
Gender x Willingness

Crosstab

		Willingness				
		I will definitely donate my organs after death, if possible	I would consider donating my organs, after death if possible	I don't know if I want to donate my organs	I will not donate my organs, after death	Total
Gender	Male	6	6	2	0	14
	Female	19	22	5	1	47
	Prefer not to say	1	1	0	0	2
Total		26	29	7	1	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.796[a]	6	.992
Likelihood Ratio	1.252	6	.974
Linear-by-Linear Association	.008	1	.929
N of Valid Cases	63		

a. 7 cells (58.3%) have expected count less than 5. The minimum expected count is .03.

Age x Willingness

Crosstab

		Willingness				
		I will definitely donate my organs after death, if possible	I would consider donating my organs, after death if possible	I don't know if I want to donate my organs	I will not donate my organs, after death	Total
Age	<18	1	5	2	0	8
	18-24	12	11	1	1	25
	25-34	2	4	1	0	7
	35-44	4	2	1	0	7
	45-54	7	5	1	0	13
	55-64	0	2	0	0	2
	65>	0	0	1	0	1
Total		26	29	7	1	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	18.992[a]	18	.392
Likelihood Ratio	17.000	18	.523
Linear-by-Linear Association	.153	1	.696
N of Valid Cases	63		

a. 24 cells (85.7%) have expected count less than 5. The minimum expected count is .02.

Religion * Willingness

Crosstab

I will definitely donate my organs after death,		I would consider donating my organs, after death	I don't know if I want to donate my organs	I will not donate my organs, after death		Total
Religion	Christianity	13	16	5	1	35
	Hinduism	13	9	2	0	24
	Buddhism	0	1	0	0	1
	Sikhism	0	1	0	0	1
	Atheism	0	2	0	0	2
Total		26	29	7	1	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.402[a]	12	.830
Likelihood Ratio	9.164	12	.689
Linear-by-Linear Association	.042	1	.838
N of Valid Cases	63		

a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .02.

Place x Willingness

Crosstab

Count

I will definitely donate my organs after death, if possible		PV1 I would consider donating my organs, after death if possible	I don't know if I want to donate my organs	I will not donate my organs, after death		Total
Place	Asia	24	24	4	1	53
	Eastern Europe	0	1	2	0	3
	European Union and Western Europe	0	1	1	0	2
	Middle East	1	1	0	0	2
	South America	0	1	0	0	1
	North America	0	1	0	0	1
	Central America	1	0	0	0	1
Total		26	29	7	1	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	18.225[a]	18	.441
Likelihood Ratio	16.036	18	.590
Linear-by-Linear Association	.134	1	.715
N of Valid Cases	63		

a. 25 cells (89.3%) have expected count less than 5. The minimum expected count is .02.

- Reflections on Organ Donation

In checkbox format, respondents gave the following reasons as to why they would donate their organs. The major reason that outshined was “I would be happy to save a life”, followed by “I feel a social responsibility to donate my organs” and “Someone I love would need it someday”.

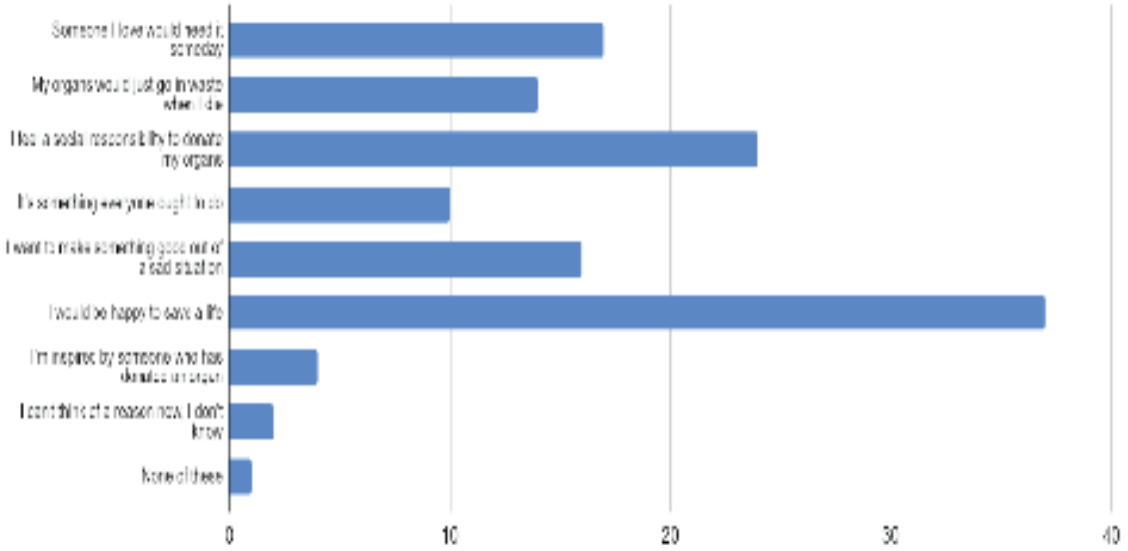

Table 1.5: Table elucidating various positive reasons chosen by the participants when they think about opting for organ donation

The respondents who had negative considerations about organ donation, gave the following responses as to why they would not donate their organs. “I don’t know enough about it”, followed by “I want to be cremated/buried”, “I would worry my organs would not be used for transplantation” and “I don’t want to suffer after death” were the pivotal reasons that emerged among the group of people who felt pessimistic about organ donation

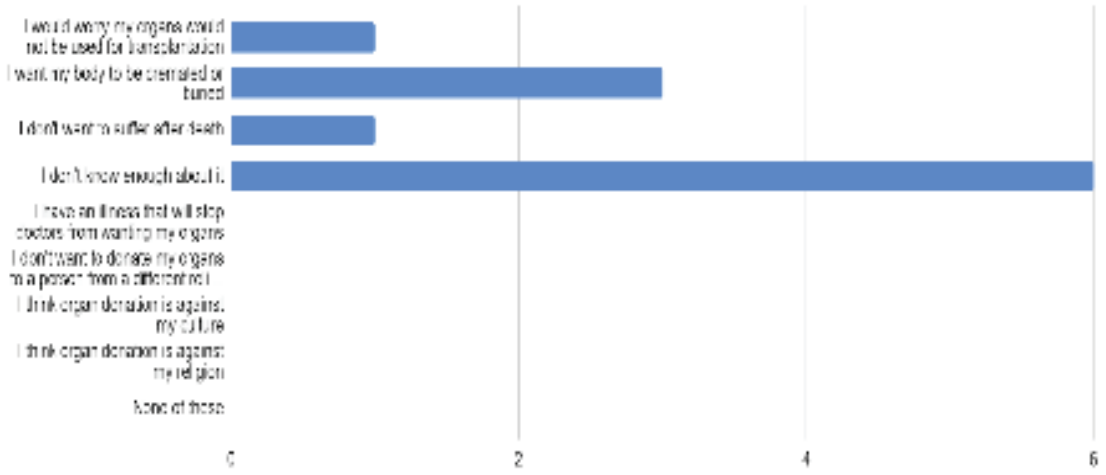

Table 1.6: Table elucidating various negative reasons chosen by the participants when they think about not opting for organ donation

- Registration with Organ Donation Programme

87.3% of the respondents are not registered with any organ donation programme, 1.6% are registered, while 11.1% responded, “Maybe, I am not sure”

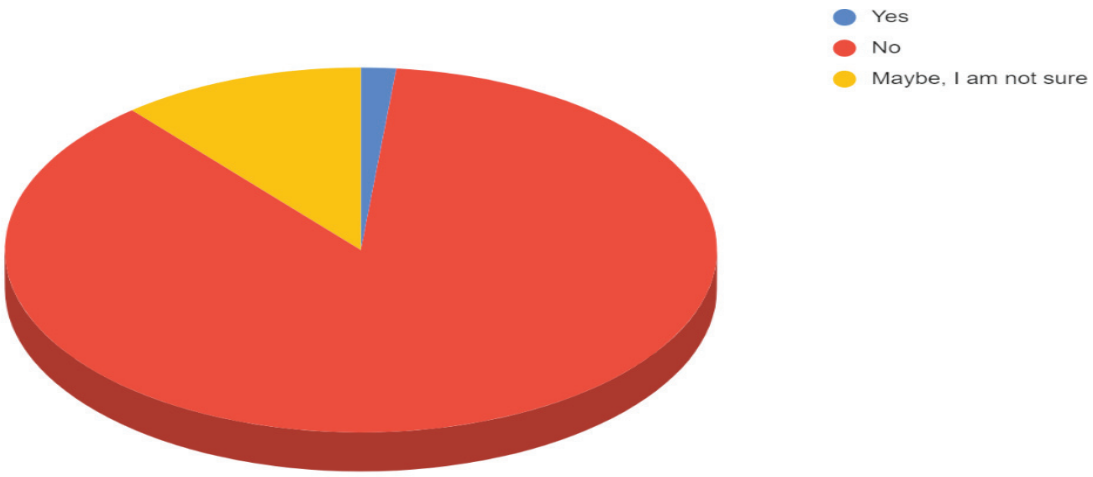

Table 1.7: Pie chart showcasing the number of participants registered/ not registered for organ donation program

- Source of information

39.7% of the respondents came to know about organ donation through television, radio or news, 22.2% through their education curriculum, 19% through social media, 9.5% through a family member/close friend, 4.8% through government/ non-government organizations ‘drives, 3.2% have been through/seen an experience related to organ donation, while 1.6% chose other reasons, wherein being related to medical profession has been specified.

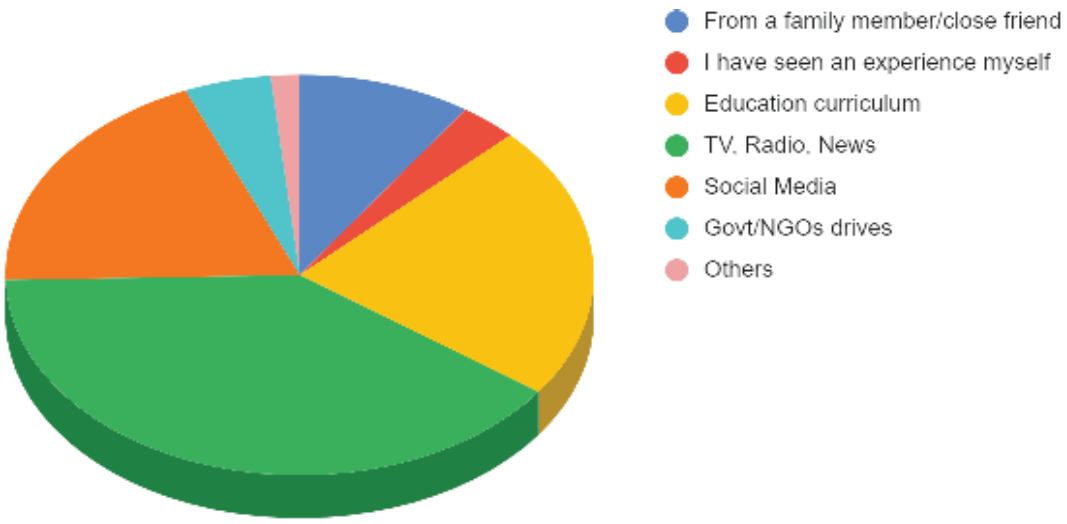

Table 1.8: Pie chart showcasing the source of information

- Conversation about Organ Donation

When it comes to discussing about organ donation with anyone, 47.6% gave the response in affirmative, 39.7% response in negative while 12.7% gave the response as "Maybe"

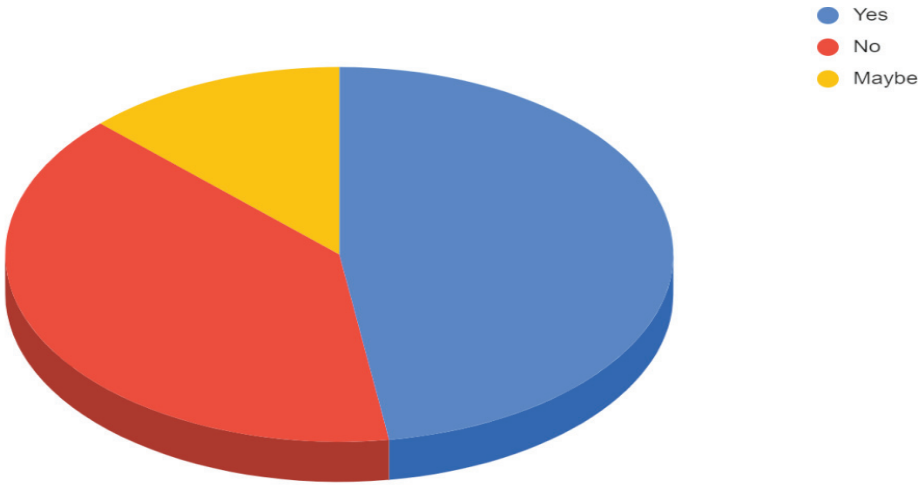

Table 1.9: Pie chart showcasing the status of conversation about organ donation among participants

- Importance of consent in people's view

77.8% of the respondents regarded 'consent' before donating organs as very important, 11.1% felt it important, 7.9% considered it neither important nor unimportant, 1.6% felt it unimportant and 1.6% felt it very unimportant.

There was no association between gender and attitude towards consent (p = .16) and place and attitude towards consent (p = .99)

However, a strong association was found between age and attitude towards consent (p = .002)

and religion and attitude towards consent *(p* = <.001)

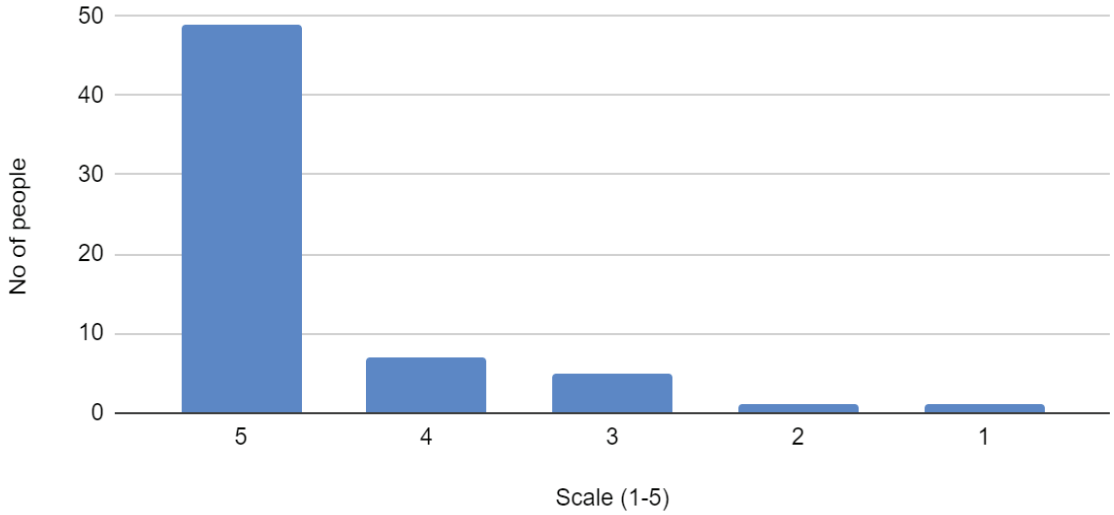

Table 1.10: Importance of consent (1- Very unimportant to 5- Very important) plotted against number of participants

Following tables elucidate associations with various factors: Gender, Age, Religion and Place

Gender x Attitude towards Consent

Crosstab

		Consent					
Very unimportant		Unimportant	Neither important nor unimportant	Important	Very important		Total
Gender	Male	1	0	3	1	9	14
	Female	0	1	2	5	39	47
	Prefer not to say	0	0	0	1	1	2
Total		1	1	5	7	49	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11.632[a]	8	.168
Likelihood Ratio	9.486	8	.303
Linear-by-Linear Association	3.109	1	.078
N of Valid Cases	63		

a. 12 cells (80.0%) have expected count less than 5. The minimum expected count is .03.

Age x Attitude towards Consent

Crosstab

		Consent					
		Very unimportant	Unimportant	Neither important nor unimportant	Important	Very important	Total
Age	<18	0	1	0	0	7	8
	18-24	0	0	3	4	18	25
	25-34	0	0	0	0	7	7
	35-44	0	0	0	0	7	7
	45-54	0	0	2	2	9	13
	55-64	1	0	0	1	0	2
	65>	0	0	0	0	1	1
Total		1	1	5	7	49	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	49.652[a]	24	.002
Likelihood Ratio	27.697	24	.273
Linear-by-Linear Association	1.011	1	.315
N of Valid Cases	63		

a. 30 cells (85.7%) have expected count less than 5. The minimum expected count is .02.

Religion x Attitude towards Consent

Crosstab

Count

		Consent					
		Very unimportant	Unimportant	Neither important nor unimportant	Important	Very important	Total
Religion	Christianity	1	0	3	4	27	35
	Hinduism	0	0	1	3	20	24
	Buddhism	0	0	0	0	1	1
	Sikhism	0	0	1	0	0	1
	Atheism	0	1	0	0	1	2
Total		1	1	5	7	49	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	44.291[a]	16	<.001
Likelihood Ratio	15.184	16	.511
Linear-by-Linear Association	2.427	1	.119
N of Valid Cases	63		

a. 23 cells (92.0%) have expected count less than 5. The minimum expected count is .02.

Place x Attitude towards Consent

Crosstab

Count

		Consent					
Very unimportant		Unimportant	Neither important nor unimportant	Important	Very important		Total
Place	Asia	1	1	4	7	40	53
	Eastern Europe	0	0	1	0	2	3
	European Union and Western Europe	0	0	0	0	2	2
	Middle East	0	0	0	0	2	2
	South America	0	0	0	0	1	1
	North America	0	0	0	0	1	1
	Central America	0	0	0	0	1	1
Total		1	1	5	7	49	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.230[a]	24	1.000
Likelihood Ratio	6.073	24	1.000
Linear-by-Linear Association	1.161	1	.281
N of Valid Cases	63		

a. 33 cells (94.3%) have expected count less than 5. The minimum expected count is .02.

- Importance of telling our close ones about our wishes to donate organ

73% of the respondents consider it very important, 14.3% as important, 11.1% as neither important nor unimportant and 1.6% as very unimportant. None felt it as unimportant.

There was no association between gender and importance of sharing decision (p =.26), religion and importance of sharing decision (p =.39) and place and importance of sharing decision (p = .996).

However, a strong association was observed between age and importance of sharing the decision regarding organ donation with loved ones (p =.002)

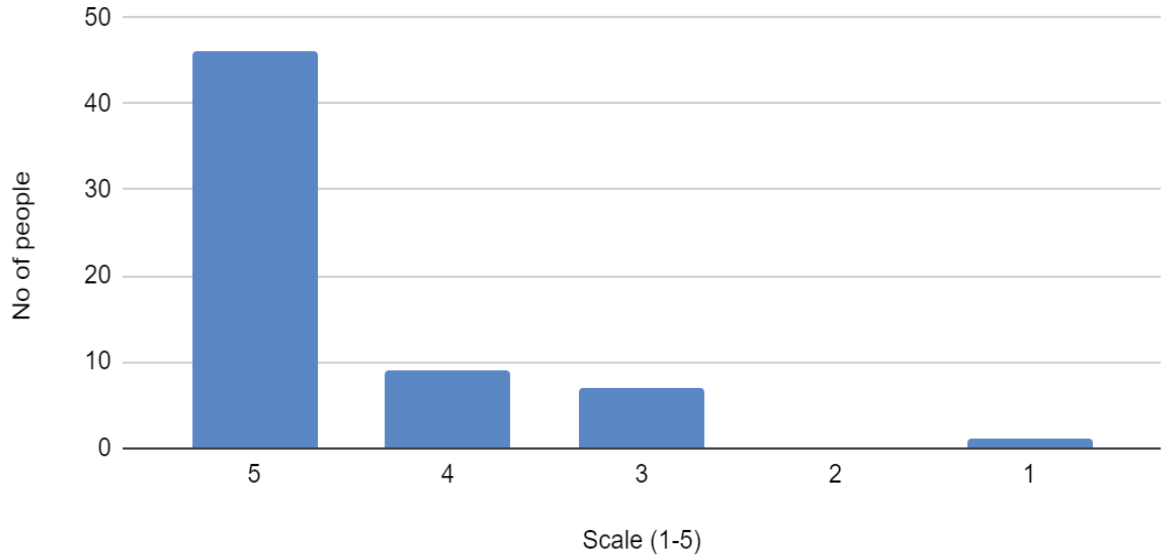

Table 1.11: Importance of sharing the decision with loved ones (1- Very unimportant to 5- Very important) plotted against number of participants

Following tables elucidate associations with various factors: Gender, Age, Religion and Place

Gender x Importance of sharing the decision

Crosstab

Count

		Sharing decisions with loved ones				
Very unimportant		Neither important nor unimportant	Important	Very unimportant		Total
Gender	Male	1	3	3	7	14
	Female	0	4	6	37	47
	Prefer not to say	0	0	0	2	2
Total		1	7	9	46	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.636[a]	6	.266
Likelihood Ratio	7.425	6	.283
Linear-by-Linear Association	6.737	1	.009
N of Valid Cases	63		

a. 8 cells (66.7%) have expected count less than 5. The minimum expected count is .03.

Age x Importance of sharing the decision

Crosstab

Count

		Sharing decisions with loved ones				
Very unimportant		Neither important nor unimportant	Important	Very unimportant		Total
Age	<18	0	1	1	6	8
	18-24	0	4	4	17	25
	25-34	0	0	2	5	7
	35-44	0	0	0	7	7
	45-54	0	2	1	10	13
	55-64	1	0	1	0	2
	65>	0	0	0	1	1
Total		1	7	9	46	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	39.926[a]	18	.002
Likelihood Ratio	19.791	18	.345
Linear-by-Linear Association	.377	1	.539
N of Valid Cases	63		

a. 23 cells (82.1%) have expected count less than 5. The minimum expected count is .02.

Religion x Importance of sharing the decision

Crosstab

Count

		Sharing decisions with loved ones				
Very unimportant		Neither important nor unimportant	Important	Very unimportant		Total
Religion	Christianity	1	4	6	24	35
	Hinduism	0	2	2	20	24
	Buddhism	0	0	0	1	1
	Sikhism	0	1	0	0	1
	Atheism	0	0	1	1	2
Total		1	7	9	46	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.701[a]	12	.391
Likelihood Ratio	9.326	12	.675
Linear-by-Linear Association	.001	1	.980
N of Valid Cases	63		

a. 17 cells (85.0%) have expected count less than 5. The minimum expected count is .02.

Place x Importance of sharing the decision

Crosstab

Count

		Sharing decisions with loved ones				
Very unimportant		Neither important nor unimportant	Important	Very un-important		Total
Place	Asia	1	6	8	38	53
	Eastern Europe	0	1	0	2	3
	European Union and Western Europe	0	0	1	1	2
	Middle East	0	0	0	2	2
	South America	0	0	0	1	1
	North America	0	0	0	1	1
	Central America	0	0	0	1	1
Total		1	7	9	46	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.928[a]	18	.996
Likelihood Ratio	6.793	18	.992
Linear-by-Linear Association	1.024	1	.312
N of Valid Cases	63		

a. 25 cells (89.3%) have expected count less than 5. The minimum expected count is .02.

- Reaction to organ donation by a loved one

On asking about a hypothetical situation wherein what will be the respondents' reaction if a loved one shared with him/her that he/she wants to donate his/her organs, 61.7% chose to be completely supportive, 25% chose to be supportive, 11.7% chose to be neither supportive nor unsupportive, while 1.7% chose to be unsupportive. None chose to be completely unsupportive

There was no association found between gender and reaction (p =.51), religion (p =.26) and reaction and place and reaction (p =.41).

However, a strong association was found between age and reaction (p = .004)

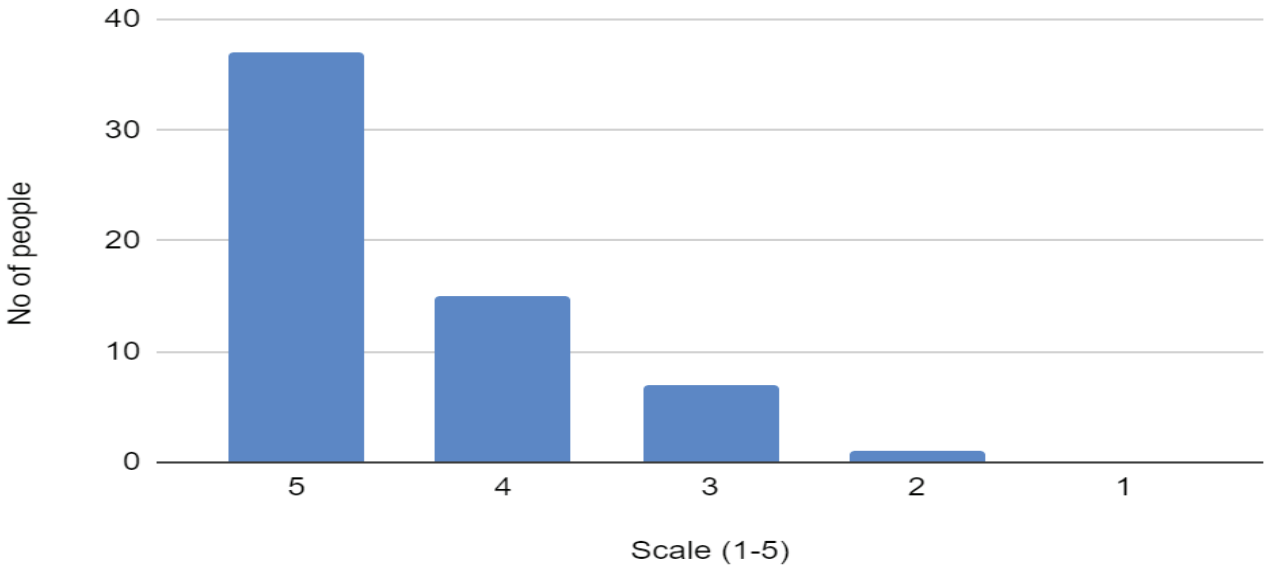

Table 1.12: Reaction to a consent related scenario (1- Very unsupportive to 5- Very supportive) plotted against number of participants

Following tables elucidate associations with various factors: Gender, Age, Religion and Place

Gender x Reaction to a Scenario regarding Organ Donation

Crosstab

Count

		Reaction				
Unsupportive		Neither supportive nor unsupportive	Supportive	Completely supportive		Total
Gender	Male	1	2	2	9	14
	Female	0	6	14	27	47
	Prefer not to say	0	0	1	1	2
Total		1	8	17	37	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.261[a]	6	.511
Likelihood Ratio	5.112	6	.530
Linear-by-Linear Association	.158	1	.691
N of Valid Cases	63		

a. 8 cells (66.7%) have expected count less than 5. The minimum expected count is .03.

Age x Reaction to a Scenario regarding Organ Donation

Crosstab

Count

		Reaction				
Unsupportive		Neither supportive nor unsupportive	Supportive	Completely supportive		Total
Age	<18	0	2	2	4	8
	18-24	0	4	6	15	25
	25-34	0	0	4	3	7
	35-44	0	0	2	5	7
	45-54	0	2	3	8	13
	55-64	1	0	0	1	2
	65>	0	0	0	1	1
Total		1	8	17	37	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	38.180[a]	18	.004
Likelihood Ratio	16.718	18	.543
Linear-by-Linear Association	.051	1	.822
N of Valid Cases	63		

a. 25 cells (89.3%) have expected count less than 5. The minimum expected count is .02.

Religion x Reaction to a Scenario regarding Organ Donation

Crosstab

Count

		Reaction				
Unsupportive		Neither supportive nor unsupportive	Supportive	Completely supportive		Total
Religion	Christianity	1	8	8	18	35
	Hinduism	0	0	7	17	24
	Buddhism	0	0	0	1	1
	Sikhism	0	0	0	1	1
	Atheism	0	0	2	0	2
Total		1	8	17	37	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.625[a]	12	.263
Likelihood Ratio	17.973	12	.117
Linear-by-Linear Association	1.322	1	.250
N of Valid Cases	63		

a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .02.

Place x Reaction to a Scenario regarding Organ Donation

Crosstab

Count

		Reaction				
Unsupportive		Neither supportive nor unsupportive	Supportive	Completely supportive		Total
Place	Asia	1	6	13	33	53
	Eastern Europe	0	2	0	1	3
	European Union and Western Europe	0	0	1	1	2
	Middle East	0	0	2	0	2
	South America	0	0	0	1	1
	North America	0	0	1	0	1
	Central America	0	0	0	1	1
Total		1	8	17	37	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	18.635[a]	18	.415
Likelihood Ratio	16.743	18	.541
Linear-by-Linear Association	.018	1	.894
N of Valid Cases	63		

a. 25 cells (89.3%) have expected count less than 5. The minimum expected count is .02.

- Preferred mode of contribution

In checkbox format, a major chunk of the population preferred “donating organs after death”, followed by “giving consent to donate a loved one’s organs”

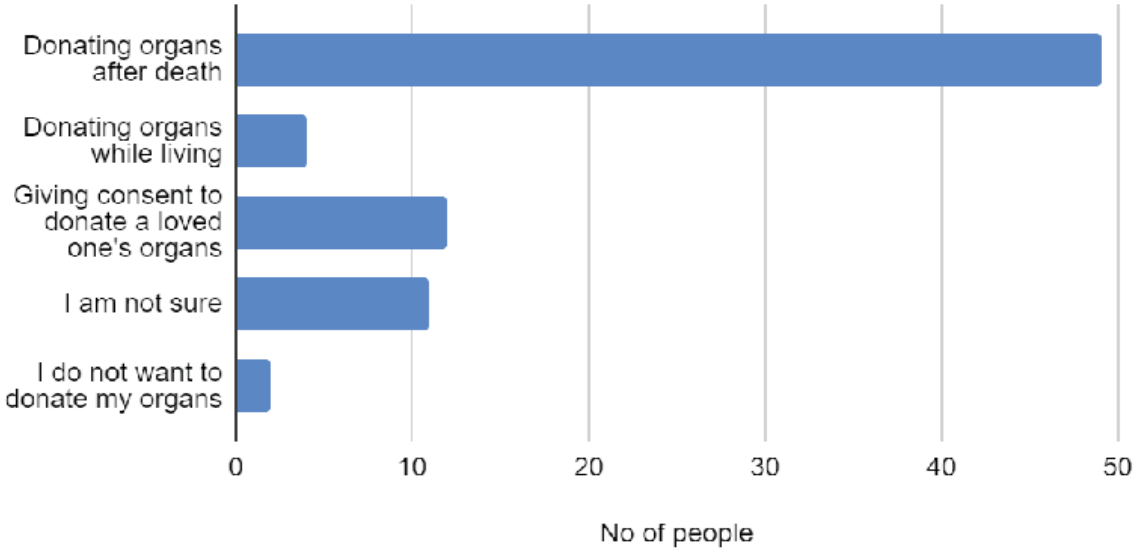

Table 1.13: Preferred mode of contribution among participants

- Person, you wish to donate, if conditions permit

The most preferred option has been "It does not matter, I would donate my organs to anyone, followed by "Loved ones- family and close friends" and "Person I know of- Work colleague, neighbour, etc"

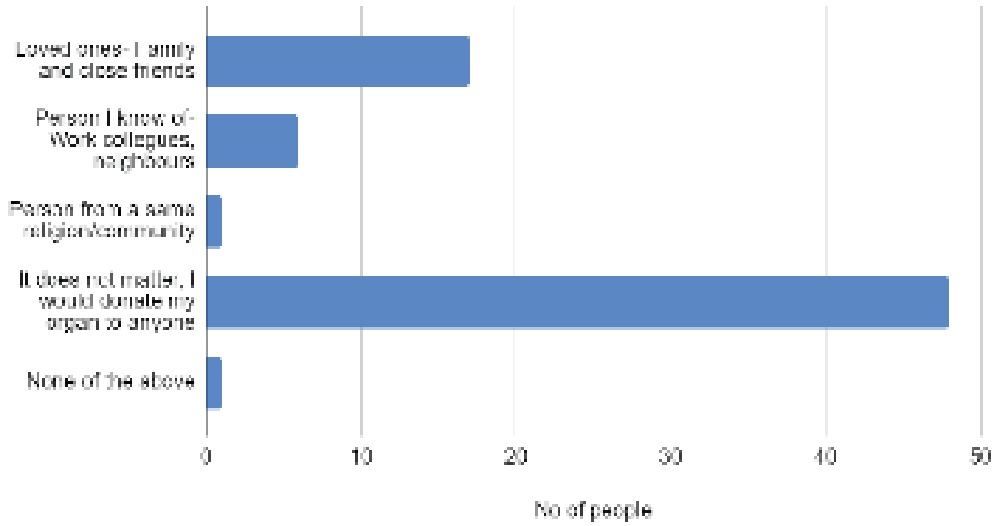

Table 1.14: Table showcasing the people they wish to donate their organs

- Organs you would want to donate, if conditions permit

The most chosen options in decreasing order are "Kidneys", "Eyes", "I am not sure", "Heart", "Liver", "Lungs", "Brain", "Face", "Intestines", "Hands", "Others" and "None of the above

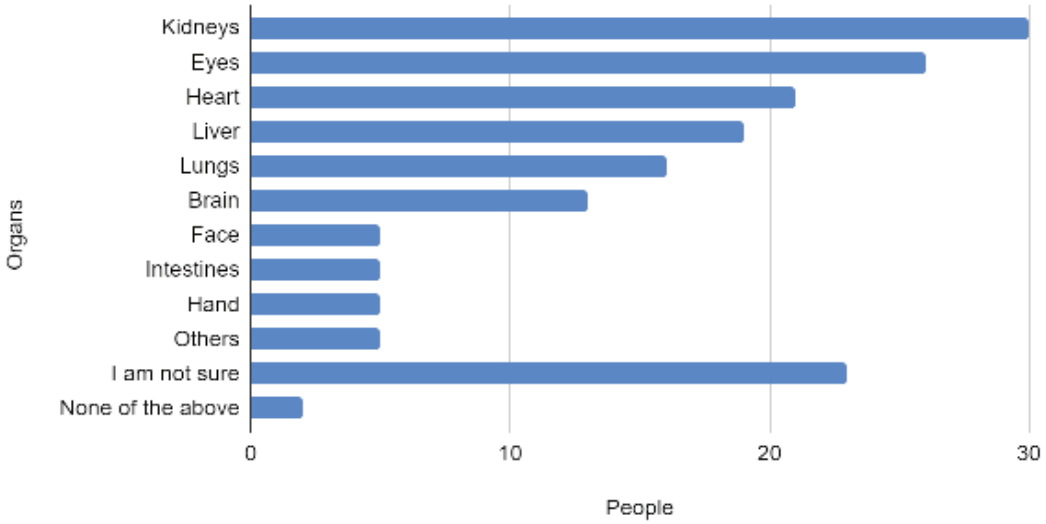

Table 1.15: Table showcasing the preferred organs for donation

- Curiosity to know more about Organ Donation after the survey

79.4% of the respondents felt prompted to know more about organ donation after the survey, 12.7% responded "Maybe", while 7.9% did not feel the need to.

There is no association found between gender and curiosity ($p = .37$), age and curiosity ($p = .22$) and place and curiosity ($p = .86$). However, there was an association was found between religion and curiosity ($p = .05$)

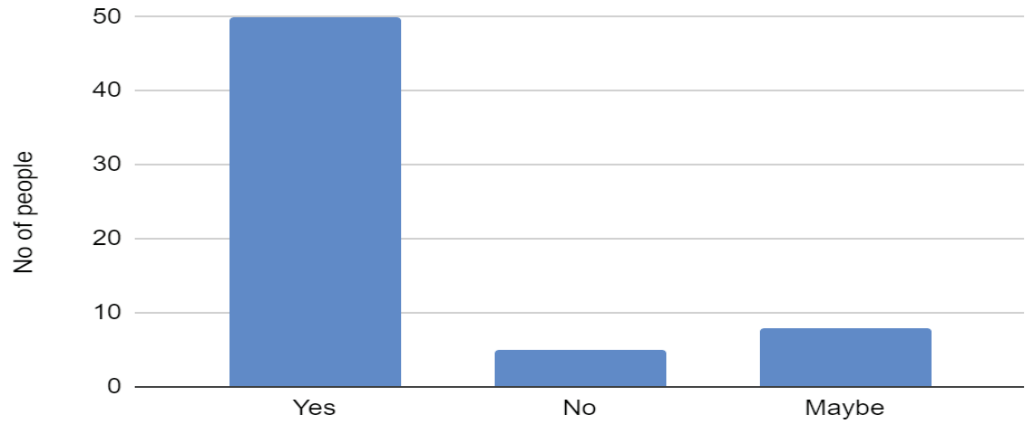

Table 1.16: Curiosity among participants plotted against number of participants

Following tables elucidate associations with various factors: Gender, Age, Religion and Place

Gender x Curiosity

Crosstab

Count

		Curiosity			
Yes		No	Maybe		Total
Gender	Male	10	1	3	14
	Female	39	4	4	47
	Prefer not to say	1	0	1	2
Total		50	5	8	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.276[a]	4	.370
Likelihood Ratio	3.469	4	.483
Linear-by-Linear Association	.151	1	.698
N of Valid Cases	63		

a. 6 cells (66.7%) have expected count less than 5. The minimum expected count is .16.

Age x Curiosity

Crosstab

Count

		Curiosity			
Yes		No	Maybe		Total
Age	<18	6	2	0	8
	18-24	21	0	4	25
	25-34	6	0	1	7
	35-44	7	0	0	7
	45-54	7	3	3	13
	55-64	2	0	0	2
	65>	1	0	0	1
Total		50	5	8	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	15.366[a]	12	.222
Likelihood Ratio	18.482	12	.102
Linear-by-Linear Association	.392	1	.531
N of Valid Cases	63		

a. 16 cells (76.2%) have expected count less than 5. The minimum expected count is .08.

Religion x Curiosity

Crosstab

Count

Yes		Curiosity			Total
		No	Maybe		
Religion	Christianity	26	4	5	35
	Hinduism	21	0	3	24
	Buddhism	1	0	0	1
	Sikhism	0	1	0	1
	Atheism	2	0	0	2
Total		50	5	8	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	15.207[a]	8	.055
Likelihood Ratio	11.114	8	.195
Linear-by-Linear Association	.486	1	.486
N of Valid Cases	63		

a. 13 cells (86.7%) have expected count less than 5. The minimum expected count is .08.

Place x Curiosity

Crosstab

Count

Yes		Curiosity			Total
		No	Maybe		
Place	Asia	42	5	6	53
	Eastern Europe	3	0	0	3
	European Union and Western Europe	1	0	1	2
	Middle East	1	0	1	2
	South America	1	0	0	1
	North America	1	0	0	1
	Central America	1	0	0	1
Total		50	5	8	63

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.924[a]	12	.863
Likelihood Ratio	6.631	12	.881
Linear-by-Linear Association	.010	1	.921
N of Valid Cases	63		

a. 19 cells (90.5%) have expected count less than 5. The minimum expected count is .08.

- Opinions on "Organ Donation Building a Future for Mankind"

87.3% of the respondents answered "Yes", 11.1% responded "Maybe" and 1.6% answered in negative.

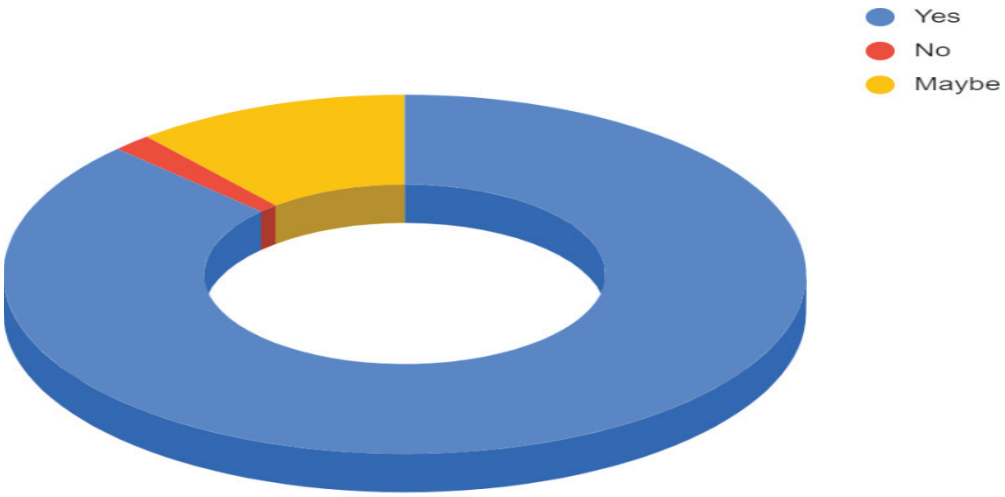

Table 1.17: Table showcasing the opinions on organ donation building a future for mankind

Discussions

The study aimed to understand people's perspective towards organ donation and analysed their attitude, general awareness, willingness, comfort and curiosity through questions. The findings were noteworthy.

73% of the population strongly agreed with the principle of organ donation which might show that a lot of people who participated in the survey have a good perspective about the idea of organ donation and believing in its purpose. None strongly disagreed which might strongly prove the same. A strong association has been found between age and attitude towards organ donation. The people in the middle age group showed a more positive attitude towards organ donation, followed by the young adults. Younger age groups lagged behind, which might arise due to the lack of awareness about organ donation. In the community-based study conducted by Khalid F. *et.al* to access the level of knowledge and attitude regarding organ donation in Karachi, Pakistan, attitude had been strongly associated with gender and occupation

When asked about their knowledge regarding organ donation, 44.4% of the respondents felt neither aware nor unaware, while 36% felt aware about it. There was a tiny proportion who felt com-

pletely aware or completely unaware. The mediocre knowledge could arise due to the fact that the most of the people who participated in the survey were not much familiar with organ donation or were not related to the medical profession in any way. A community-based study from Karachi, Pakistan conducted by Khalid F. *et al.* to access the level of knowledge and attitude regarding organ donation revealed that only (25.8%) of the population had adequate knowledge about organ donation. This had also been attributed to people being less aware about organ donation.

The above two questions had brought forth a point: The purpose of organ donation is perspicuous for the participants, however most of them might be unaware of the intricacies that surround organ donation and might be vulnerable to myths surrounding it.

On the question regarding how comfortable are they with the idea of donating their organs, myriad responses were received, with the maximum response as "very comfortable" (42.9%) followed by "comfortable" (27%). An interesting point to be mentioned: There was a strong association between religion and comfort, which might try to highlight the fact that religious beliefs might play a crucial role in deciding a person's comfort/ease to donate his/her organ.

A similar study conducted by Almaituri S. in Saudi Arabia accessed knowledge, attitude and willingness among medical and health science students in Central Region, Saudi Arabia. It was seen that students related to medical field scored high knowledge scores compared to the other students from other health related sciences. This shows that organ donation has not been well understood by many. Another important finding included female students scored higher in all aspects than men. The study felt that the empathetic, selfless and sensitive attitude of females could have led to such a response.

Coming back to our study, Participants were given four options to choose to decide on their personal views about organ donation. Nearly 87% had positive opinions about organ donation and mentioned that they will definitely donate/would consider donating their organs. 11.1% seems dilemmatic about their decision to donate their organs while a minute proportion felt they do not want to donate their organs at all. The willingness to donate had no associations with gender, age or place.

When the reasons for the positive views were analysed, a good majority felt they would be happy to save a life. This highlights that people's decision was impacted by the humanistic core of organ donation. Other reasons elucidate that the people felt it as a moral responsibility towards their fellow beings and towards their loved ones in particular. Negative views had a good reason to ponder on: Lack of knowledge about organ donation, religious beliefs, ethical rights and scepticism towards healthcare department. This highlights how ignorance, myths and malpractices that lies in the medical system can prevent people from donating their organs.

Nearly 87.3% confirmed that they have not registered themselves in any organ donation problem, 11.1 % responded "maybe" while 1.6% have a confirmed registration. Through the previous discussion, we could understand that the majority expressed their desire to donate their organs, yet most of them are still not registered. This might be due to the fact that most of them have not received the facilities to donate their organs yet. Organ donation programmes must aim to reach out every town, cities and countries and must try to make the formalities less cumbersome so that people can feel comfortable to donate their organs. Zonal Transplant Coordination Centre (ZTCC), Pune, India is giving a perfect example in this regard. Over 1000 individuals from the Pune region pledged to donate their organs in a span of year using ZTCC's QR code. Once a person scans the QR code, he/she requires to fill in few important details. After submission, he/she gets a soft copy of the donor card. This innovative technology has promised a lot of patients of a better future awaiting them.

On questioning the source of information, Media played a pivotal role in showcasing about organ donation. In my opinion, this can be a positive as well as a negative sign. While, Media is regarded as a best tool to reach out to the masses, there is no regulation on what/how it portrays the information. Misconceptions and myths can be either busted or propagated and hence it is important to utilize and use it in the best way possible. A quarter of the population learned it through their education curriculum, which is a good sign. A few of them heard about it through their close ones, had seen an experience or related to the medical profession.

Nearly half of the respondents have discussed about organ donation with someone.

The topic regarding consent and consent related scenarios have brought gripping details to the table of discussion.

The mass (78%) finds consent before donating organs as "very important". This highlights that the participants believe in the ethical principle of patient autonomy and respect human rights. There is a strong association between age and attitude towards consent and religion and attitude towards consent. This highlights that the idea about autonomy can differ with different age groups or different religious beliefs and it hence can play a crucial role in deciding the importance of consent especially in matters like organ donation. The same results can be generalised when we discuss about the importance of sharing the decision about organ donation with a loved one, wherein a strong association can be deciphered between age and importance of sharing the decision. A similar chunk of population (73 %) considers it "very important".

In an interesting hypothetical scenario wherein, participants were asked to rate their reaction if a loved one shared that he/she wants to donate his/ her organ, 61.7% responded "completely supportive", while 25% responded supportive. A strong association was found with age.

To sum it up, age played a crucial role in attitude towards consent and consent related scenarios. Religion also had a role especially in attitude towards consent. Gender and place had no role whatsoever.

When it comes to donating organs, most prefer donating after death or giving consent in a related situation. On the question as to who would they donate if conditions permitted, the vast majority (80%) gave the response- "It does not matter, I would donate my organs to anyone, even a stranger". This was followed by loved ones and person they knew of. This was a good response proving the point that the participants regarded organ donation as a humanistic service. When it comes to the organs they would want to donate, kidneys followed by eyes, heart, liver and lungs were among the organs that got most of the votes. This can be attributed to the popularity of these organs as being one of the most transplanted organs in various countries. Some also felt unsure, which can indicate nervousness and lack of knowledge regarding the procedures undertaken to transplant the mentioned organs. Hands, Face, Intestines and Pancreas got the least votes. This might arise due to the fact that many of the respondents might be unaware of these organs being used in transplantation and might have even heard of it for the first time/ less often.

At the end of the survey, participants were asked if they would want to know more about organ donation after the survey, to access their curiosity. About 79.4% felt the affirmative, 12.7% responded "Maybe", while 7.9% didn't feel the need to. This was a positive sign that the survey was able to elicit an interest in people to understand more about organ donation. There was a strong association found between curiosity and religion. This is likely due to the fact that people from different religions might be curious about organ donation and might wonder if organ donation is considered 'ok' in their religion.

Finally, when asked if organ donation can build a "better future for mankind", a vast majority agreed completely, a few of them answered, "Maybe" while a tiny proportion disagreed. This could elucidate that most of the people in the survey considered organ donation as a step towards a better future for the human race.

Conclusions

Through the overall discussion on the survey can conclude few key points: There is a bright outlook towards organ donation, especially its humanistic purpose has stood out as one of the reasons why most of them support it in the first place. However, there might be a lack of knowledge which can give birth to myths and misconceptions. This can be detrimental to people's thoughts regarding it. In the study, age and religion had strong associations with factors concerning people's perspective. However, in the study, gender and place did not impact the responses in any way. Most people in the survey wholeheartedly supported the idea of consent and felt due importance must be given to a person's basic human rights and autonomy.

Strengths

This survey was a convenience-based sampling, wherein I could collect responses from people from different walks of life to contribute their opinions. The survey had both qualitative and quantitative straight forward questions that was able to analyse people's perspective in different dimensions.

Limitations

I have tried my best to solve all the issues and mitigate all the possible limitations, however the biggest limitation I experienced was the time constraint. The survey had been only conducted within a week and hence I managed to collect 63 responses. Hence, a generalised opinion cannot be made for the entire population based on the study's findings for now.

Acknowledgements

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Superstition: An Obstacle in Health and Healthcare Services

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ABSTRACT

In today's world, where scientific thinking is the point of view used to study every aspect of the health care system, superstitions still interact with how this service enters life and with many important aspects of it. Superstition is a set of beliefs inherent in a particular culture that differ from one culture to another. The prejudices of the patient and healthcare workers may differ, which can lead to a deterioration in the patient's health status if a common meeting point is not achieved. An ethical dilemma may arise such as the priority of superstition over beneficence or autonomy. There is ample evidence of the negative impact of superstition, a clear example of which is "Burari Death" when eleven members of an Indian family committed ritual suicide, in 2018. The family believed that their late father asked to perform this ritual for the benefit of the whole family.

Increasing knowledge about the role of superstitions, the culture associated with them, and their potential impact is essential to improving health care delivery. The presented paper aims to examine how superstitions affect healthcare professionals and patients individually and what impact is observed on health outcomes due to their interaction.

Keywords: Superstition, Healthcare workers, Patients, Belief, Culture, Ethics.

INTRODUCTION

In spite of modernization and rational ideology gaining significance over time, superstition still remain rooted in one's mind and affects them in multi-dimensional ways. Superstition connects two events without providing a natural or scientific explanation; in certain circumstances, superstition also incorporates chance (Hirshleifer D, Jian M, Zhang H, 2018). People become superstitious when confronted with difficulties like as death, illness, and unfavorable circumstances, which have long caused humans anxiety and feelings of failure, dread, and rage (Taher, M., Pashaeypoor, S., Cheraghi, M. A., Karimy, M., & Hoseini, A, 2020). As a result, superstition has an impact on not only a person's decision-making, but also on the outcomes of those decisions.

Oftentimes, answering the subject of what is superstition can be challenging because it is influenced by a variety of circumstances. Superstition can be defined as a belief that originates from two sources: an individual's personal experience and a cultural tradition that has been followed for centuries. Beliefs that are (1) based on ignorance, (2) illogical and imaginary, and (3) cannot be verified objectively and scientifically fall within the scope of superstition. Individuals develop beliefs based on their daily experiences, such as lucky charms, the phenomenon that they regard as lucky or unlucky, etc (Rumun AJ, 2014). On the other hand, cultural beliefs such as the Greek myth of Narcissus, or the belief that a crack in a mirror may break its spell and trap one's soul are the ones that are being followed since the time unknown (Nelson, Max, 2000).

Every person's beliefs differ from one another, whether they are based on personal experience

or culture. The disparity in beliefs between patients and their healthcare providers exemplifies the impact of superstition in the healthcare system. When these opposing viewpoints collide, ethics enters the equation. Giving consideration to one's superstitious belief, whether a patient or a health care provider, can sometimes obstruct the patient's autonomy and beneficence. As a result, it is vital to recognize these variances and prevent the health threat from occurring.

A sensible individual has flexible health ideas and is open to change (Kashdan, T. B., & Rottenberg, J., 2010). Recognition of beliefs aids in the attainment of health and therapeutic objectives. Medical personnel, such as physicians and nurses, who can recognize the patient's beliefs and values, which form the basis for their decisions and behaviors, are better equipped to provide effective teaching and counseling to the patient and pave the way for behavior change.

CULTURE: THE BASE OF SUPERSTITION

Superstition and culture always go hand in hand, because superstition cannot be separated from culture. Culture has a significant influence on how people think and act. Having faith and confidence in one's culture can lead to a shift in one's thinking and understanding of other people's perspectives even if their culture is different. Faith is the result of trust and confidence and this faith may be based on our religious convictions.

Culture encompasses a civilization's or social group's entire set of spiritual, material, intellectual, and emotional characteristics, such as the arts and letters, lifestyles, human rights, value systems, traditions, and beliefs (Fatik Baran Mandal, 2018). All of these characteristics contribute to a whole human life, which is necessary for man as a social animal. Culture differs greatly due to the numerous forces that influence it, while each culture has its own origins, it would not be able to flourish if it were not exposed to others. Laws and prohibitions apply to everyone in society and are based on societal standards and values. Death, entails funerals, which in traditional Buddhist funerals follow specific rites and procedures. The night before the burial, the deceased body is laid out with the head facing north. As a result, many people at home will refrain from sleeping in this manner, known as "Kita makura"(Gehan M. Anwar Deeb, 2015). These restrictions and prohibitions simply serve to reinforce superstitious ideas, because if anything goes wrong and people do not follow the rules, it is evidence that it occurred because they disobeyed the rules and violated natural laws.

CULTURE, SOCIETY AND SUPERSTITION.

A society is made up of people who share the same culture, but a culture is made up of the "things" that make up a society (Ulya, R. H., Thahar, H. E., Asri, Y., & Agustina, A. ,2018, April). Religious, cultural, or personal beliefs can all lead to superstitions. Superstitions can be found in almost every human society. The world is viewed differently by different societies and cultures. As a result, superstition may vary by region and country.

Superstition is based on human fears about unfathomable, unexplainable, unpredictable, and destructive natural forces. When people lose control over events, expected outcomes in their lives, or when the odds are stacked against them, they accept superstitious ideas. As a result, superstitions assist people in understanding their circumstances as meaningful, predictable, and controllable.

BURARI DEATHS-FAILURE OF SOCIETY

On July 1, 2018, the Chandawat's, a middle-class family of 11 living in Burari, Delhi, were discovered dead by hanging from the ceiling of their own home. It was initially thought to be a mass

murder, but after further inquiry, it was discovered that the family had actively participated in the event, referring to it as a "Badh Pooja" rite. 11 journals dated from 2007 to one week before the occurrence were discovered at the crime site, i.e., the family's home. A comprehensive account of the rite was found on the last page of the final diary. The family apparently believed that one of their relatives who died in 2007 visited them on a regular basis through the body of another relative, and that the deceased relative told them to perform the "Badh Pooja" ritual and assured them that they would come and save all of the family members and not let them die. The family's level of belief in this superstition is disturbing to not only a certain neighborhood but the entire human society, and there were no proper restrictions on the subject (Misra, N., Jha, H., & Tiwari, K., 2019).

The incident occurred just days after the family celebrated one of its members' engagement, demonstrating how strongly the family thought they would not die during the rite and that what was happening was true. It's difficult to think that such rites and rituals were practiced by members of the family who were well educated. Another worrisome issue is that the youthful generation, which is constantly questioning age-old conventions and beliefs, did not protest it, but instead participated in it. Despite being continuously exposed to modern thinking and progressive attitudes, the family's continued belief in such norms is a huge failing of society as a whole.

The family was thought to have a great rapport with their neighbors and friends. Despite spending so much time with the family, the people around them failed to see not only what was going on in the name of superstition, but also how the family's conduct was changing and becoming more secretive. Which led to the family's death and raised questions about the role of society in a person's life and how it failed to protect them.

Top of Form

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SUPERSTITION'S IMPACT ON HEALTHCARE SYSTEM AND PATIENTS

Superstitions have an impact on both personal and professional parts of life. It is difficult to change the thinking of people who continue to perform these old behaviors; nevertheless, education programs that take into account the cultural and religious sensitivity of ancient activities can help. Researches show that superstition has far-reaching effects on not only health-care utilization but also health outcomes and mortality. While there are findings based on a specific situation, which infers that emotional and cultural elements should be given more weight in health-care demand in general (Mandal, F. B., 2018).

Though superstition has faded as science has progressed, superstitious beliefs still have an impact on medical care. Even today, medical students in Pakistan think that mental illnesses have paranormal, magical, or mystic origins, and that mental illness can only be treated by religious, ecclesiastical, or faith-based individuals (Waqas, A., 2012).

Sometimes both the patients and the doctors believe in unbelievable. Despite the fact that they realize some rituals or superstitions cannot be true, people continue to believe them and follow the same route despite the lack of evidence. Superstition may improve a person's mental commitment to something, but as the saying goes, there are two sides to every coin (Albert, 2004). Because superstition has two sides, it can have an impact on a person's mental well-being (Gammeltoft, T., 2002).

SUPERSTITION IN PATIENTS:

Patients may have a variety of superstitions based on their own experiences and cultural customs.

Choosing a path of following the road of superstition, which may or may not be correct, and which is determined by the patient rather than the health care professional. Patients have the option of knowing what can hurt them and what can save their life, but they must also seek good medical guidance.

Patients at Japan's Kyoto University Hospital, for example, were found to prefer to stay longer than their doctors recommended (Hira, K., Fukui, T., Endoh, A., Rahman, M., & Maekawa, M., 1998). The patient's actions were ascribed to superstitious ideas about being released on a lucky or unlucky day, according to researchers. Allowing superstitious beliefs to determine when patients should be discharged from the hospital resulted in a large increase in medical costs. On the other hand, a healthcare professional may hold to a different form of superstitious belief. The date and time of any major surgery may be one of the most prominent examples of a dispute between healthcare providers and patients. At times, this can lead to severe conflicts between patients and professionals.

SUPERSTITION IN HEALTHCARE PROVIDERS:

Healthcare personnel, like patients, may have or acquire superstitions that they believe will or can improve their work and the quality of care they deliver to their patients. Although it is widely assumed that doctors and medical personnel do not believe in superstitions, some medical specializations will encounter more superstitions than the general public. Thus, avoiding superstitions in any field becomes unavoidable.

There are numerous superstitions among healthcare personnel, one of which some of them believe is when a full moon approaches, some health care providers prepare for the impact. Others will work the day before, the night before, or the day after the full moon shift and wonder why the shift is so bizarre, only to discover afterwards that it was the infamous full moon shift (Gehan M. Anwar Deeb, 2015). Another example is black clouds they have a long tradition in medical superstitions. In some contexts, this word refers to clinicians who appear to have a proclivity for bad outcomes, whereas in others, it refers to physicians who have a proclivity for busy shifts or complex patients. (Luei Wern Ong, Jeffrey D. Dawson, John W. Ely. 2018). As a result, healthcare personnel, like patients, have a set of beliefs that they adhere to in their job, which might lead to conflict.

CULTURAL DIFFERENCES: CONFLICT BETWEEN PATIENT AND HEALTHCARE PROVIDER

Every culture has its own set of customs and traditions that it adheres to, which might lead to a conflict between patients and professionals in the healthcare system. Accepting one's culture and superstitions while adhering to one's own might be challenging at times. As a result, it's understandable that people have different superstitions. This superstitious gap can often cause a big misunderstanding between the patient and their doctor.

Patients have the freedom to choose their therapy, but it is the doctors' obligation to determine what treatment should be given and how it should be delivered. For example, if a doctor has a certain opinion about how to treat a patient based on his cultural beliefs, the patient may object to the therapy because his culture forbids it. However, when this right and responsibility are in jeopardy, each individual's belief might either create harm or lead to a breach of ethics. If ethics is the way one treats or serves others, science can be seen to be more ethical than religion, but sometimes in case of superstitious belief people do face dilemma over what to pick. On the one hand, they have their beliefs, and on the other, they have the ethics that they believe they should follow.

CONCLUSION

According to studies, people around the world still believe in superstitions. Superstitious beliefs can influence human conduct in either a favorable or negative way. It is difficult to change the thinking of people who continue to perform these old behaviors; nevertheless, education programs that take into account the cultural and religious sensitivity of ancient activities can help. However, it was also suggested that health care staff learn to know local cultures and beliefs so that they can deal with potentially harmful activities for the health of their patients. Having superstitious beliefs is justified but having blind faith on that is not accepted. There has been and will continue to be a major conflict between superstition and life for millennia. It is impossible to be ethically right to believe in such things yet injure ourselves. Friday the 13th is a prime example of cultural collusion because it is considered lucky in many cultures and unlucky in others, and if the patient believes it is lucky and the healthcare worker does not, it can lead to a variety of disagreements between them, which can negatively impact the quality of health care services (Scanlon, T. J., Luben, R. N., Scanlon, F. L., & Singleton, N., 1993). With the fading of old superstitious beliefs, new beliefs continue to emerge among the next generation.

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Racial Discrimination and Disparities in Public Health

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ABSTRACT

Some elements of an individual's health are affected not only by healthcare but also by socioeconomic or social determinants in one's life. One of the social elements would be based on race. Racism, rather than race, is a major factor in those social determinants of health. Sustained exposure to chronic stressors in the form of systemic and individual practices has been postulated as a mechanism through which racism, not a race, influences racial group health and findings.

There is some evidence of racism's deleterious impact on health as another risk factor. Racial discrimination hurts people's physical and emotional health. One of which can be understood with the help of a 2015 study that found that racism is regularly linked to higher mental health disorders such as depression, anxiety, and psychological stress. There have been cases where healthcare providers are race prejudice. The physicians have been seen to hold a conventional image based on their patient's race which prejudiced their knowledge on patient conduct and in diagnosing them. A study showed that approximately 1 in 10 people from ethnic groups were discriminated against the people who tendered to get the vaccine. In order to improve the public health, we need to increase the knowledge about how racism impacts health and the ideologies associated with it. Correcting discrepancies due to determinants like racism has no cinch solution. Thus, the objective of this research paper is to analyze and assess the impact of racial discrimination and the disparities as one of the social determinants impacting the public health.

KEYWORDS: Social discrimination, public health, racism.

INTRODUCTION

Racism is a system that assigns value and determines opportunity based on how someone resembles or the color of their skin. It comprises structures, regulations, behaviors, standards, and conventions. As a result, some people in society are disadvantaged while others are unfairly benefited. Even though racial health disparities have been substantiated both historically and in more recent instances, the structures used to explain these correlations have differed. These correlations range from earlier theories about underlying racial differences in biological vulnerability to more recent theories concentrated on the effects of socioeconomic inequality. (Chae DH et al ,2011)

Racism, both interpersonal and systemic, has a harmful impact on millions of people's mental and physical health, abstaining them from reaching their full potential and, as a result, undermining our country's health (Walensky RP, 2021) It makes it difficult for people to achieve their optimal health. Racism, as a primary driver of health disparities, goes against one of the public health's key missions: providing conditions that allow everyone to live their best lives(Tulane university blog, 2020)

The nexus between race and health is frequently interpreted in terms of how or what racism

implies in various eras. Even so, biological and social structures in various periods can be addressed in order to comprehend race and its impact on quality of life. There are discrepancies between evaluating the systemic impact of racism on health and assessing the impact of health on a personal level. There are a variety of causes for the connection between race and health, ranging from community factors to the genetic level.(Krieger 2008)

Whilst efforts have been undertaken to sensitize people about racism and its influence on public health, it is still perceived bias or overlooked. Despite these initiatives, racism seems to be on the constant rise.

RACISM AND HEALTH

Racism has a direct influence on the mental and physical health and well-being of people of color, including high levels of stress, feelings of powerlessness, and a plethora of other negative outcomes. Toxic stress can emerge early in childhood as a result of a build-up of daily pressures linked to racism and prejudice. The physical, emotional, cognitive, and behavioral health of children is influenced by stress throughout their lives. Racism, prejudice, and bias also obstruct access to socioeconomic resources that have an impact on health outcomes(Tulane university blog, 2020)

According to this conceptual analysis, racism is linked to adverse health, with the link being stronger for poor mental well-being and weaker for poor physical health (Berger M, Sarnyai Z, 2015). The fact that racism has a greater relationship to mental health outcomes than physical health creates uncertainty about how racism impacts health. Prolonged racism exposure may be associated with dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis that may wreak havoc on the body's processes and lead to physical problems like heart disease and obesity(Berger M, Sarnyai Z, 2015). Racism's repercussions on cognitive-affective areas such as the prefrontal cortex, anterior cingulate cortex, amygdala, and thalamus are akin to anxiety, depression, and psychosis pathways(Berger M, Sarnyai Z, 2015)

Additionally, neuroimaging studies have revealed that stimulation of these regions in response to social rejection is connected with conscience distress levels and is comparable to the stimulation of pain-related areas(Eisenberger N, Lieberman M, Williams K., 2003)Racism-related attentiveness and anxiety are surfacing as health-related issues in their very own way, and such neurological modifications may be predecessors to them. There is a lot of evidence that the stress rooted in racism can have long-term bodily consequences. Stress caused due to racism can raise blood pressure and damage the immune system, increasing the risk of long-term health problems. (Eisenberger N,Lieberman M,Williams K., 2003)

Racial and ethnic health biases, which show that socially disadvantaged racial minorities have impoverished health compared to the whites, are substantial, ubiquitous across a wide variety of attributes, and are enduring. They can be used to determine the commencement of sickness, as well as the ferocity and duration of the illness. Socioeconomic status, which can be measured by wealth, education, occupational repute, or income is the main factor causing health disparities and is linked to racial disparities. Racism functions and emerges on a number of ecological levels as an ideology. Jones (2000) divides racism into three categories: institutionalized, personally mediated, and internalized racism. Studies have found that three levels of racism have been demonstrated to have harmful consequences for racial minority groups in a number of health and sickness outcomes, as well as pathways via which racism may operate.

Racism is linked to imbalances in society and health through three key pathways. The most prim-

itive type of racism is cultural racism. This is the embedding of black and other nonwhites' inferiority into the wider culture's belief systems, representations, and norms, leading to widespread unfavorable ideas (stereotypes) and behaviors (bias) that denigrate, isolate, and subjugate nonwhite racial communities. Cultural factors contribute to racial prejudice and negative racial stereotypes, which can reduce support for equitable policy initiatives, set off impairment of health psychological responses in stigmatized people like internalized racism and perceived stigma, and enable overt and covert biases that limit access to preferred resources, such as medical care.

Institutional or structural racism is the second road to follow. These terms are used interchangeably to describe socioeconomic systems and behaviors that limit socially stigmatized people access to coveted resources and opportunities. Racism is a system that creates and maintains rules and institutions that allow the paramount group to distribute desirable societal opportunities and assets to racial groups considered inferior. Residential segregation is one example of a racist institution that has a variety of negative effects on health. The forceful relocation and expulsion of American Indians to reservations is another instance of forced isolation of a repressed racial group.

Segregation is a major determinant of socioeconomic status, which is a predictive factor of concerning health factors. Segregation can also lead to higher exposure to a number of mental, physical, and chemical stressors associated with community and living conditions, such as criminality, violence, and air pollution it's degradation. It can also have an impact on the availability and development of public services, spanning from medical to civic.

Individual-level discrimination is the third-way racism works. Condemned racial groups are treated differently by individuals and societal institutions. On the other hand, mediated racism refers to attitudes and ideas regarding racial groupings' inferiority, prejudice, and discriminatory treatment of persons on the basis of racial bias that is experienced firsthand at the individual level. Internalized racism, as distinguished from internalized racism, recognizes the existence of unfavorable sociocultural attitudes about one's own racial group's fundamental values.

One study links racism to specific mental disorders(Lewis TT, Cogburn CD, Williams DR. 2015), For example, one of the articles reviewed that both racial and nonracial chronic everyday discrimination were constructively associated with higher odds of any lifetime (LT) disorder, not only that but the lifetime mood and anxiety disorders, are seen in adults 55 years and older. It was also connected to an increased risk of depressive symptoms and severe mental suffering. Everyday Discrimination on the basis of race was also linked to a higher incidence of mental problems in a study that was conducted by the National Latino and Asian American Study (NLAAS) (Mouzon DM,.et.al,2017) albeit the link was larger among Mexicans than among Puerto Ricans.

BUT HOW DO DIFFERENCES ARISE?

These discrepancies are caused by a variety of variables. The following are some of the commonest reality that surrounds it. Within the healthcare system, there are inequities in the standard of care. Access to health care, particularly preventive and therapeutic services, varies. Variation in underlying health conditions based on differences in life chances and stressors. can have an impact on health status.

There is a substantial variation in access to healthcare services. The utilization of healthcare facilities changes dramatically depending on a patient's race. Hispanics and other racial minorities were less likely than whites to have medical-aid coverage in the United States. Furthermore, owing to their race, they have potential issues seeking it. The options for health-related services is constrained. It is

important to highlight that, despite being on par, there are variations across races in terms of accessing health services, with black people receiving lower-quality care than white residents.

With a few outliers, racial and ethnic minorities have greater rates of ailment and fatality than non-minorities, despite steady improvements in cumulative population health. For example, of any racial or ethnic group in the United States, African Americans have the greatest possible rates of death from heart disease, cancer, and HIV/AIDS (Smedley B.D et al , 2003) . A substantial percentage of American Indians perish from various ailments like diabetes. Diabetes threatens the lives of nearly twice as many Hispanic Americans as non-Hispanic whites.

Besides that, some Asian-American subpopulations get a much-elevated incidence of stomach, liver, and cervical cancer than the national norm. The roots of these disparities in health status are daunting and elucidated, although they may mostly represent socioeconomic differences, variances in health-related risk factors, environmental deterioration, and direct and indirect prejudiced outcomes. (Williams, 1999).

THE IMPACT OF RACIAL BIAS ON HEALTH OUTCOMES AND SERVICES

Patients are seen to have less trust in the healthcare workers after being encountered racial discrimination. They have difficulty in patient-doctor communication, they have doubts about the care provided to them due to their race. Although the effects were not always under investigation, racism was often related to delayed professional help and medical prognosis.

For instance, a prospective study published in 2016 provided data from the studies between 1980 to 2015 on racism and alcoholism (Gilbert PA, Zemore SE, 2-16). The numerous studies relied on African Americans, and a significant proportion revealed positive links between heightened racism, alcohol intake, and other drinking-related concerns. The review found that the quality of the research varied greatly, emphasizing the necessity for more longitudinal data gathering and the use of representative samples. Similarly, a report on African-Americans published (2019) unearthed a relation between racism and alcohol intake, heavy episodic drinking, at-risk drinking, and detrimental outcomes.

Current findings contribute to the growing claims suggesting discrimination plays a role in racial bias(Colen CG.,et.al,2018)Another study examined the relation between socially economic statuses and racism for a period of a 33-year period(Colen CG.,et.al,2018). The increase in the social and economic status of whites was due to less discrimination against them. In contrast to their socioeconomically stable peers, upward mobility for blacks and Hispanics is associated with increased prejudice. Importantly, discrimination was found to account for a large portion of the black-white discrepancy in self-rated health (but not the Hispanic-white gap).

INTERPERSONAL RACIAL PREJUDICE AND DIVISIVE STEREOTYPES

The standard of health care rendered by racial minorities and other disenfranchised minorities can be compromised by rational and emotional biases. Stigma can often be triggered by latent stereotypes based on race and ethnicity. Racial bias in the medical system can have repercussions on the interplay between healthcare practitioners and patients, treatment planning, and patient health prognoses (Tulane university blog, 2020)

To illustrate, implicit notions and detrimental attitudes might alter how physicians and other healthcare personnel interact with and indulge with patients of color. It can also have an impact on

the medical care treatments referred to them (Tulane university blog, 2020)

Disparities, prejudice, and constitutional violations still persist in today's society. Ethnicity, evidently, has a substantial impact on how people are judged, appraised, and regarded. We understand that prejudice, both intended and unintentional, has a significant influence on health and that it impedes many people's potential to advance freely to the prosperity and development of their societies. Racism is the notion that different peoples have unique characteristics, traits, or skills, especially in classifying them as inherently different.(Murray LR, 2015), But on contrary, indirect racism refers to behaviors and thoughts regarding racial groupings' mediocrity, bias, and blatant discrimination of persons on the grounds of institutional racism that is experienced firsthand at the micro-level level. Internalized racism on other hand, refers to the acceptance of unfavorable socio-cultural views about somebody's racial group's inherent worth.

CONCLUSION

Race has a significant impact on health, as evidenced that reveal consistent racial trends in health distribution. However, there is still a lot of disagreement on why race contributes for health, whose health consequences and patterns it matters for, and at what degrees it matters for. We argue in this paper that racial differences in health are caused by the problem of racism, not by race per se. The influence of race is evident in the collection of beliefs, preconceptions, and biases that are associated with race, both outwardly and inwardly putting groups of individuals into comparative positions of authority and impoverishment. Individual behavioral or biological explanations for racial differences in health are far too frequent. A socio-psychobiological approach, on the other hand, focuses on how racism's social disparities affect health, both directly and indirectly creating cognitive, behavioral, and biological sensitivity to disease. By turning the conventional biopsychosocial paradigm on its head, this population-level approach stresses racism's involvement in establishing inequitable racial disparities in illness onset.

As a result, we may conclude that racism has long-term health impacts that persist despite abatement over time. Racial discrimination appears to be an increasing risk factor for illness and a driver to racial inequities in health, according to growing data. There is a need to fill research gaps and improve our insight into the best approaches for reducing discrimination's detrimental impacts

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Psychological Effects of COVID-19

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ABSTRACT

Background- SARS-COV-2 emerged in Wuhan, China, and spread worldwide in the year 2019. This COVID-19 pandemic has changed the life of people. People experience stress, anxiety, depression and insomnia during the pandemic period. We can observe the usage of alcohol, drugs, use of social media and devices. This enormity of living in isolation has tremendously changed the life of people impacting their job making them jobless, less focus on studies among students, heavy stress on health workers.

Based upon the evidence, taking care of our mental health, keeping a regular routine, staying busy, focusing on positive thoughts, setting priorities and making connections with people will help to solve these stress problems.

Objective: - The main aim of this paper is to bring out the psychological effects of the COVID-19 pandemic on students of various fields and health workers and the general public and usage of indicators of depression and anxiety like panic attacks, struggle with self-esteem, phase of lethargy, mood swings. This paper questions the public about the realization of severe pandemic lockdown mental effect on them.

Methodology: - Analysis is based upon the cross-sectional quantitative study process, having questionnaire response study, in terms of bibliography and also review of literature.

Results: - The psychological indicators that are considered presented differences between the evaluated time period. Fear to travel outside, low self-esteem, panic attacks are main indicators of depression and anxiety.

Conclusion: - The differences found in the psychological indicators between the evaluated periods revealed that psychological care of health personnel which should be a priority of public health. Spending more time with family and friends and supporting each other. Limiting screen time of electronic devices and avoiding usage of alcohol, tobacco and drugs. Participating in regular physical activity, like yoga and meditation these all will help to solve the problem and lead a good life.

Keywords: - COVID-19, SARS-CoV-2, Anxiety, depression, stress, loneliness, mental health.

Introduction

Coronavirus disease (COVID-19) is an outrageous respiratory illness caused by a newly discovered coronavirus strain known as SARS-COV-2.Which was first noticed in Wuhan city, Hubei china in late December 2019 (Chan et al., 2020). Since March 2021, new COVID-19 cases rise for a consecutive week globally and millions of new cases and new deaths are reported. During the beginning phase of covid-19 we observed a sudden increase in deaths and at the end of phase the number of

deaths decreased.

China reported lots of deaths worldwide. There are different reasons for deaths of people; some died because they caught COVID-19 infection, another reason for death is they were on the frontline, and they are the first and only point of contact with the healthcare system in the first initial stage.

The acute effects of COVID-19 are devastating and life-threatening which are affecting a wide range of organ systems and causing effects. Reports of effects on the brain include inflammation which has been linked with cognitive deficits and psychiatric manifestations (Boldrini et al., 2021). The effects have been like stressing the brain, by which people have lost their faith in themselves, lack of confidence, no motivation, continuous stress leading depression, Alzheimer's, gastrointestinal problems, heart problems, anxiety. This effect is providing a negative curve to human life.

Healthcare workers are disproportionately affected by the varying waves of COVID-19 pandemic both mentally and physically**.** (Saladino, Algeri and Auriemma, 2022).

They experienced high levels of work-based stress. Because they had to do a lot of things in a short span of time, they needed to provide first aid for critically-aid patients along with this they needed to monitor quarantined patients to isolate suspected and diagnosed patients and their close contacts to further prevent the spread of disease. They have lost their connections with their family, lack of closeness, work induced stress along with lack of sleep.

As no. of cases were increasing every day, covid- 19 had attracted many peoples around the world. And resulting in the general population, health giver staff and students became victims of psychological problems such as anxiety , depression , loneliness affecting the life, mental stress and much more.

Medical staff stress was associated with lack of resources, redeployment to unfamiliar roles , younger staff taking on additional responsibilities to shield at-risk staff , migrants staff having worries about how to support families if they are falling ill and suppressing their health. (Xie et al., 2022). And resulting in medical staff suffering from Anxiety, Depression, insomnia , and traumatic disorder (The probability of anxiety and depression of front-line medical staff is more compared to nonclinical medical staff.)

The main impacts that were seen in the general population is the direct effect of disease and disease outbreak which include mental and neurological manifestation, fear and anxiety. Also indirect effects of isolation, lock-down which includes loneliness, depression and stress is observed along with these indirects effects of COVID-19 also include socioeconomic cutout resulting in unemployment, impoverishment , inequalities and affecting the country and whole globe.

Social distancing with confinement of adolescents like young peers at home can increase the occurrence of situations of disagreement and aggression with large tone, fight with parents, on especially in poorer families who live in precarious homes without conditions to adapt adequately to remote learning and the home office situation (Miranda et al., 2020) when we consider of general public, many become homeless, stress induced diseases, lockdown no jobs leading to anxiety, depression and more and more negative approach to life leading to suicide attempts. More use recreational activities like smoking causes cancer, heart disease, stroke, lung diseases, diabetes, and chronic obstructive pulmonary disease (COPD), which includes emphysema and chronic bronchitis. Smoking also increases risk for tuberculosis, certain eye diseases, and problems of the immune system, including rheumatoid arthritis. High blood pressure, heart disease, stroke, liver disease, and digestive problems. Cancer of the breast, mouth, throat, esophagus, voice box, liver, colon, and rectum. Immune system getting weak, increasing the chances of getting sick. Learning and memory problems, including dementia

and poor school performance. These are the negative aspects of drinking alcohol. Online gambling leads to serious effects, including loss of jobs, failed relationships, and severe debt. Problem of gambling is often associated with mental health problems, including depression, anxiety, and mood disorders affecting many lives.

Depression and anxiety are common mental health problems experienced by university students. Being in higher education is being associated with many stressors and transition taking events, and students fall within the age range when common mental health problems are at their developmental peak. Depression and anxiety can affect students' academic performance and social functioning, cause significant burden at university, and potentially affect their future career opportunities.

Stigma can make people feel isolated and even abandoned. (Morrish, N. and Medina-Lara, A., 2022). There are sleep pattern problems among students leading to unhealthy lifestyle along with many problems like acne problems, improper digestion, poor eyesight, lack of confidence, more negative introvert nature, less open-minded, reduced physical activity and no interest in studies as have online classes affecting their academics. The electronic devices and social media have negative effect leading to lack of conversation among family members and friends of peers.

There are many negative effects that affect student life around the globe. This pandemic led to lockdown leading to onscreen classes for the whole day stressing out students and teachers and office workers. (Chan et al., 2020) There are many defects of this like sleep deprivation, our research study says our routine sleep wake cycle follows circadian rhythm. when there is light our body becomes alert in case of dark light there is production of melatonin inducing sleepiness. Electronic devices like smartphones, tablets, laptops emit blue light leading to more alertness and deprivation producing melatonin leading to stress and strain to eyesight and body and as well as mental health. There is also increased risk of obesity, stress leading to increase in insulin leading to diabetes. Loss of cognitive ability, impaired social skills, weak emotional judgment, delay in learning. In addition to drugs, tobacco and alcohol lead to many diseases like lung cancer, stroke, diabetes, hearing loss, vision loss, causing yellow-brown stains on tongue, teeth and fingers and so on.

Methodology

Study design –Usage of cross-sectional quantitative study process is done. We performed cross sectional study on 100 participant which include mostly medical students, healthcare workers and the general population from different countries. Most of the participants from india and student who are studying in Georgian American University and different universities and medical professionals.

Setting –Webanketa is platform for questionnaire formation. We distributed this questionnaire to medical students, healthcare workers and general population in different countries through WhatsApp, Gmail, Instagram, telegram, Facebook. Most of the questions were mandatory in survey based of classification. Survey is done in 15 days.

Study subjects- The 115 participants were chosen by simple random technique. These includes students, healthcare workers and general population from different countries with different race, ethnicity and age. This survey includes question related to their gender, nationality, education, working hours, depression and anxiety feeling, stress, mood swings, lethargy, fear related to covid19, concern of family health status of students and family, financial problem, online education and various techniques used for reliving stress and anxiety and also, we specified some questions for health care worker which include changes in staffing, changes in PPE kit use, changes in patient volume due to COVID-19.

Statistical analysis –Excel sheet is used for data analysis. Basic descriptive statistics were computed for all variables. Basic descriptive statistics were computed for all variables and reported as number of cases (frequency) and percentage for categorical variables and means and standard deviation (SD) or medians as appropriate for continuous variables. In excel sheets parameters like depression, anxiety, phase of lethargy was evaluated in excel sheet.

Hypothesis – Covid19 pandemic causes psychological problems like anxiety, depression, stress among students, healthcare workers and general population. Many factors like financial crisis, negative output behavior is debited.

Result - We analyzed that 7.96% respondents were from age 10-18, 62.8%from age 19-27 years,12.4 % from age 28-36 years, 4.42%from age 37-45 years and 8.85% from age 46-54years As we consider gender 36.3% of respondents were male, 63.7% of respondents were female. 88.6% of the population responded that they belong of Indian nationality while 11.4% belong to other countries. Out of the total response, 50.4 % of respondents were students, 2.65 % were doctors, 12.4% were workers.

In the case of anxiety 51.3% of respondents that they were anxious due to covid-19, 48.7% didn't feel any anxiety, and 34.5% of respondents felt anxiety because of fear of catching an infection. 30.97% didn't feel any fear of catching an infection and the remaining 34.51 % responded they weren't sure. In the case of depression, 45.1% responded as they felt depressed, and 54.9 % responded they didn't feel depressed. Among the respondents, 51.3% felt loneliness due to covid-19 whereas 48.7% didn't feel any kind of loneliness. Among the population, 44.3% responded as they felt they struggled with their self-esteem due to covid19 while 55.8% of respondents didn't feel any self-esteem issues due to the pandemic. about mood swings, we observed in 70.8% of respondents and 29.2 % didn't feel any mood swing.

In the case of sleep patterns, 51.3 % responded they sleep around 4-6 hours, and 44.3% sleep around 8- 10 hours. 19.5% of responders reported they worked for 5 hours, 38.9% reported they worked for 7 hours, 29.2% reported they worked for 12 hours whereas 1.77% reported they worked for 24 hours during the COVID pandemic

We asked a few questions specific to healthcare workers. 85 % of respondents feel very concerned for their family and 15% feel somewhat concerned. 85.7% of healthcare workers reported overwork and lack of sleep during the pandemic whereas 14.3% said no. when we asked what was the most concerning factor for healthcare workers during a pandemic, 74.4% of healthcare workers responded handling patient and patient safety was the most concerning factor, 82.5% healthcare worker responded spreading awareness about vaccination was most concerning factor whereas 63.4% reported exhaustion due to PPE kit and 80% reported mental and health care disturbance.

We asked about they have used many techniques to relieve stress /anxiety during a pandemic, when asked about meditation 60.2% of responders said yes that meditation helped them to relieve anxiety and stress, and 39.8% said no. when we asked About yoga/exercise 62.8% said yoga /exercise helped them to relieve stress /anxiety, 37.2% said no. morning walk 59.3% said morning walk helped them to relieve stress and anxiety and 40.7% said no . when we asked would they shared problem with friend/family members 70.8% said yes and 29.2 said they didn't share the problem with family and friends.

Discussion: -The study focused on exploring the mental health status of the students of various fields, healthcare workers, and the general public regarding anxiety, depression, loneliness, mood swings and insomnia, and exhaustion due to PPE kit, which is more specific to healthcare workers. In our study, we found that the rate of anxiety, depression, loneliness, and mood swings in the 114 participants was 51.33%, 45.13%, 51.33%, and 70.8% respectively and in healthcare workers, we observed a rate of insomnia (lack of sleep) and exhaustion due to PPE kit were 85.71%, 63.41% respectively. This result shows that a substantial proportion of medical staff that helped fight COVID-19 had mental health problems, especially insomnia (mei li et al., 2022). Long working hours, high-intensity work, sleep disturbance, and high psychological pressure contributed to severe sleep disorders (mei li et al., 2022). Most healthcare workers were very concerned about their families because they were working in hospitals for long hours and staying far from their families.

College students experienced a wide assortment of stressors during the epidemic, including quarantines of cities with infected cases and succeeding social isolation, struggle with self-esteem, inconvenience of daily life, phase of lethargy, prolonged duration and uncertainty of epidemic, study maladjustment of distant learning method (e.g. live interactive class on third-party platforms, such Google classroom video conferencing (Yan et al., 2021). The general population was suffering from mental health problems due to the loss of jobs and no economic support. However, in our study we found that lots of people are trying to use different ways to relieve anxiety and stress which include meditation, yoga, working on hobbies, or sharing problems with friends or family members.

Recommendations

For the general population

1. Limit the sources of stress such as social media , mobile phones.
2. Yoga and meditation help to reduce stress and improve concentration.
3. Keep a regular schedule.
4. Focus on the benefits of isolation.
5. Seek the help of professional psychiatrists if needed.
6. Self-counseling and participation in society.

For healthcare workers –

7. The government should provide basic materials and PPE kits .
8. Adjust sleep disorders of medical workers.
9. Establish communication between medical workers and their families.

Conclusion: Covid-19 has changed the life of people. Taking care of our mental health, keeping regular routine, staying busy, focusing on positive thoughts, setting priorities and making connections with people will help to solve these stress problems. Spending more time with family and friends and supporting each other. Limiting screen time of electronic devices and avoiding usage of alcohol, tobacco and drugs. Participating in regular Physical activity, like yoga and meditation these all will help to solve the problem and lead a good life.

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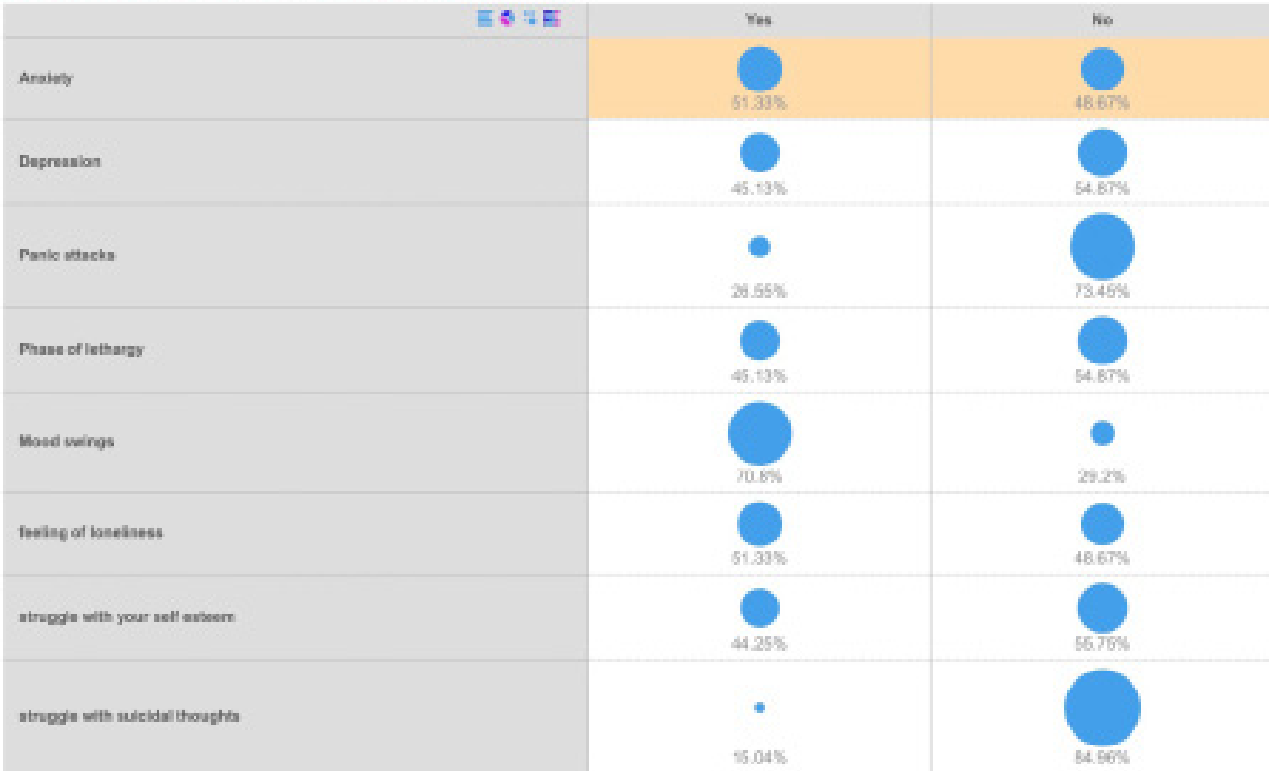
Annexes

Which one of the following is most concerning factors for healthcare worker during this pandemic

Have you experienced any one of the following during the pandemic ?



Have you used any one of the following technique to relieve stress /anxiety during this period of time.

*** changes in staffing due to COVID-19**

»N

»-

»NA

»NA

».

»NA

»Staffing is increased during covids

»No

»I think doctor’s are putting all their efforts along with their co workers... So may be the changes aren’t required

»Not applicable

»Yes

»Yes

»Online working at the beginning

»Hard to concentrate

».

»My work schedule has not changed

»No changes.

»Yes

»Na

»Na

Yes

»NA

»Many of them left the job due to covid fear.

»No
»Most of them left the job due to fear of covid.
»_
».
»Nothing

*** changes in patient volumes due to COVID-19**

»N
»-
»NA
»NA
».
»NA
»After covid people have started using sanitizer and masks so patient number is decreased after covid 19.
»No
»There are few requirements
»Not applicable
»Yes
»Yes
»Increased
».
»They mostly were not changed because of Covid, I didn’t work for Covid patients
»No changes
»Yes
»Na
»Na
»Yes
»Increase in the number of patients.
»Ni
»Lot of patients to be treated.
»_
».
»Increased
»Suddenly rises and suddenly declines what to say

Ongoing COVID-19 Patient with Pre-existing Idiopathic Pulmonary Fibrosis and the Use of Pirfenidone in such Cases: A Case Report

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European University;
Supervisor: Ketevan Tsanava; MD, PhD;

ABSTRACT

Background: Diagnosis and treatment of Idiopathic Pulmonary Fibrosis (IPF) has been greatly influenced by the COVID-19 pandemic. Not only it has impacted the prognosis, but also the approach for treating these patients. Traditional antifibrotics used in IPF patients should be encouraged.

Objectives: The aim of this study was to evaluate our own patient with confirmed IPF disease who also got infected with COVID-19 and now was administered Pirfenidone to treat the deep fibrotic changes that progressed in the patient over 5 years.

Methods: The case was studied during the period from November 2020 - July 2021 by us in Vivamedi hospital Tbilisi. The systemic review was made using available literature from online libraries like PubMed and Google Scholar. The report was prepared after going through all lab results and other investigations that were performed during the course of treatment.

Results: The patient was treated mainly with Oxygen therapy, Pirfenidone and anticoagulants. The patient recovered from COVID-19 and the co-existing pulmonary fibrosis was also resolved. The vitals of the patient were stabilised and the lab results returned to normal. The patient was discharged from the hospital after 10 days and is in good condition now.

Conclusion: The survival after Covid-19 pneumonia in a patient with IPF under antifibrotic treatment without serious deterioration is a novel case. Antifibrotics which are available or developing not only have a role in treating such cases but can also be valuable in treating severe COVID-19 in patients without IPF, and might also be helpful preventing pulmonary fibrosis after SARS-CoV-2 infection.

Keywords: COVID-19, Idiopathic Pulmonary Fibrosis, Pirfenidone, co- existing, etc.

INTRODUCTION

Interstitial lung diseases (ILDs) comprise a wide spectrum of acute and chronic lung diseases that cause progressive scarring of the lung tissue, causing compromised blood oxygenation and respiratory function. The most common form is the idiopathic pulmonary fibrosis (IPF), which majorly affects the older population. It is a specific form of chronic, progressive, fibrosing interstitial pneumonia of unknown cause. It is defined by the histopathologic and/or radiologic pattern of usual interstitial pneumonia. Viral infections can set off acute exacerbations, which has poor prognosis. ILD is associated with higher susceptibility to COVID-19 infection, and the impact was notably significant in males and younger patients. Also, COVID-19 patients with ILD have shown more severe clinical manifestations, including increased mortality than the ones without ILD. There are only a handful of recommendations for patients with IPF when they happen to get infected with COVID-19.

The aim of this study was to understand how COVID-19 affects a patient with idiopathic pulmonary fibrosis and also the possibility of management of such patients with antifibrotics along with

other traditional methods. The atypicalness of our case is like the patient is different because already the patient was suffering from ILD and in such pandemic she also gets infected with COVID-19 so, survival rate for such patient is near impossible but still we treated her with traditional methods and most important drug that is pirfenidone. Due to its rarity, we report this case and check all previous research on it.

METHODS AND MATERIALS

The research included a systemic review and a case of 66-year-old female patient. All the lab reports and test results were thoroughly studied. The literature review was made using the available literature on online libraries like PubMed and Google Scholar and then the case report was prepared with the patient's anamnesis and the lab results before and after the treatment. The study carried on from November 2020 – July 2021.

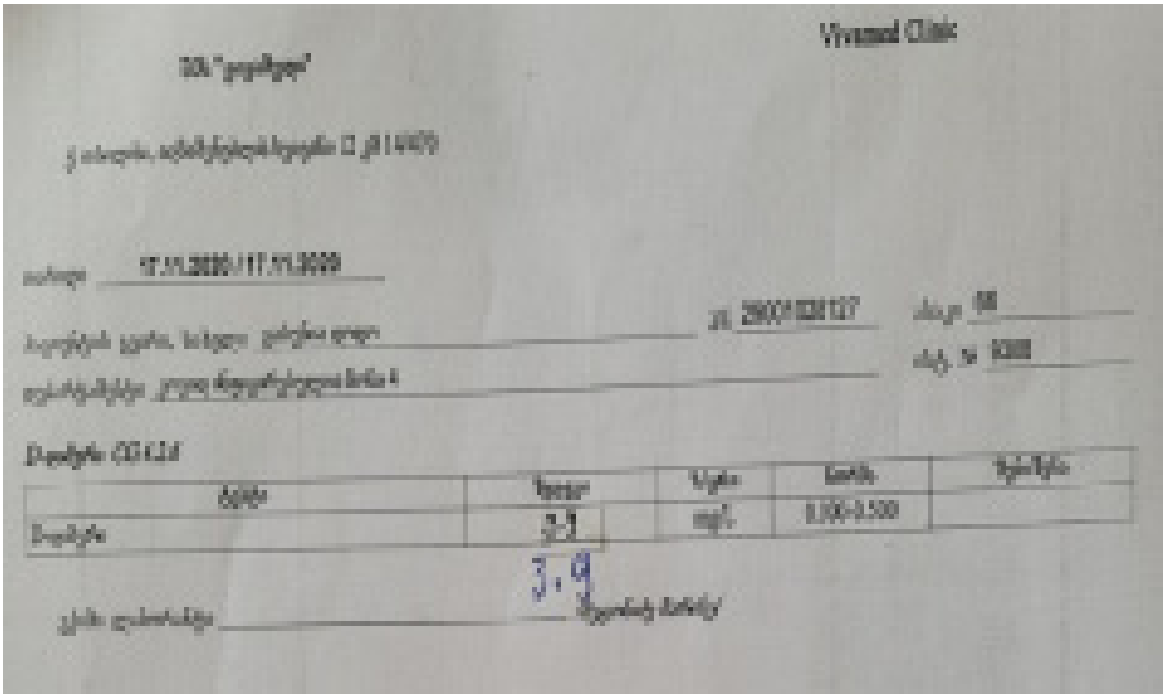
CASE REPORT

The patient presented with the complains of a few days of sweating, chills, high temperature, dizziness, dry cough and breath insufficiency. RT-PCR was performed and the result came out to be positive for COVID-19. Treatment was started in the COVID special department as per the recommendations. It is also crucial to note that the patient was diagnosed with acute pneumonia five years ago and had been receiving antibiotic treatment for it which has been unsuccessful as her breath insufficiency was progressing. Hence, CT scan was performed and the diagnosis turned out to be Idiopathic Pulmonary Fibrosis. The condition was confirmed by the pulmonologist using spirography and an experimental treatment was started with 'Pirfenidone'.

The patient was acute (moderately severe) upon arrival. The main problem responsible for her condition was the underlying IPF and the prognosis was poor. She had a temperature of 38ºC, sweating, chills, dry cough, respiratory rate 30-32, breath insufficiency, blood pressure 135/75, heart rate 90 and oxygen saturation at 93%. Upon examination, the patient was found to be well oriented in time and space. Her speech was fluent and the peripheral lymph nodes were not enlarged. Bilateral dense vesicular sounds were heard on auscultation and the breath was weakened in the lower lobes of lung. Dry expiratory crackles could be heard while cardiac auscultation revealed dull rhythmic sound. There was no pain on performing abdominal inspection and the liver, spleen or kidney were not palpable. CT examination demonstrated no deformity in the chest cavity or any mediastinal deviation. The trachea, main bronchus and the lobar bronchus were not obstructed but their walls were thickened and had dilations on the inner surface (bronchiectasis). Small hypodense areas could be noted paratracheally on the right side. There was reduced pneumatization of both lungs in a diffuse and uneven manner due to pneumofibrosis, more prominently seen in lower lobes. Clarification of the paraseptal tissues could be seen. Additionally, ground-glass infiltrative changes were seen in both the lungs and rough fibrotic zones were expressed in areas of infiltration. IV contrast showed a more clearly enhanced picture. There was no pericardial or pleural effusion.

Vivamed Clinic

17.11.2020 / 17.11.2020



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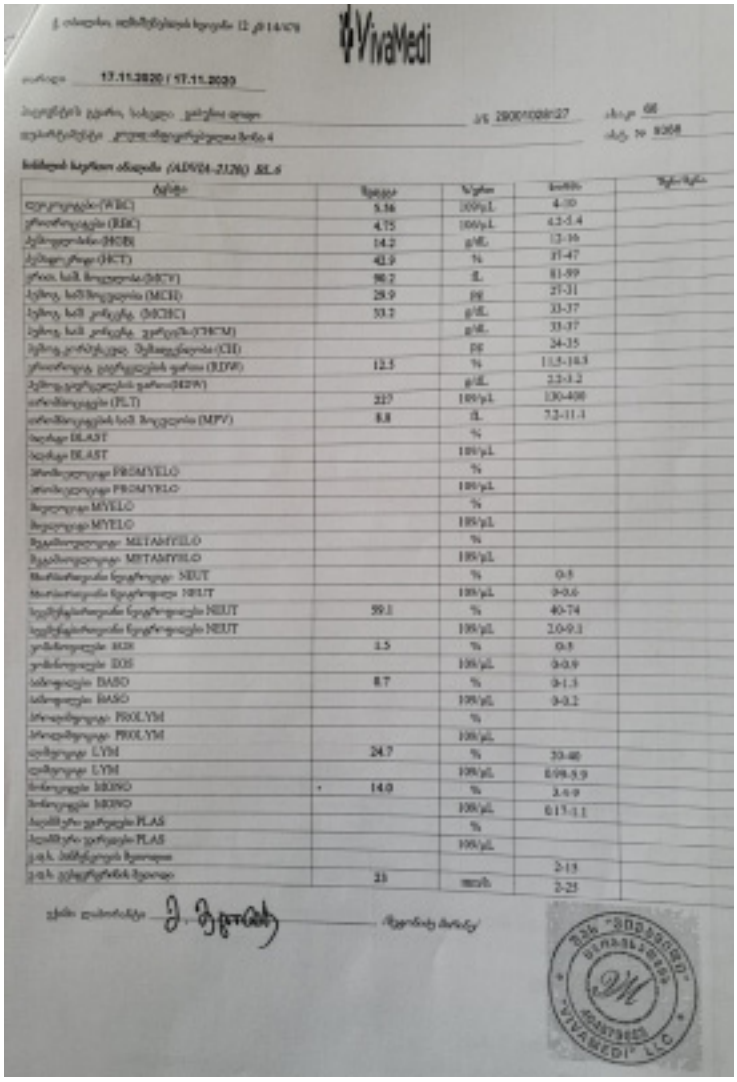
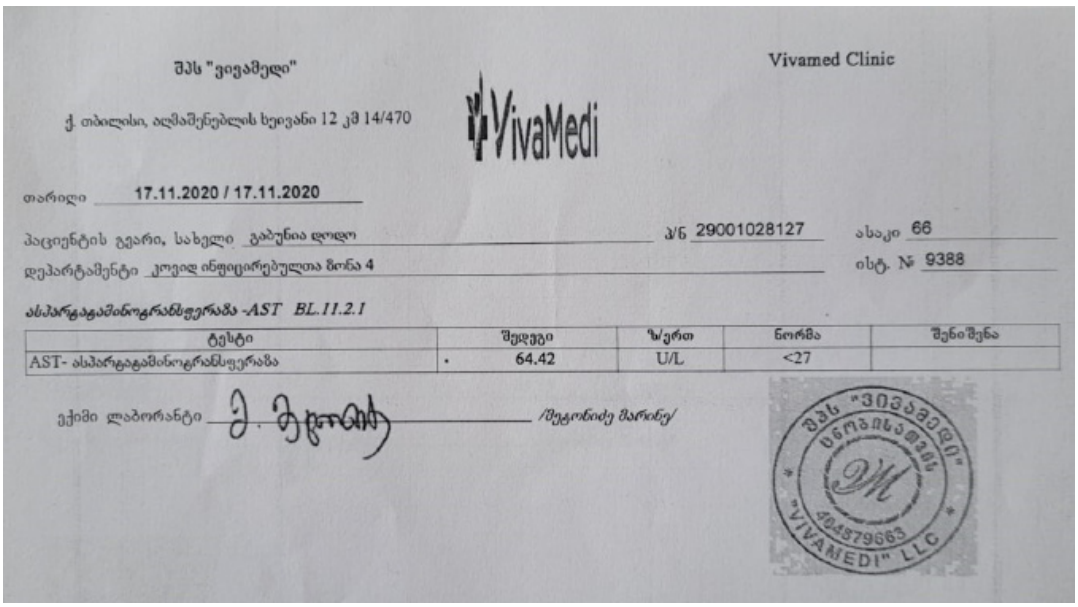


The main diagnosis was COVID-19 associated pneumonia (absorptive phase) and pneumofibrosis on both sides. The patient was treated with pirfenidone, oxygen supplementation and anticoagulants. As per her lab reports on the first and last day of hospitalization (fig.1 and 2), the vitals were successfully stabilised and she was discharged within 10 days. This all procedure and review of patient took place in Vivamedi Clinic, TBILISI under guidance of our prof. Qetevan Tsanava and doctors of hospital.

Figure – 1. Lab results of patient on first day of hospitalization which shows abnormal AST level, increase in CRP level, D dimer level abnormality, GLK and LDH values are also, abnormal.



შპს "ვივამედი"

ქ. თბილისი, აღმაშენებლის ხეივანი 12 კმ 14/470

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პაციენტის გვარი, სახელი გაბუნია დოდო პ/ნ 29001028127 ასაკი 66

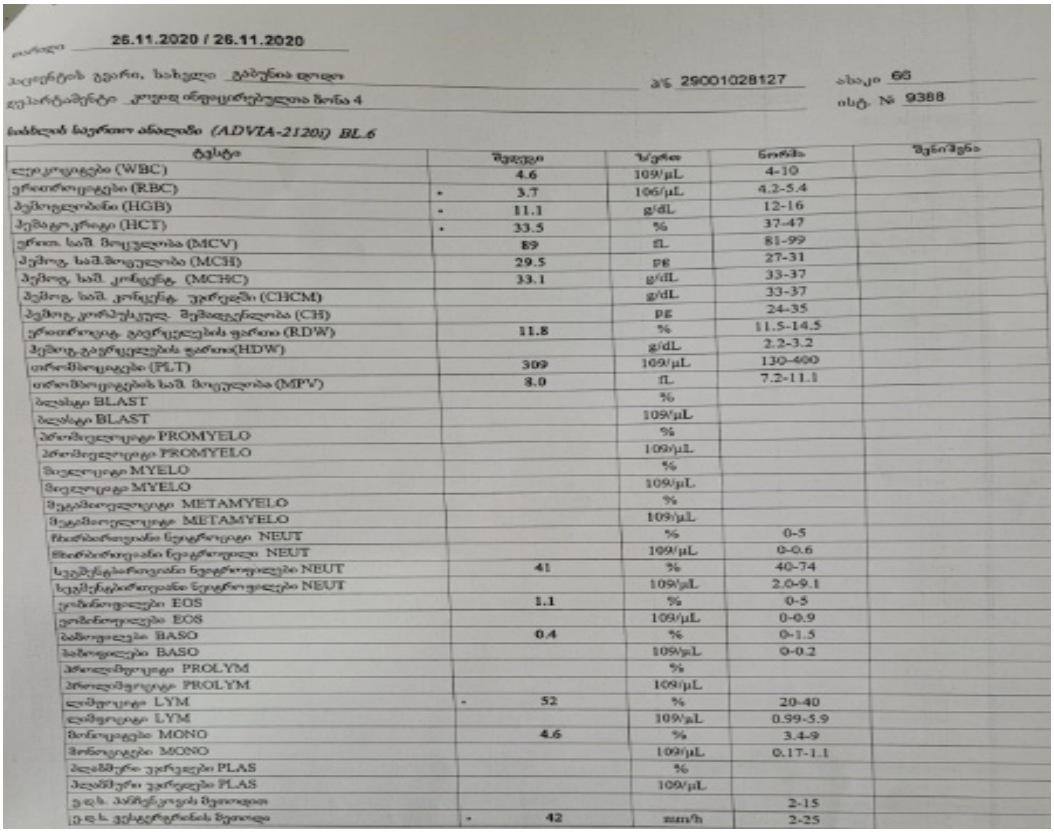
დეპარტამენტი კოვიდ ინფიცირებულთა ბონა 4 ისტ. № 9388

ასპარტატამინოტრანსფერაზა -AST BL.11.2.1

ტესტი	შედეგი	ზ/ერთ	ნორმა	შენიშვნა
AST- ასპარტატამინოტრანსფერაზა	64.42	U/L	<27	

ექიმი ლაბორანტი /შეგონიძე მარიტე/

შპს "ვივამედი" ტაბახმელა "VIVAMEDI" LLC 404379663



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პაციენტის გვარი, სახელი გაბუნია დოდო პ/ნ 29001028127 ასაკი 66

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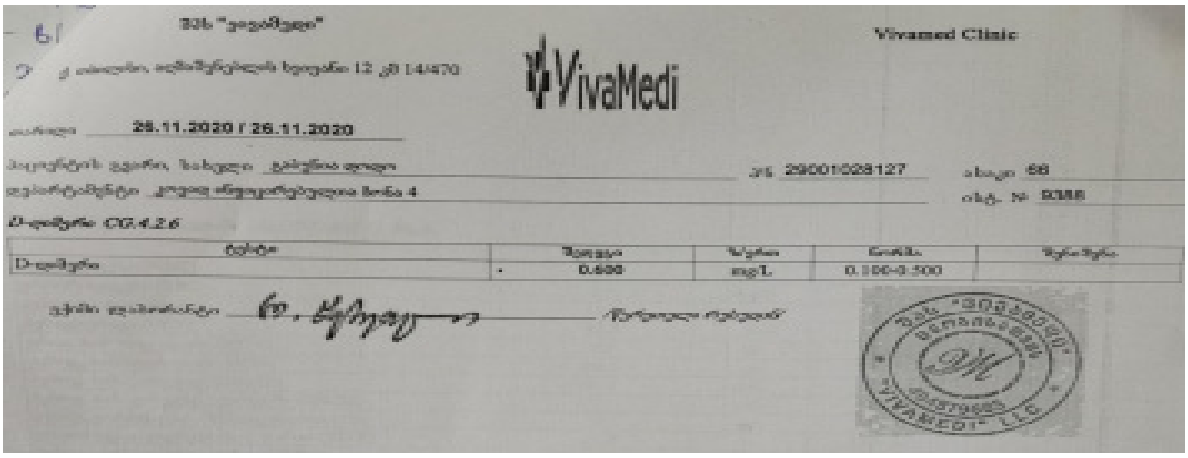
სისხლის ბიოქიმიური ანალიზი (ADVIA-2120i) BL.6

ტესტი	შედეგი	ზ/ერთ	ნორმა	შენიშვნა
ლეიკოციტები (WBC)	4.6	10⁹/µL	4-10	
ერითროციტები (RBC)	3.7	10⁶/µL	4.2-5.4	
ჰემოგლობინი (HGB)	11.1	g/dL	12-16	
ჰემატოკრიტი (HCT)	33.5	%	37-47	
ერითრ. საშ. მოცულობა (MCV)	89	fL	81-99	
ჰემოგლ. საშ.მოცულობა (MCH)	29.5	pg	27-31	
ჰემოგლ. საშ. კონცენტრ. (MCHC)	33.1	g/dL	33-37	
ჰემოგლ. საშ. კონცენტრ. უდრეკლი (CHCM)		g/dL	33-37	
ჰემოგლ. კორპუსკულ. შემადგენლობა (CH)		pg	24-35	
ერითროციტ. განაწილების ფართი (RDW)	11.8	%	11.5-14.5	
ჰემოგლ.განაწილების ფართი(HDW)		g/dL	2.2-3.2	
თრომბოციტები (PLT)	309	10⁹/µL	130-400	
თრომბოციტების საშ. მოცულობა (MPV)	8.0	fL	7.2-11.1	
ბლასტი BLAST		%		
ბლასტი BLAST		10⁹/µL		
პრომიელოციტი PROMYELO		%		
პრომიელოციტი PROMYELO		10⁹/µL		
მიელოციტი MYELO		%		
მიელოციტი MYELO		10⁹/µL		
მეტამიელოციტი METAMYELO		%		
მეტამიელოციტი METAMYELO		10⁹/µL		
ჩხირბირთვიანი ნეიტროფილი NEUT		%	0-5	
ჩხირბირთვიანი ნეიტროფილი NEUT		10⁹/µL	0-0.6	
სეგმენტბირთვიანი ნეიტროფილები NEUT	41	%	40-74	
სეგმენტბირთვიანი ნეიტროფილები NEUT		10⁹/µL	2.0-9.1	
ეოზინოფილები EOS	1.1	%	0-5	
ეოზინოფილები EOS		10⁹/µL	0-0.9	
ბაზოფილები BASO	0.4	%	0-1.5	
ბაზოფილები BASO		10⁹/µL	0-0.2	
პროლიმფოციტი PROLYM		%		
პროლიმფოციტი PROLYM		10⁹/µL		
ლიმფოციტი LYM	52	%	20-40	
ლიმფოციტი LYM		10⁹/µL	0.99-5.9	
მონოციტები MONO	4.6	%	3.4-9	
მონოციტები MONO		10⁹/µL	0.17-1.1	
პლაზმური უჯრედები PLAS		%		
პლაზმური უჯრედები PLAS		10⁹/µL		
ე.წ.ს. პანშენკოვის მეთოდი			2-15	
ე.წ.ს. ვესტერგრენის მეთოდი	42	mm/h	2-25	

Figure – 2. Lab results on last day of hospitalization before discharging the patient. We have very significantly improved in D-dimer levels, CRP and AST levels are also improved and in normal range.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Vivamed Clinic
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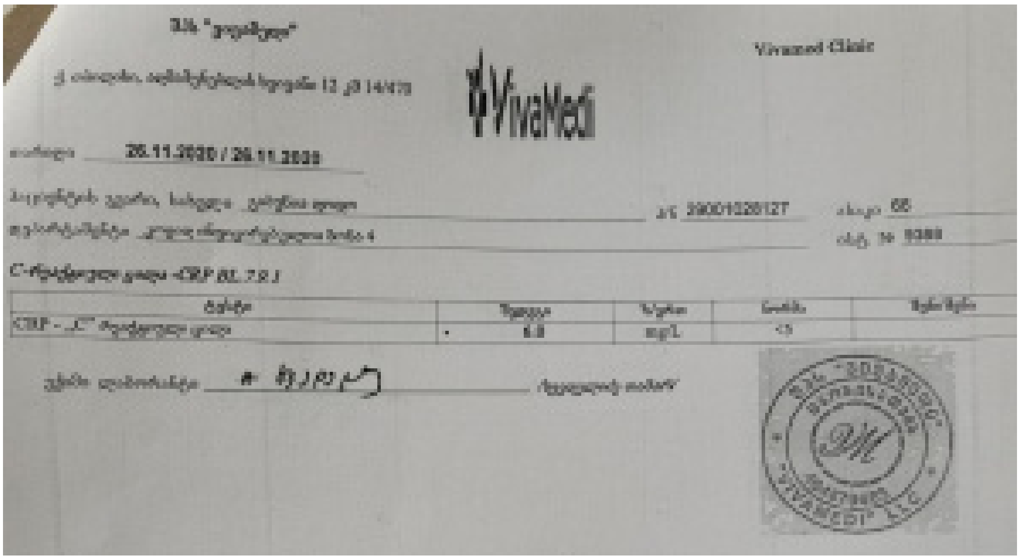
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DISCUSSION

Acute exacerbation of IPF and severe cases of COVID-19 show similar clinical profile as both affect the elderly, the ones suffering from diabetes, cigarette smoke exposure or ischemic heart disease. Among the underlying diseases, chronic respiratory comorbidities show more significant impact on the clinical picture of COVID-19. Thoracic malignancy and Chronic Obstructive Pulmonary Disease (COPD) are the risk factors for more severe manifestations and poor prognosis of COVID-19. As per studies, asthma does not possess any major risk for severity and susceptibility of COVID-19. Although, there is very limited literature available on clinical course of COVID-19 in patients with ILD. 3.9

The exacerbated inflammatory state, associated with the fibrotic tissue stimulated by SARS-CoV-2, plays a key role in critical clinical cases. As the viral infection progresses to more severe stages, cytokine storm causes lung damage with extensive fibrosis and rapid onset of respiratory distress syndrome. Using antifibrotic agents, such as pirfenidone, can have therapeutic efficacy in addressing fatal lungs complications. Pirfenidone is the drug of choice in managing idiopathic pulmonary fibrosis (IPF). It is administered orally, 2-3 tablets thrice a day, for at least 4 weeks. With a diversity of mechanisms of action reduces the inflammatory and fibrotic state of lung tissue. It downregulates the cytokines, including connective tissue growth factor (CTGF), transforming growth factor (TGF)- β1, tumour necrosis factor (TNF)- α and platelet-derived growth factors (PDGF). Also, pirfenidone is a reactive oxygen species (ROS) scavenger, as well as it supresses the expression of ACE receptor, the major cellular receptor for COVID-19. There are also some other features of pirfenidone, including antifibrotic effects and anti-apoptotic effects, which make it a suitable treatment for COVID-19. Moreover, employing a combined therapy of anti-inflammatories with antifibrotics, like pirfenidone could give additional clinical benefits.

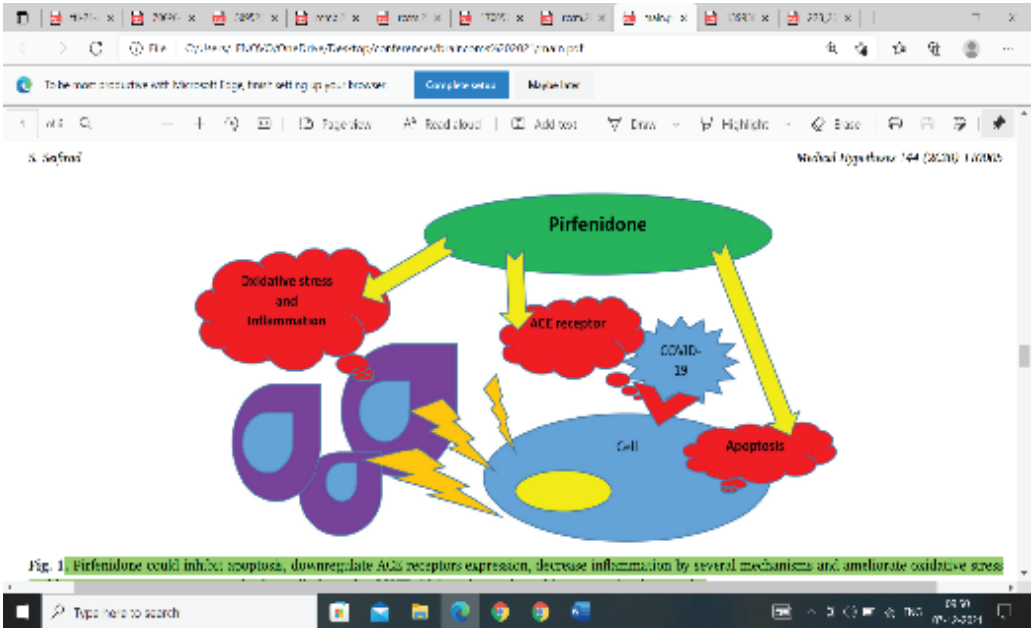

Fig.3 Pirfenidone inhibits apoptosis, downregulates the expression of ACE receptors, reduces inflammation through various mechanisms and ameliorates oxidative stress, thereby, protects pneumocytes from the invasion of COVUD-19 and the resulting cytokine storm.

CONCLUSION

The survival after Covid-19 pneumonia in a patient with IPF under antifibrotic treatment without serious deterioration is a novel case. The physicians today are facing the challenge to protect and treat the patients with ILD from COVID-19. Telemedicine has played a vital role in dealing with this pandemic. The case of our patient demonstrated that combining pirfenidone with the existing medications would not only cease the progression of the disease but also help with managing the residual pulmonary fibrotic damage in the post healing phase. With its pleotropic action mechanisms, pirfenidone can even be used to treat the COVID-19 patients without IPF. As, we know that in such pandemic situation we all are fond of treatment for COVID-19 and how we can stop it. In such uncurable condition our patient who was already suffering from Idiopathic pulmonary fibrosis had this infection so, we started using pirfenidone to our patient and after 10 days of our patient results came normal and has improved our patient symptoms. So, we conclude by our case that we can do clinical trials on covid patients by using pirfenidone and its effect on their health. This expertise can be used in clinical practice to minimize the risk of COVID-19 and IPF.

ACKONWLEDGEMENT

A very special thanks to Hospital and staff of Vivamedi Clinic, Tbilisi. Especially Dr. Qetevan Tsanava to share such a great experience of her with us, guide us and follow with patient. Also, patient who gave us consent and by that opportunity we can review this novel case.

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Descriptive Study of Sleep Habits among Undergraduates from University of Georgia During the Covid-19

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The University of Georgia;
Supervisor: Mariam Gogichadze; MD, PhD;

ABSTRACT

Introduction: The impact of sleep among students is very crucial for their mental health. The present study aimed to assess sleep quality among the international (Int. Stud.) and Georgian students (Geo. Stud) of the University of Georgia (UG) during the COVID-19 pandemic.

Methodology: This cross-sectional study was conducted among the Int. Stud. and Geo. Stud. at the UG, from October 24th, 2021, to February 8th, 2022. The survey was dispersed by using a Google form hosted by the University of Georgia. The collected data included social-demographic variables such as age, gender, countries, and the Pittsburgh Sleep Quality Index scale (PSQI), a widely used questionnaire. The P values were two sided and significant at < 0.05.

Results: 500 students participated in this study out of which, 360 (72%) and 140 (28%) students were Georgian students and international students respectively. The Georgian students below 20 years (50.8%) were more than the rest of the age categories, which were 21-30 (48.1%) and >31 years old (1.1%). Among Int. Stud. the group of age between 21 and 30 (74.3%) was more than the rest, as <20 years (22.1%) and >31 years (3.6%). The PSQI results obtained showed that Geo. Stud (48.6%), and Int. Stud. (31.4%) reported poor subjective sleep quality. The Poor SSQ was high among the females of both groups. There was significance relation between subjective sleep quality and age among Georgian students ($p<0.05$) but there was not statistically significance between gender and other subcomponents of PSQI.

Conclusions: This study extensively described that the poor sleep quality and the higher sleep disturbances have a prevalence among Int.Stud. The Geo.stud., below 20 years old were more vulnerable to poor sleep quality. Further prospective studies are needed to explore the pathways for quality of sleeps among students in more detail.

Keywords: Sleep, Sleep pattern, Sleep quality, Students, PSQI,

1.0 Introduction

Sleep is essential for healthy living which everyone experiences always especially during the night fall. Though scientists are still looking into sleep study with its impact on the body physiological processes (Cirelli, & Tononi, 2017). Poor sleep can cause psychological problems (Pensuksan, *et al.,* 2016; Oginska, & Pokorski 2006), but some students feel dizziness and drowsiness when they sleep late which can equally affect their daily activities. Some factors are attributed to sleep disturbance such as poor academic performance (Shonia, et al., 2020), high credit load (Azad, *et al.,* 2015) and late-night sleep especially during the examination period (Phillips, et al., 2017, Škerstedt, *et al.,* 2012). Some of the students prefer to live solitary in an apartment while some prefers roommates.

The reason why some of these students preferred to stay alone is due to the problems associated with having a roommate like loud disturbing noises during nighttime which can interrupt sleep (Buboltz, *et al.,* 2001). In essence, most students who have roommates, usually had short sleep duration especially when they shared the same room. The condition in reference to hygiene, tidiness and spaciousness of the room could affect the quality of sleep such as room exposed to air pollutants such as tobacco smoke and bad odor (Altun, *et al.*, 2012).

Some students have family issues which could cause them to have irregular sleep wake cycle and short sleep duration. As they wake up several times at night just to think about what the family is being through. Though effect of body pain or physical injury can affect the students' sleep specially after a strenuous sporting activity (Altun, *et al.,* 2012). Students who had history of suicide attempt, trauma and abuse of harmful substances have been proven to have sleep difficulty (Vail-Smith, *et al.,* 2009). The effect of life situations on the mental state of students which triggered nightmares, aggressive behavior and depression eventually resulted to sleep deprivation (Nadorff, Nazem and Fiske, 2011). Some institutions are now interested in understanding the sleep quality among the students because of reduced number of enrolled students, low attendance to lectures, poor academic performance, psychological issues, high consumption of drugs, high records of depression, suicide rate, high stress level and insomnia that are commonly reported among students as major causes of sleep disorders and sleep deprivation. This study aimed to assess sleep quality among the international (Int. Stud.) and Georgian students (Geo. Stud) of the University of Georgia (UG) during the COVID- 19 pandemic.

2.0 Materials and Methods

2.1 Study Design

This cross-sectional study was designed to investigate on the sleep quality among the Int. Stud. and Geo. Stud. at UG during Covid-19, using the Pittsburgh Sleep Quality Index scale (PSQI).

2.2 Participants

This survey included male and female of different age grades (>18years) and countries studying at the University of Georgia.

Data collection

The data was collected by an online survey which was created using Google forms from October 24th, 2021, to February 8th, 2022. The link was shared among the students after receiving approval from the University ethical board. During this period, the University was on session and the responses were voluntary and anonymous.

2.4 Assessment

2.4.1 Demographic variables

This included gender, age group (<20, 21-30, >31), and nationality (country of origin). The countries were specified by the students and four (4) countries whose participants were > 20 was represented as the rest < 20 were grouped as others. The specified countries were Egypt, India, Iran, and Nigeria.

2.4.2 PSQI

We used the Pittsburgh Sleep Quality Index scale (PSQI) which was recommended as a good survey for assessing sleep quality (Backhaus, *et al.,* 2002). The survey contains 19 self-rated questions,

these comprise the seven component scores each of which ranges between 0 – 3 points (0) shows no difficulty and 3 shows severe difficulty). The subcomponents included subjective sleep quality (SSQ), sleep latency (SL), sleep duration (SD), habitual sleep efficiency (HSE), sleep disturbances (SDs), use of medications (USM) and daytime sleep dysfunction (DSD). The seven subcomponents were added to get one global score (GS) which ranged from 0 – 21 points and above 7 indicated poor sleep quality.

2.5 Ethical Consideration

The study was approved by the Institutional Review Board of the School of Health Sciences, the University of Georgia (Institutional Reference No: UGREC-01-22).

2.6 Statistical analysis

The descriptive analysis was performed using the Statistical Package for the Social Sciences (SPSS) version 23.0 software (SPSS Inc., Chicago, IL, USA). The Chi-square test was used to determine relationship between the age and the sleep quality as well as the gender and the poor sleep quality. The P- values were two sided and significant at $P < 0.05$.

3.0 Results

3.1 Demographic Variables

Out of the 500 university students who participated in this study, 360 (72%) students were Geo. stud. and 140 (28%) students were Int. stud. from Egypt, India, Iran, Nigeria, and other countries. 274 (76.1%) females and 86 (23.9%) males were Geo. stud. while 96 (68.6) females and 44 (31.4%) males were Int. stud.

3.1.1 The distribution between Geo. Stud. and Int. stud. by Age grade

From **Fig 1.0** represents. The age < 20 years (183 (50.8%) in Georgian chart (**Fig. 1.0a**) was higher than the rest, 21-30years (173(48.1%) and >31years (4(1.1%). But in the International chart (Fig. 1.0b), age 21-30years (104(74.3%) was higher than the rest of the age categories, <20years (31(22.1%) and >31years (5(3.6%).

3.1.2 The distribution among International Students

Fig. 2.0 represents the demographic variables of each represented countries among international students. The countries presented were Egypt (23(16.4%), India (38 (27.1%), Iran (28(20%), Nigeria (30(21.4%) and other countries (21(15%)**.**

Figure 1.0: Distribution between Geo. Stud. and Int. stud. by Age

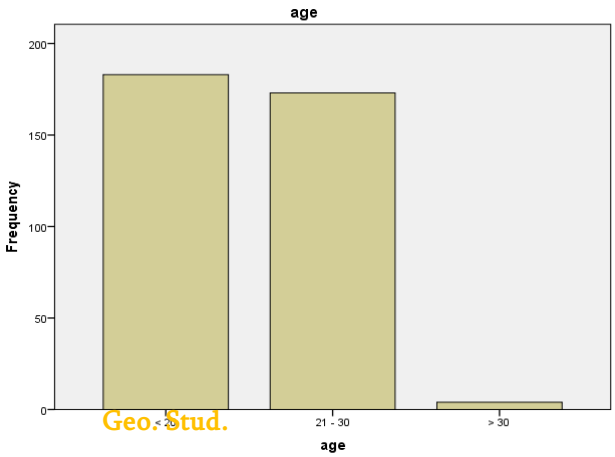


Fig. 1.0b

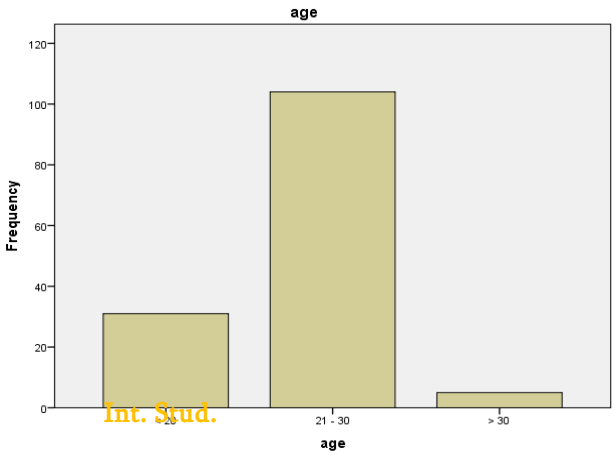
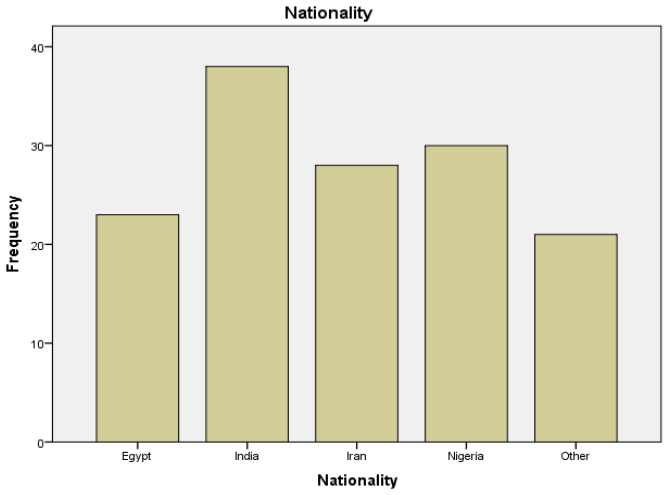


Figure 2.0: Distribution among International Students



3.2 Distribution of students PSQI components and among Geo. Stud.

3.2.1 SSQ, SL, SD and HSE components

From **figure 3.0**, 154 (51.4%) had good subjective sleep quality (SSQ) and 175 (48.6%) had poor SSQ; 201 (55.8%) had high sleep latency (SL) and 159 (44.2%) had low SL; 123 (34.2%) less than 7hours sleep duration (SD) and 237 (65.8%) had more than 7hours; 139 (38.6%) had less than 75% habitual sleep efficiency (HSE) and 221 (61.4%) had more than 75%.

3.2.2 SDs, USM, DSD and GC components

99(27.2%) had high sleep disturbances (SDs) and 261 (72.5%) had low SDs; 331(91.9%) had less than 1 time/week on use of medications (USM) and 29 (8.1%) had more than 1 time/week; 161 (44.7%) had high day time sleep dysfunction (DSD) and 199 (55.3%) had low; 173 (48.1%) had less than 7 scores in the global score (GS) and 187 (51.9%) had more than 7 which indicated poor sleep.

3.3 Distribution of students PSQI components and among Int. Stud.,

3.3.1 SSQ, SL, SD and HSE components

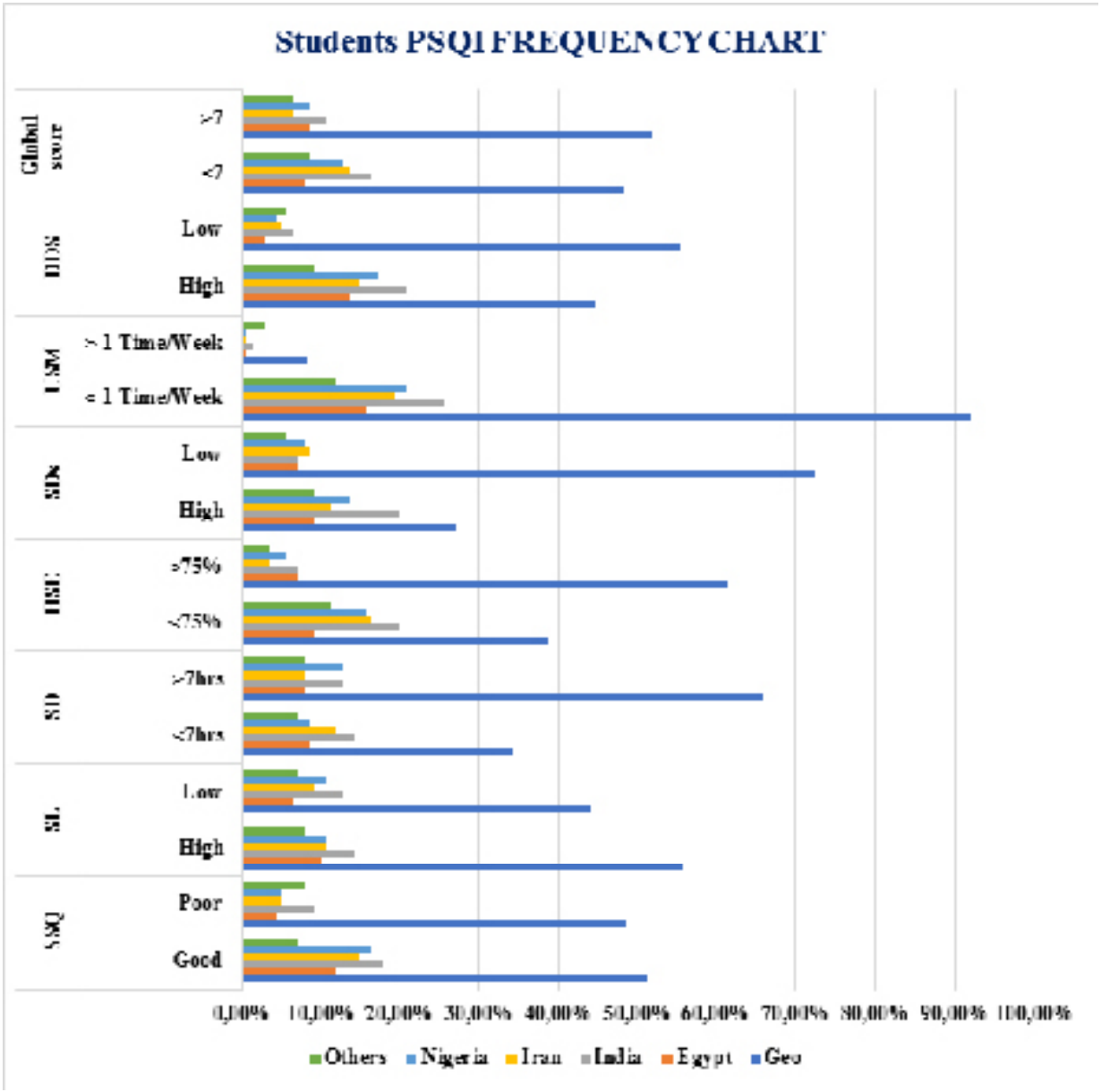
From the **figure 3.0**, 96 (68.6%) had good SSQ and 44 (31.4%) had poor sleep quality; 75 (53.6%) had high SL and 65 (46.4%) had low SL; 71 (50.7%) less than 7hours SD and 69 (49.3%) had

more than 7hours; 102 (72.9%) had less than 75% HSE and 38 (27.1%) had more than 75%.

3.3.2 SDs, USM, DSD and GC components

89 (63.6%) had high SDs and 51 (36.4%) had low SDs; 131 (93.6%) had less than 1 time/week on USM and 9 (6.4%) had more than 1 time/week; 106 (75.7%)) had high DSD and 34 (24.3%) had low; 83 (59.3%) had less than 7 scores in GS and 57 (40.7%) had more than 7.

Figure 3.0 Distribution of Students PSQI Frequency Chart



3.4 The PSQI and the prevalence of poor sleep quality during the COVID- 19 among the Geo. Stud. and the Int. stud. by their age and gender.

The result showed that the prevalence of poor subjective sleep quality (SSQ) was significantly higher among students < 20years (**Table 3**, $P < 0.05$). There was no significant difference from the rest of the components **(Table 3-6).**

PSQI		Geo. stud. N=360						Total (%)	X^2	P- value
		Age								
		< 20		21-30		> 31				
		(N)	%	(N)	%	(N)	%			
SSQ	Good	78	21.7%	103	28.6%	4	1.1%	51.4%	14.011	< 0.05
Poor		105	29.2%	70	19.4%	0	0.0%	48.6%		
SL	Low	79	21.9%	77	21.4%	3	0.8%	44.2%	1.624	> 0.05
High		104	28.9%	96	26.7%	1	0.3%	55.8%		
SD	> 7 hrs	109	30.3%	125	34.7%	3	0.8%	65.8%	6.519	> 0.05
< 7 hrs		74	20.6%	48	13.3%	1	0.3%	34.2%		
HSE	> 75%	108	30.0%	110	30.6%	3	0.8%	61.4%	1.099	> 0.05
< 75%		75	20.8%	63	17.5%	1	0.3%	38.6%		
SDs	Low	135	37.5%	122	33.9%	4	1.1%	72.5%	2.005	> 0.05
High		48	13.3%	51	14.2%	0	0.0%	27.5%		
USM	< 1 Time/ Week	169	46.9%	158	43.9%	4	1.1%	91.9%	0.479	> 0.05
> 1 Time/Week		14	3.9%	15	4.2%	0	0.0%	8.1%		
DSD	Low	93	25.8%	102	28.3%	4	1.1%	55.3%	5.656	> 0.05
High		90	25.0%	71	19.7%	0	0.0%	44.7%		
GS	< 7	77	21.4%	92	25.6%	4	1.1%	48.1%	8.764	> 0.05
	> 7	106	29.4%	81	22.5%	0	0.0%	51.9%		

Table 3- Comparison of the PSQI component scores and the Geo. Stud. age grade

In PSQI sub components, **SSQ**- Poor (Very poor and Pretty poor), Good (Very good and pretty good); **SL**- High(31–60 minutes and > 60 minutes), Low (<15 minutes and 16–30 minutes); **SDs**- Low(-scores between 0 y, 1–9 points), High (scores between 10–18 y, 19–27 points); **DSD-**High (1–2 times/ week and > 3 times/week), Low (<1 time per week and Never in the last month)

Table 4- Comparison of the PSQI component scores and the Int. stud. age grade

PSQI		Int. Stud. N=140						Total (%)	X^2	P- val-ue
		Age								
		< 20		21-30		> 31				
		(N)	%	(N)	%	(N)	%			
SSQ	Good	20	14.3%	71	50.7%	5	3.6%	68.6%	2.533	> 0.05
Poor		11	7.9%	33	23.6%	0	0.0%	31.4%		
SL	Low	17	12.1%	55	39.3%	3	2.1%	53.6%	0.123	> 0.05
High		14	10.0%	49	35.0%	2	1.4%	46.4%		
SD	> 7 hrs	15	10.7%	53	37.9%	3	2.1%	50.7%	0.242	> 0.05
< 7 hrs		16	11.4%	51	36.4%	2	1.4%	49.3%		
HSE	> 75%	23	16.4%	75	53.6%	4	2.9%	72.9%	0.186	> 0.05
< 75%		8	5.7%	29	20.7%	1	0.7%	27.1%		
SDs	Low	19	13.6%	65	46.4%	5	3.6%	63.6%	2.986	> 0.05
High		12	8.6%	39	27.9%	0	0.0%	36.4%		
USM	< 1 Time/ Week	31	22.1%	95	67.9%	5	3.6%	93.6%	3.329	> 0.05
> 1 Time/Week		0	0.0%	9	6.4%	0	0.0%	6.4%		
DSD	Low	27	19.3%	74	52.9%	5	3.6%	75.7%	4.964	> 0.05
High		4	2.9%	30	21.4%	0	0.0%	24.3%		
GS	< 7	18	12.9%	60	42.9%	5	3.6%	59.3%	3.562	> 0.05
	> 7	13	9.3%	44	31.4%	0	0.0%	40.7%		

Table 5- Comparison of the PSQI component scores and the gender of the Geo. Stud. age grade

PSQI (N%)		Georgian students N=360						
	Gender					Total	X^2	P- value
	Male		Female					
	(N)	%	(N)	%				
SSQ	Good	51	14.2%	134	37.2%	51.4%	2.833	> 0.05
	Poor	35	9.7%	140	38.9%	48.6%		
SL	Low	45	12.5%	114	31.7%	44.2%	3.050	> 0.05
	High	41	11.4%	160	44.4%	55.8%		
SD	> 7 hrs	60	16.7%	177	49.2%	65.8%	0.777	> 0.05
	< 7 hrs	26	7.2%	97	26.9%	34.2%		
HSE	> 75%	59	16.4%	162	45.0%	61.4%	2.482	> 0.05
	< 75%	27	7.5%	112	31.1%	38.6%		
SDs	Low	72	20.0%	189	52.5%	72.5%	7.136	> 0.05
	High	14	3.9%	85	23.6%	27.5%		
USM	< 1 Time/Week	83	23.1%	248	68.9%	91.9%	3.182	> 0.05
	> 1 Time/Week	3	0.8%	26	7.2%	8.1%		
DSD	Low	52	14.4%	147	40.8%	55.3%	1.230	> 0.05
	High	34	9.4%	127	35.3%	44.7%		
GS	< 7	55		15.3%	118	32.8%	48.1%	11.441	< 0.05
	> 7	31		8.6%	156	43.3%	51.9%		

Table 6- Comparison of the PSQI component scores and the Int. stud. from respective countries by Gender

				Int. Stud. N=140										
		Egypt		India		Iran		Nigeria		Other		Total	X^2	P-value
PSQI		M	F	M	F	M	F	M	F	M	F			
		N(%)	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)			
SSQ	Good	4(2.9%)	13(9.3%)	10(7.1%)	15(10.7%)	5(3.6%)	16(11.4%)	11(7.9%)	12(8.6%)	3(2.1%)	7(5.0%)	68.6%	1.230	>0.05
	Poor	1(0.7%)	5 (3.6%)	4(2.9%)	9(6.4%)	1(0.7%)	6(4.3%)	1(0.7%)	6(4.3%)	4(2.9%)	7(5.0%)	31.4%		
SL	Low	10.7%)	13(9.3%)	8(5.7%)	12(8.6%)	3(2.1%)	12(8.6%)	9(6.4%)	6(4.3%)	6(4.3%)	5(3.6%)	53.6%	1.566	>0.05
	High	4(2.9%)	5 (3.6%)	6(4.3%)	12(8.6%)	3(2.1%)	10(7.1%)	3(2.1%)	12(8.6%)	1(0.7%)	9(6.4%)	46.4%		
SD	> 7 hrs	0.0%	12(8.6%)	8(5.7%)	12(8.6%)	5(3.6%)	12(8.6%)	6(4.3%)	6(4.3%)	5(3.6%)	5(3.6%)	50.7%	0.377	>0.05
	< 7 hrs	5(3.6%)	6 (4.3%)	6(4.3%)	12(8.6%)	1(0.7%)	10(7.1%)	6(4.3%)	12(8.6%)	2(1.4%)	9(6.4%)	49.3%		
HSE	> 75%	1(0.7%)	12(8.6%)	10(7.1%)	18(12.9%)	6(4.3%)	17(12.1%)	10(7.1%)	12(8.6%)	7(5.0%)	9(6.4%)	72.9%	0.633	>0.05
	< 75%	4(2.9%)	6 (4.3%)	4(2.9%)	6(4.3%)	0.0%	5(3.6%)	2(1.4%)	6(4.3%)	0.0%	5(3.6%)	27.1%		
SDs	Low	3(2.1%)	10(7.1%)	12(8.6%)	16(11.4%)	2(1.4%)	14(10.0%)	7(5.0%)	12(8.6%)	6(4.3%)	7(5.0%)	63.6%	0.589	>0.05
	High	2(1.4%)	8 (5.7%)	2(1.4%)	8(5.7%)	4(2.9%)	8(5.7%)	5(3.6%)	6(4.3%)	1(0.7%)	7(5.0%)	36.4%		
USM	< 1 Time /Wk.	4(2.9%)	18(12.9%)	14(10.0%)	22(15.7%)	6(4.3%)	21(15.0%)	12(8.6%)	17(12.1%)	5(3.6%)	12(8.6%)	93.6%	0.016	>0.05
	> 1 Time /Wk.	1(0.7%)	0.0%	0.0%	2(1.4%)	0.0%	1(0.7%)	0.0%	1(0.7%)	2(1.4%)	2(1.4%)	6.4%		
DSD	low	5(3.6%)	14(10.0%)	13(9.3%)	16(11.4%)	5(3.6%)	16(11.4%)	10(7.1%)	14(10.0%)	5(3.6%)	8(5.7%)	75.7%	3.958	>0.05
	High	0.0%	4 (2.9%)	1(0.7%)	8(5.7%)	1(0.7%)	6(4.3%)	2(1.4%)	4(2.9%)	2(1.4%)	6(4.3%)	24.3%		
GS	< 7	0.0%	117.9%)	12(8.6%)	11(7.9%)	5(3.6%)	14(10.0%)	9(6.4%)	9(6.4%)	6(4.3%)	6(4.3%)	59.3%	4.803	>0.05
	> 7	5(3.6%)	7 (5.0%)	2(1.4%)	13(9.3%)	1(0.7%)	8(5.7%)	32.1%)	9(6.4%)	1(0.7%)	8(5.7%)	40.7%		

4.0 Discussion

Our study showed that the prevalence of poor sleep quality among the Geo. stud. and the Int. stud. by age was 51.9% and 40.7% respectively. The Geo. stud. who are below 20 years were at risk of having poor sleep quality and the int. stud. between the 21 – 30 years are at risk of having poor sleep quality. The age prevalence corresponds with the ages of Kim's study among the int. studs. in South Korea during Covid -19 pandemic (Kim and Kim, 2021). The prevalence was the same with respect gender of both Geo. and int. students. Most of the students who had poor sleep quality reported difficulty in falling asleep after their daily activities and some of them sleep less than 7 hours in other to achieve the plans for the next day following the series of lectures.

Studies reported that the sleep duration of the students during the pandemic increased (Ranjbar, *et al.,* 2021) which was not the same among the students who had less than 7 hours of sleep in this

research. Some of the students spend more time on bed trying to sleep as their habitual sleep efficiency was less than 75% which can be attributed by insomnia, psychological stress, and use of sleeping tablets (Desjardins, *et al.,* 2019). Meanwhile some students had high daytime dysfunction which has been reported by study that students who have low sleep duration at night are likely to have daytime dysfunction (Taher, *et al.,* 2012). This study suggests that both the Int. and Geo. students still have difficulty with their sleep quality and the essence of sleep consultations is required.

5.0 Conclusion

Our result findings showed that the poor sleep quality was high among female students. Significant difference was observed between the poor subjective sleep quality (SSQ) from PSQI component and the Geo. stud. less than 20 years. This implies appointments should be scheduled for the students who feel that they have difficulty sleeping in other to develop the good sleep quality and the role of the parents or guardian is very important as they encourage the students under their care to have proper sleep which will prevent the adverse psychological effect of poor sleep quality.

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The Chronic Illness Epidemiology Caused by lifestyle, Risk Factors

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ABSTRACT

A vast amount of literature confirms that chronic diseases greatly affect the world's population, and their prevalence rates are increasing worldwide. The aging population and socioeconomic changes in India are the cause of an increase in these common and costly long-term health conditions. An unhealthy lifestyle has a detrimental impact on one's health, increasing one's chances of developing a major medical condition that might have been avoided. Many individuals are altering their traditional diets as a result of internet influence, without fully understanding the causes and consequences of doing so. We used the data from the analysis of cross-sectional data from the nationally representative Longitudinal Aging Study in India (LASI) and also from Prevalence and potential determinants of chronic disease among elderly in India: Rural-urban perspectives. It has been seen that more than 21 percent of the elderly population are suffering from at least one chronic disease. We have conducted a study on different age groups regarding their food habits, physical activity, and lifestyle. We have found out that taking high fat-containing food with lesser proteins and nutrients for the need of fulfillment might give temporary satisfaction but they are causing a deep impact on the Health. Ultra-processed foods like packed snacks, cheese balls, frozen foods, high calorie, sodium, and oil-containing food play a major role and are risk factors for causing chronic illnesses like early obesity. This, in turn, is linked to a sedentary lifestyle. Excessive smoking and drinking alcohol especially in young adults and older age groups have been another major cause of developing a chronic disease and simultaneous use has directed to worsening of the symptoms related to an existing chronic disorder. Eating healthy food and maintaining a healthy lifestyle can prevent chronic illness.

KEYWORDS: chronic diseases, lifestyle changes, processed food, alcohol and smoking, sedentary lifestyle.

INTRODUCTION:

Chronic illness is a human health condition where the disease usually develops over a period of time and stays for a long duration. It is said that the illness usually is there for three months or more and it can be persistent throughout the lifetime. The sickness may aggravate over time. One of the main reasons why people visit a doctor is to check their chronic conditions. Many of these conditions are caused by unhealthy lifestyle choices such as smoking, alcohol consumption, and lack of physical activity. In the recent global population, there is a significant increase in the cases of people that are suffering from chronic illnesses. Chronic illness is not only a disease that stays for a lifetime but also has a lot of impacts on both the physical and mental state of a person. Diseases such as hypertension, high cholesterol levels, arthritis, obesity, diabetes, and certain cancers are the most common chronic illnesses that are affecting the global population. Maintaining a good lifestyle, environment, energy balance, and physiology are related to the behavioral change and this remit causes a dominant cause for the concern. This chronic illness reduces a person's life expectancy and affects the quality of life

very drastically and can also ultimately lead to death. These chronic illnesses can be caused by several causes; among those several causes some of them can be controlled and some of them cannot be controlled. Among many, the important causatives are behavioral, and genetic which are passed from family through generations, environmental, socio-economic, and metabolic factors. changes in lifestyle such as eating unhealthy food without maintaining a proper diet, not being properly hydrated, Overwork and lack of sleep are some of the factors that can trigger a chronic condition. It can also lead to a feeling of pressure and exhaustion. Lack of physical activity, substance abuse, smoking cigarettes, and consuming alcohol are important factors related to lifestyle.

However unknowingly people within today's generation consume ultra-processed food that is inexpensive and readily available, many people rely on it to sustain themselves and their families. not everyone has the time, finances, and facilities to prepare and consume fresh food. Ultra-processed foods have a pleasant flavor and are frequently affordable. However, they often include substances that, if ingested in excess, might be hazardous, such as saturated fats, added sugar, and salt. In addition, these foods have less nutritional fiber and vitamins than complete meals. This in turn has a lot of impact on the body which leads to chronic disease.

LITERATURE REVIEW:

Diverse people lead different lifestyles. Leading a healthy lifestyle is very beneficial and offers several advantages. Opting for an unhealthy lifestyle knowingly or unknowingly under an oblivious influence can be satisfactory, but the probability of acquiring the illness increases, which might have been avoided (Nations, n.d.2020). According to the World Health Organization Non-communicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental, and behavioral factors (Bernell and Howard, 2016).

Centers for Disease control and Protection stated that Lack of physical exercise, poor diet, cigarette use, and excessive alcohol consumption are four lifestyle choices that might have an impact on chronic illnesses. However, another important factor that contributes to chronic disease is the use of processed foods (About Chronic Diseases | CDC, 2022). According to the World Health Organization every year, 41 million individuals die from chronic diseases, accounting for 71% of all fatalities globally. People in low- and middle-income nations suffer the most, accounting for more than three-quarters of all NCD mortality globally (31.4 million).

Tobacco use, according to the World Health Organization (2020), is a substantial risk factor for numerous chronic illnesses, including cancer, lung disease, cardiovascular disease, and stroke. It is one of India's main causes of death and sickness, killing about 1.35 million people.

In addition, India is the world's second-largest producer and consumer of tobacco. A large variety of tobacco products are available at exceptionally low prices throughout the country.

According to the Global Adult Tobacco Survey India (2016-17), over 267 million individuals (15 years and older) in India use tobacco (29 percent of all adults). According to studies, India has two forms of tobacco use: smoke and smokeless tobacco. The total prevalence of smoking tobacco use in India is 10.38 percent, according to the Global Adult Tobacco Survey (GATS), while smokeless tobacco use is 21.38 percent. Tobacco is presently used by 28.6 percent of all people, whether they smoke it or not, including 42.4 percent of men and 14.2 percent of women (Rai, B., & Bramhankar, M. 2021). Research indicates that the use of tobacco can reduce the quality of lifestyle, and daily life can be challenging. Another major unhealthy habit that is prone to chronic illness is consum-

ing alcohol. Alcohol consumption within suggested limits is common in much of the entire planet but there is an epidemiological link between excessive and moderate alcohol intake and the risk of numerous major chronic illnesses like hypertension, cardiovascular diseases, cirrhosis, and chronic kidney diseases (Mukamal et al., 2016). Health illnesses such as high blood pressure, heart problems, and a certain type of cancers are also caused. Long use of alcohol intake also affects mental health problems like depression and anxiety. Dementia is often seen in such people with a weakening of the immune system (*Moderate Alcohol Consumption and Chronic Disease: The Case for a Long-Term Trial - PubMed*, 2016)

Another lifestyle routine that severely is a hidden cause of most chronic illnesses is the intake of fast and processed foods in the diet. As we are living in a modern world, many epidemiologists argue that there is a nutrition transition and its health implications in middle and lower-income countries (Bahadoran et al., 2016). Not everyone is privileged and has time to make or eat proper nutritious food, so most people for their need for self-fulfillment have opted to eat processed packed food, frozen food, and opted for ready-cooked meals. These usually are high in sodium and saturated fats which are unhealthy. It has been argued that the nutrition transition has happened in both lower-income families and higher-income families. Excessive intake of these processed foods has mostly affected the higher group income households where they are able to see both malnutrition and obesity. People in lower-income groups are mostly preferring processed foods and frozen foods because they are highly available and easy in the market, have a long shelf life which is useful for storing purposes, and also be fulling as a meal even though they don't provide enough nutrients for an actual meal. (Stuckler et al., 2012). Another reason which leads to a sedentary lifestyle which is a major cause of chronic illness is physical activity. It is said that physical inactivity is linked to an increased risk of chronic illness. The increasing incidence of chronic disease has a detrimental influence on global societies, which is directly tied to rising healthcare expenses, workforce issues regarding attendance and productivity, military personnel recruiting, and academic performance. Increased physical activity (PA) and exercise, on the other hand, are linked to a lower risk of chronic illness. (Booth et al., 2012). Desk jobs and lack of physical activities reciprocal to the food intake are also some other reasons. This in turn leads to obesity which is a major global health concern.

This illness isn't just a physical concern but it leads to various orderly conditions which have become a significant medical issue around the world. It affects a person both mentally and physically and it might weaken their well-being. In a research study conducted by Rituparna and Usha (2014), on 32,521 adults aged in-between 22-64 years from 2007-09. They calculated their individual Bmi and divided the BMI into several categories like the participants with depression and no depression, with anxiety and no anxiety and suffering from being overweight, some chronic diseases like heart diseases, lung problems, women suffering from osteoporosis, and hypertension, etc. The results were among the individuals with obesity, those with anxiety or depression were at a higher risk of them getting chronic disorders (except osteoporosis which is age-related).

According to a cross-sectional study conducted by parul and shri (2022) Multimorbidity affects about one-third of the elderly population in India, with hypertension, gastrointestinal illnesses, musculoskeletal disorders, and skin diseases being the most frequent. It was analyzed from Data in the first wave of the Longitudinal Aging Study in India (LASI), 2017-2018.In a study of prevalence and causes of chronic illnesses among the population aged 60+ in India using data from the 75th round of the NSSO survey (N = 44,631) and employed a non-linear decomposition approach to explain the

urban-rural variations in the prevalence of chronic diseases it that reports, around 21% of the elderly in India suffer at least one chronic condition. A chronic illness affects 17% of the elderly in rural regions and 29% of the elderly in cities. Kerala has the greatest frequency of chronic disorders (54 percent), followed by Andhra Pradesh (43 percent), West Bengal (36%) and Goa (32%). (Jana and Chattopadhyay, 2022).

Study objectives:

We attempt to decipher whether a relationship between age groups, food, and water intake and lifestyle habits, occupation related to chronic disease through statistical data from the individual responses, also to analyze the information about the public knowledge on lifestyle habits that are related to chronic illness and how people are coping with it.

The main interest of this research was to know how much a person's lifestyle impacts the health of the Individual and determines the chronic illness they develop.

METHODOLOGY:

For this research a survey has been conducted on 18th May, 2022. 262 individuals participated in this survey which were conducted as a casual online survey. The research was conducted among various age groups 13-19 years, 20-39 years,40-59 years, and 60+ years. Young adults, working people, teenagers, and older retired people participated in the survey. The data about their mental health, eating habits, alcohol, and smoking habits, sleep, supplement intake, choices on lifestyle, opinions and how are they coping, were collected.

The surveys were shared online via social media platforms. After gathering the data, the information was analyzed and interpreted information which was gained while the research was conducted.

RESULTS:

In our study, most of the participants belonged to 20-60 years of age, out of which the majority were students or working professionals(fig:1). Almost 42% of the participants weren't exercising at all. 58% were moderately active throughout the day(fig:4). 55% of the members slept for 6-8 hours continuously. 40.5% of the people were drinking only 1-2 liters of water per day(fig:2). 13% of the people were smoking every day and 9.9% were drinking every day. 28.2 percent of the participants were eating packed or canned food many times a week(fig:3). Most of them didn't follow any specific diet. The most commonly used supplements include Whey protein, Calcium, Fish oil, And vitamin d. Most of the participants were (63%) not suffering from any chronic diseases, at the same time most of them were not consciously following any lifestyle changes.

Figures:

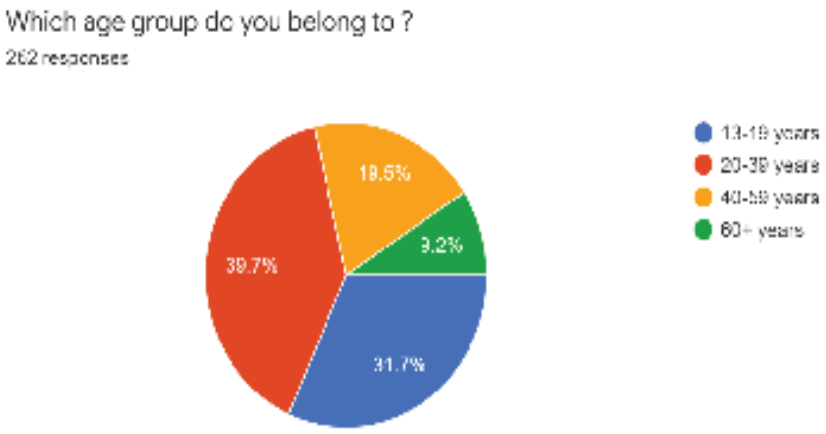

Fig: 1: age groups of the participants

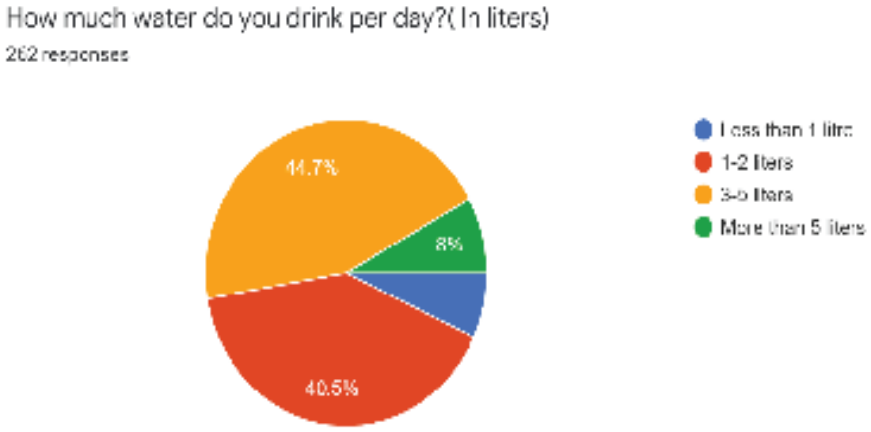

Fig: 2: Daily water intake per day

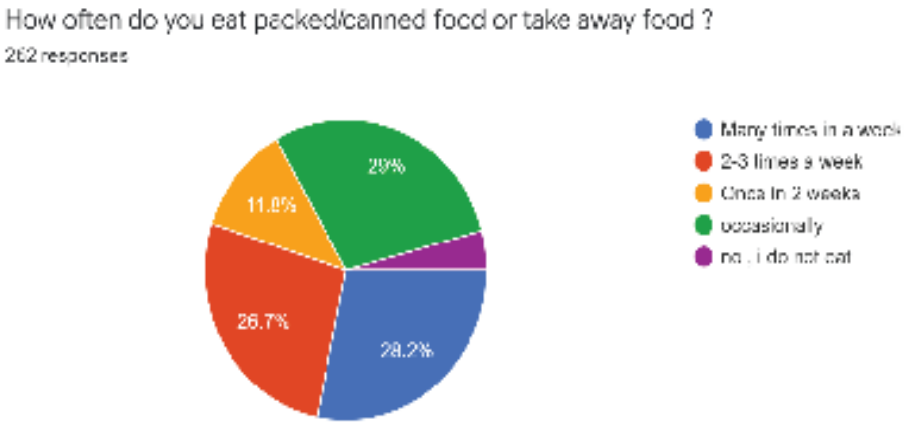

Fig:3: results for packed or canned or take away food

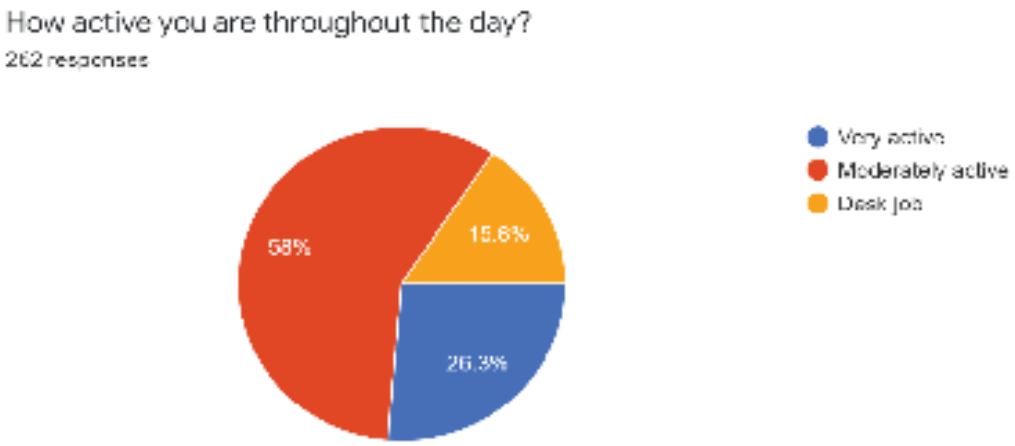

Fig:4 : amount of time spent for being active

DISCUSSION:

This study aimed and focused on chronic illnesses caused by lifestyle changes and their related risk factors that are the main causes. We investigated the relationship between lifestyle and related health issues that affect people from various age groups (young adults to old age.)

It is well–established that there is a very strong relationship between lifestyle and health outcomes, studies confirmed that an unhealthy lifestyle affects people from various age groups and leads to the development of various chronic disorders (Omram, A. R. (2001). Our research revealed that most of the people belonging to all age groups (especially the 20-39 age) were consuming packed / canned food on a regular basis which is leading to increasing in obesity and hypertension among them. Being inactive throughout the day is also a common habit among the young and old alike. About half of them said they do not exercise at all. The reason is working late and having a busy schedule, which increases the risk of developing various cardiovascular diseases. We came to know that the majority of the participants were consuming an adequate amount of water and also were having a good sleep of 6-8 hours which is a positive sign. Smoking and drinking also contribute to the development of chronic diseases (Rai, B., & Bramhankar, M., 2021). We found out that the majority of the participants don't smoke at all and drink occasionally. The main concerning issue is that the people who were drinking and smoking daily belonged to the age group of 20-39 years. People who opted for working out were mainly told they were taking Protein as an additional supplement. Other supplements include Calcium, Vitamin D, Fish oil, etc. The most concerning part of our research is that most of the people were not taking any conscious steps in making lifestyle changes. It is a problem as we found out that the majority of the people who were 60+ years of age were suffering from one or more chronic illnesses and also the people who belonged to the age group of 40-59 were suffering from a chronic disease (65%). So, seeing this trend and also observing habits of participants belonging to age below 40 years, it is very likely that they are most prone to acquire a chronic disorder shortly (Jana, A., & Chattopadhyay, A., 2022). So, rather than spending a lot of money on the healthcare system, simple changes in day-to-day life can significantly improve health and decrease the burden of going to the hospital. The intake of packed /take away foods and also minimal activity due to lack of time in the daily schedule is leading to many chronic diseases. The concerning issue

here is the lack of awareness among the people about the impact of lifestyle changes on their health. Especially, the disease process can very well be prevented among the younger age groups before it starts to develop and progresses to a severe stage. Chronic illnesses cannot be treated but can just be controlled to be able to live. Hence, if proper awareness is created and if conscious steps are taken to make small changes in lifestyle, a lot of chronic, debilitating diseases can be prevented.

CONCLUSION:

Eating canned/packed foods many times a week and being inactive or lack of physical exercise was very common among the participants. Also, there is a lack of awareness about the lifestyle changes which in turn is leading to a sedentary lifestyle. people must be given awareness about the importance of lifestyle changes so that people tend to change and become less prone to chronic diseases. These are very simple and minor changes one can make in day-to-day life which improve health significantly and keeps them away from many dangerous diseases.

RECOMMENDATIONS:

* Case-control study can be done by dividing the study population into two groups. One group will be asked to follow certain habits (Food intake, specific physical activity, proper water intake, etc.) for a period of time and they will be monitored, whereas the other group is left free to follow a normal lifestyle. After a certain period of time, the health and physical parameters of both study groups will be assessed. This will be compared against the parameters that were taken before the start of the study.

* The study can also be done to compare the differences between male and female population

* The study can also be done to compare the lifestyle and its impact on health among populations of the same age group living in the rural and urban areas.

LIMITATIONS:

* Our study was based on the data collected from an online questionnaire, some parts of the data may be subjective.

* Our study population was limited and we could not find the same population size for all age groups.

ACKNOWLEDGMENT:

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Prevalence of HPV Infection among Women Enrolled in Cervical Cancer Screening in Georgia

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ABSTRACT

Background: Human Papilloma Virus (HPV) is one of the frequent viral infection in human. Among many types of HPV, around 15 are linked to cancer. It is known that persistent high HR-HPV related cancer is considered nearly completely preventable disease due to the highly effective primary (HPV vaccines against different genotypes) and secondary (screening) preventive measures. However, these measures have not been equitably implemented across countries. Moreover, cervical cancer screening strategies are different between countries. There have been many studies worldwide on the epidemiology of HPV infection, however, there are still many countries where the population-based prevalence has not yet been identified.

Objective: HR-HPV DNA is major etiologic agent for cervical carcinoma. Cervical cancer screening program in Georgia implemented since 2008, with full coverage of country since 2011. HPV vaccination implemented since 2017. However, coverage with screening, moreover with vaccination is still lower. There are only a few existing scientific papers on HPV prevalence among screening woman at national level. Aim of this study is to investigate HPV prevalence among woman enrolled in cervical cancer screening in Georgia. It may help health care providers to promote rationally process of vaccination against HPV infection.

Materials and Methods: I performed performed retrograde analysis on a subset cohort of women, with previous abnormal screening results, who enrolled in opportunistic Cervical Cancer Screening between 2011-2013 from 9 private clinic of Georgia. Due to the fragmented medical services and lack of standardization of cervical screening, it was available 33 HPV test results.

Results: Prevalence of HR-HPV overall was 25,8%, for LR-HPV was 22,5%. Prevalence of HPV16 and 18 genotypes together was 37.5%; for HPV 16,18, 33 together was 12.5%; for HPV 45 was 12.5%; for HPV 56 was 12.5%; for HPV 16 was 25%. Prevalence of HR-HPV is high than in most developed countries.

Conclusion: Based on small sample there is high prevalence of HR-HPV infection in Georgia. It needs to conduct population-based assessment on prevalence. Knowledge on prevalence of genotypes may push the process of primary prevention process on cervical cancer.

Introduction

Many RNA and DNA viruses have proved to be oncogenic. Despite intense scrutiny, however, only a few viruses have been linked with human cancer. Around 15% to 20% of cancer cases are associated with viral infections. (1,2) Oncogenic viruses can facilitate various stages of carcinogen-

esis. Human papillomavirus (HPV)is sexually transmitted virus, and high-risk HPV DNA is found to be present in 99.7% of cervical cancer specimens. Most of these infections are asymptomatic and resolve spontaneously. (3,4,7,8)Almost 120 HPV types have been identified with more than 40 types colonizing the genital tract. HPV types are divided into two groups based on their carcinogenic properties: high risk and low risk. HPV strains 16 and 18 are most often implicated as causing 70% of all cervical cancers and also contribute to many vaginal, vulvar, penile, anal, and oropharyngeal cancers. However, high-risk HPV may persist and cause abnormal cellular changes that can become cancerous. For this reason, screening for cervical cancer before age 21 is not recommended. Previous efforts at early screening resulted in many young women receiving treatments on their cervix that may have been unnecessary. These treatments destroyed or removed cervical cells and in many cases altered the structural integrity of the cervix, resulting in an increase in preterm births in women treated without substantially decreasing the later rates of cervical cancer.7 Cancer of the cervix is the leading cancer-related death in most of Africa, Central America, and South-Central Asia; however, it has a lower prevalence in the United States.(3,4)

At the present time, there is relatively clear picture of HPV infection's natural history, oncogenic properties, screening, and prevention algorithms. However, HPV infection

rates continue to persist, especially in developing countries, where cervical cancer incidence and prevalence are still high. It may have different reasons, which include

low socioeconomic status, lack of population awareness, and inadequately implemented screening and vaccination programs.

There are three commercially prophylactic vaccines available; these are Cervarix (a bivalent vaccine against HPV16 and HPV18), Gardasil (a tetravalent against HPV6, 11, 16, and 18), and Gardasil 9 (9-valent vaccine against HPV6, 11, 16, 18, 31, 33, 45, 52, and 58). (4,5) Vaccination programs have been very successfully implemented in many countries all over the world. (8) Cervical cancer screening program in Georgia implemented since 2008, with full coverage of country since 2011. HPV vaccination implemented since 2017.(9,10)However, coverage with screening, moreover with vaccination is still lower. There are only a few existing scientific papers on HPV prevalence among screening woman at national level. (6) Aim of this study is to investigate HPV prevalence among woman enrolled in cervical cancer screening in Georgia. It may help health care providers to promote rationally process of vaccination against HPV infection.

Materials and methods

I performed retrograde analysis of Medical histories a subset cohort of 162 women, with previous abnormal screening results, who enrolled in opportunistic Cervical Cancer Screening between 2011-2013 from 9 private clinic in Tbilisi: Mediclub Georgia, Iunona, Venus Georgia, Medicare, Caraps Medline, In Vitro, Interclinica, Gudushauri cinic, Chachava clinic. Due to the fragmented medical services and lack of standardization of cervical screening, it was available 33 HPV PCR test results. Patients Medical histories were available based on local ethical commissions of clinics. As cervical cancer screening was fragmented, along pap test, HPV testing was offered based on doctor's decision and patients financial capacity.

Results:

Among 162 enrolled in screening program, 33 HPV PCR test results were available. Out of 33 PCR results 18 case was negative; 15 case was positive for HPV test result.

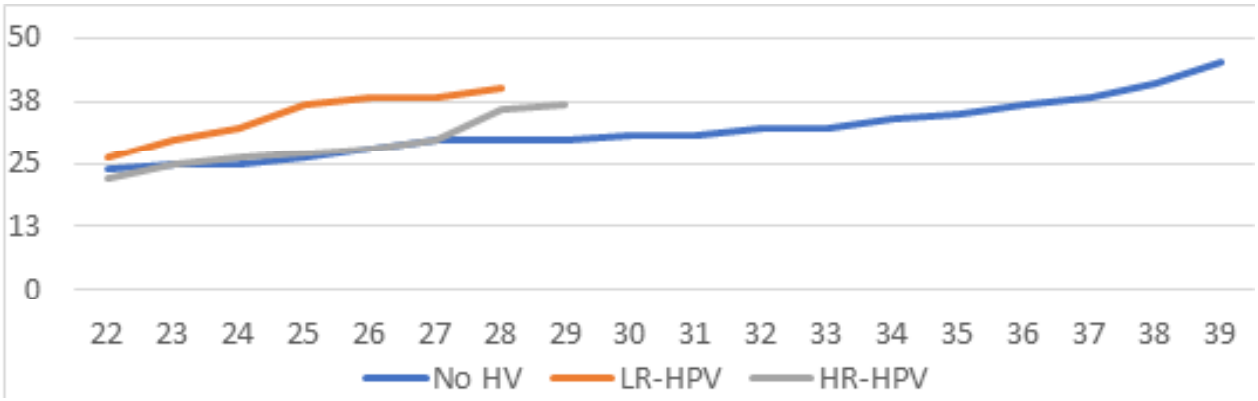
Prevalence of HPV infection in screening group was 45%; Table 1.

Table 1.

Total amount females enrolled in screening	HPV test	No HPV	LR-HPV	HP-HPV
162	33	18	7	8

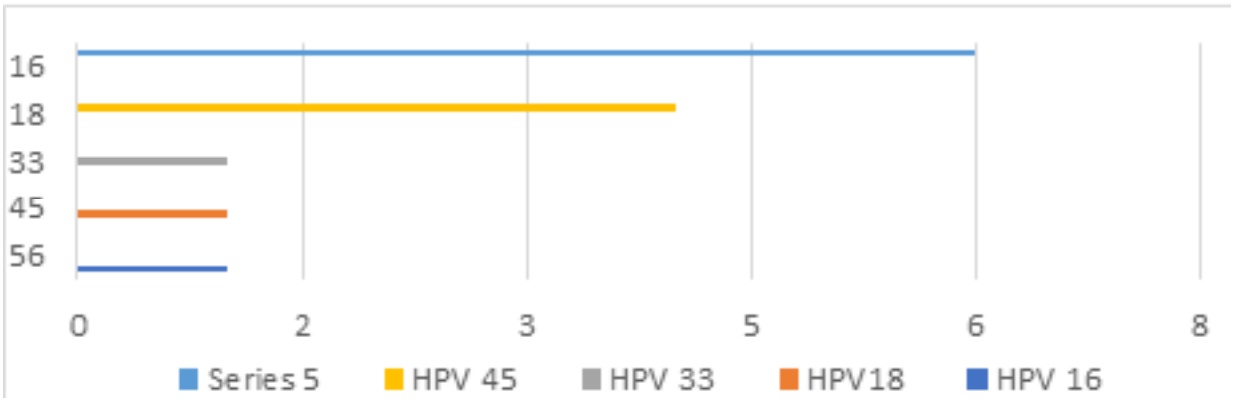
Age of females infected with various HPV was from 22 to 40; with mean of age 31.8

Figure 2. Distribution of HPV test results according to the age



Prevalence of overall HR-HPV in study group was 24,3%, prevalence for LR-HPV was 21,2%. Prevalence for HPV16 genotype was 46,15%, for HPV 18 was 33,8%; for HPV 33 was 7.7%; for HPV 45 7,7% and for HPV 56 was 7.7%. (Fig.2)

Figure 2. Rate of HR-HPV frequency



Distribution of HR-HPV according age was as follows: In females aged from 26 to 37 number HPV16 positive result was 6 (46,15%). HPV 18 type was positive in 4 case, in females aged 26,28,36 and 37. HPV33 was positive in one female aged 28; HPV 45 was positive in one female aged 22 and HPV 56 was positive in one female aged 25. (Fig. 3 and 4)

Figure 3. HR -HPV distribution

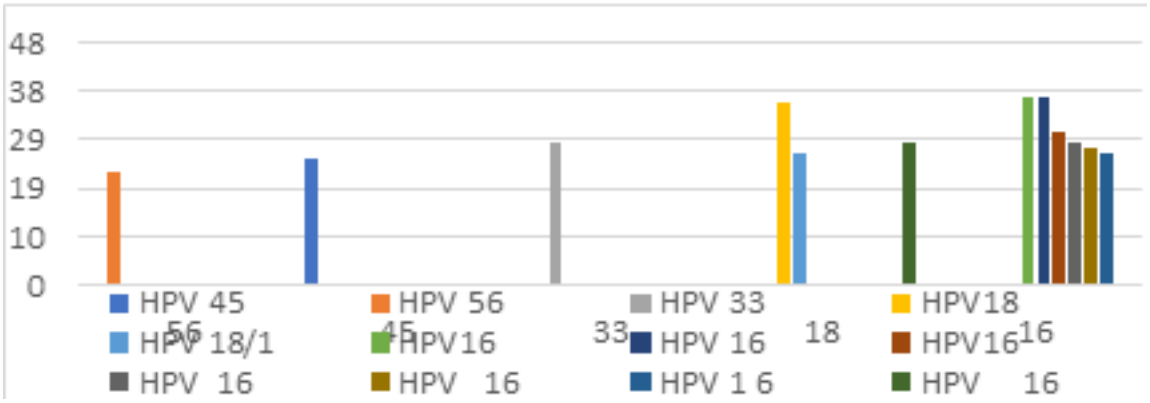
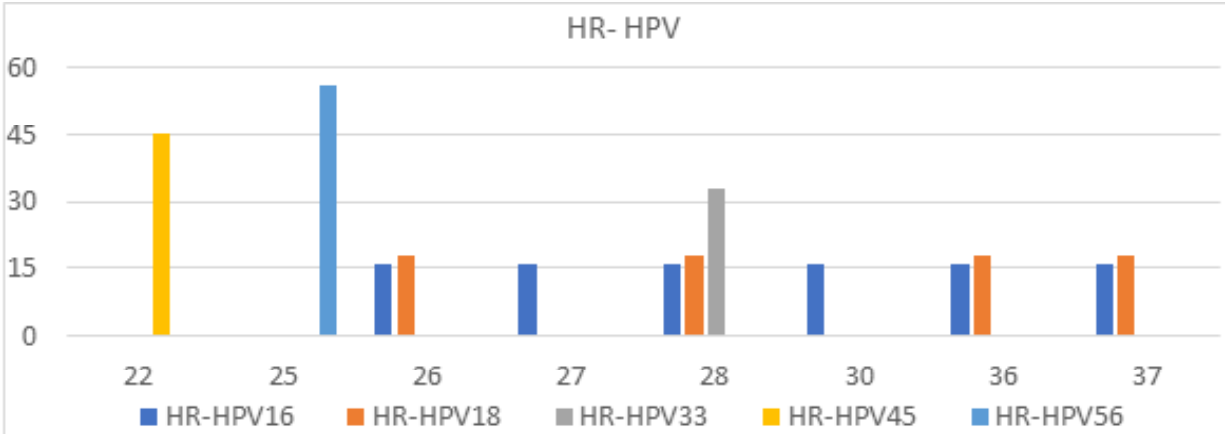


Figure 2. Distribution of HR-HPV according to the age



Conclusion

Research was conducted on small sample, that show high prevalence of HR-HPV infection in Georgia. HPV testing was fragmented service for long period of time in Georgia. That was reason of low count of HPV test results in cohort. Recently it was implemented HPV test as a component for cervical cancer screening, that may help to collect much data on it. Generally, HPV testing is characterized by low specificity for cervical carcinoma, especially in young females, implementing HPV testing in cervical cancer screening may increase awareness on the sexually transmitted disease and may promote activities to decrease risk of infection and development cancers associated with HR-HPV.Weakness of this study was size of sample and bias on data collection. Main reason of this was fragmented service and high cost of HPV test. It needs to conduct population-based assessment to have better accuracy on prevalence of HPV in Georgia. Statistical data from the recent years show that utilization of HPV vaccines is very effective for preventing infection and disease related to the specific HPV genotypes. Vaccination programs have been implemented in different countries all over the world. Knowledge of prevalence of cancer related HR-HPV genotypes is one of the important factors, that may decrease risk of variety of cancers associated with HR-HPV.

Recommendation

Knowledge on prevalence of genotypes in countries may increase the activities of health care system, that will be directed to increase awareness on cancer associated viral infections and to push much more actively primary prevention process against cancer, by implementing specific types of vaccines against HR-HPV.

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Impact of Cesarean Section on Neonatal Outcomes in Georgia

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ABSTRACT

Objectives: There is a general concern about increasing caesarian section (CS) rates worldwide. The goal of CS delivery is to avoid the complications that might develop after vaginal delivery, but CS has implications for postoperative maternal and neonatal morbidity. The aim of this study was to examine rate of CS and neonatal outcome in a Georgian population.

Method: We performed a retrospective national registry-based study of all birth and NICU admission between 2020 -2021 in Georgia. The primary outcome was a cesarean section, demographics and NICU admission. Maternal age less than 30 years serves as reference with the following age categories: (30-34 years); (35-39 years), and (40 years and above). CS before 39 and above 37 weeks of gestation was reference for newborn intensive care unit (NICU) admission.

Results: CS rate in Georgia during 2021 was 42.8 %, same parameter in 2020 was 40.6 %; Rate of CS in nulliparous woman during 2021 was 52%; same parameter in 2020 was 48%; rate of emergency CS during 2021 was 64 %; ; same parameter in 2020 was 63,3%; CS at 37-38 week of gestation has shown 30% increases rate of neonatal referral at NICU.

Conclusion: Increase of number of CS may have negative impact on neonatal outcome. CS has to be increased. Number of NICU admission greatly impacted by number of CS, which may have negative consequence on neonatal, maternal, family as well as health care budget as well on economics of country. Local strategies and policies should be established to increase awareness on negative impact of CS.

Introduction

Since the past few years pregnancy was a challenge among women, as they have to maintain full health of their baby and themselves during the 9 month period of pregnancy, but most importantly the moment when the time comes to deliver the baby is the game breaker. The mechanism of giving birth was improved and developed in the past few decades, as to be today divided to 2 technics to be natural vaginal delivery and Cesarean Section, but since the couple years till today, the demand on C section increased dramatically and went sky high, which caused severe problems, in case it was maternal or neonatal, but still a lot of people still side with C section due to avoid complications in the procedure of labor or after , or as we could say a fear factor could present, as the normal delivery method implants fear and effort among women. (4-7).

Vaginal birth is a natural and physiological process. However, in certain circumstances, a caesarean section (CS) may be required to protect the woman and the baby's health. In those circumstances, underuse of CS contributes to increased maternal and perinatal mortality and morbidity. Conversely, overuse (ie, the use of CS with no medical indication) has not shown benefits and may create harm

and waste of human and financial resource.(8,9)Considering the prospects of significant population growth in countries affected by the double and triple burden, it could be anticipated that the overuse of CS, unsafe provision of CS and unmet need of CS may emerge as an obstacle to achieve the Sustainable Development Goals (SDGs) in 2030. (8-15)

The most common causes of maternal morbidity in the form of immediate intraoperative and early postoperative complications are: anemia, urinary tract infections, superficial or complete dehiscence of the operative wound and endometritis. Inflammatory complications often occur after a Caesarean section. It is generally accepted that prophylactic administration of antibiotics and cephalosporin preparations has been used before Caesarean section.(9,10)

Materials and methods.

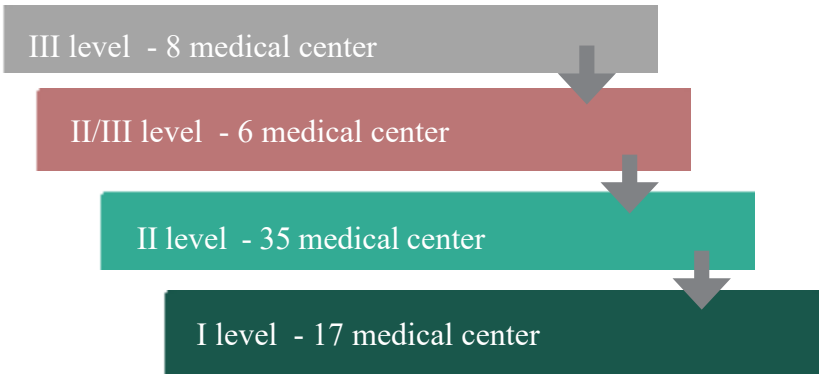
We performed a retrospective national registry-based study of all birth and NICU admission between 2020 -2021 based on National health agency of Georgia, NCDC and National statistics Office of Georgia. 1,2,3 The primary outcome was a cesarean section, demographics and NICU admission. Maternal age less than 30 years serves as reference with the following age categories: (30-34 years); (35-39 years), and (40 years and above). CS before 39 and above 37 weeks of gestation was reference for newborn intensive care unit (NICU) admission.

Results:

There are 67 Hospitals in Georgia that provide perinatal service within Perinatal Regionalisation Program Funded by Government of Georgia. Distribution of medical centers according levels are following: There are 17 primary perinatal medical center, 35 secondary perinatal medical center, 6 secondary/tertiary perinatal medical center and 8 tertiary perinatal medical centers.

Fig.1

Figure 1. Perinatal service providing medical centers in Georgia



Perinatal service providing medical centers are distributed through the different regions as follows: 15 medical center in Tbilisi, 10 in Imereti, 8 in Adjara, 7 in Kakheti, 8 in Qvemo Qartli, 8 in Samegrelo and Zemo svaneti, 4 in Samtskhe Javakheti, 5 in Shida Kartli, 3 in Guria, 2 in Racha-lechkhumi, 1 in Mtskheta-Tianeti. (Fig.2)

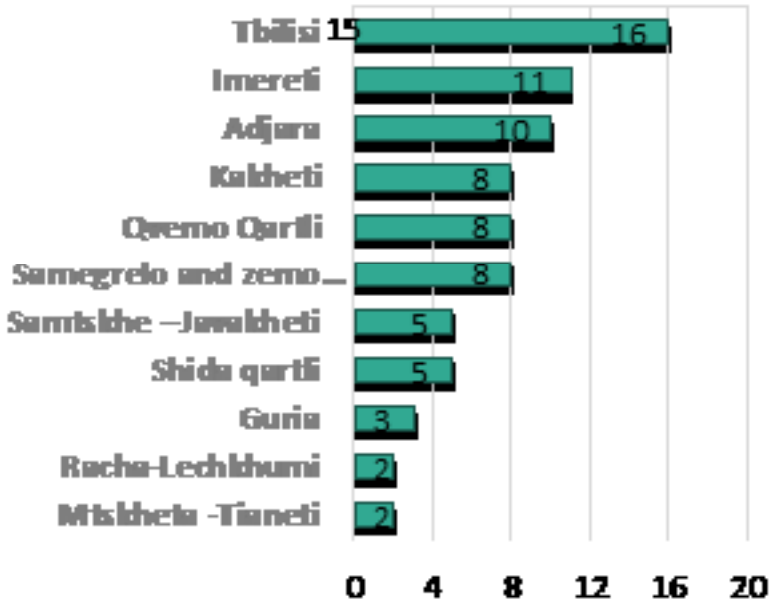


Figure 2. Number of hospitals providing perinatal services by regions of Georgia

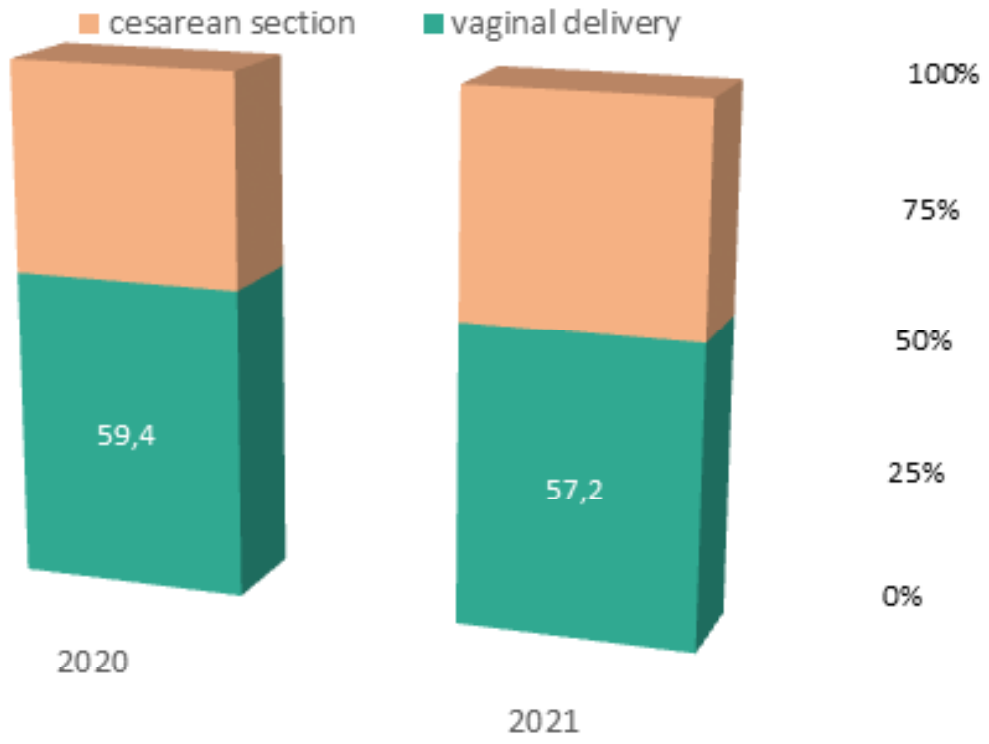
There was 45 946 live birth during 2020, 46 520 live birth during 2021. (Table 1)

Table1. Number of births in Georgia

	Number of live births	Number of all birth
2008	52542	55949
2009	56568	61520
2010	55230	61732
2011	51565	57394
2012	49969	56821
2013	49657	57576
2014	60635	60139
2015	59249	58751
2016	56569	55972
2017	53293	52489
2018	51138	50468
2019	47768	47492
2020	46607	45790
2021	45618	45060

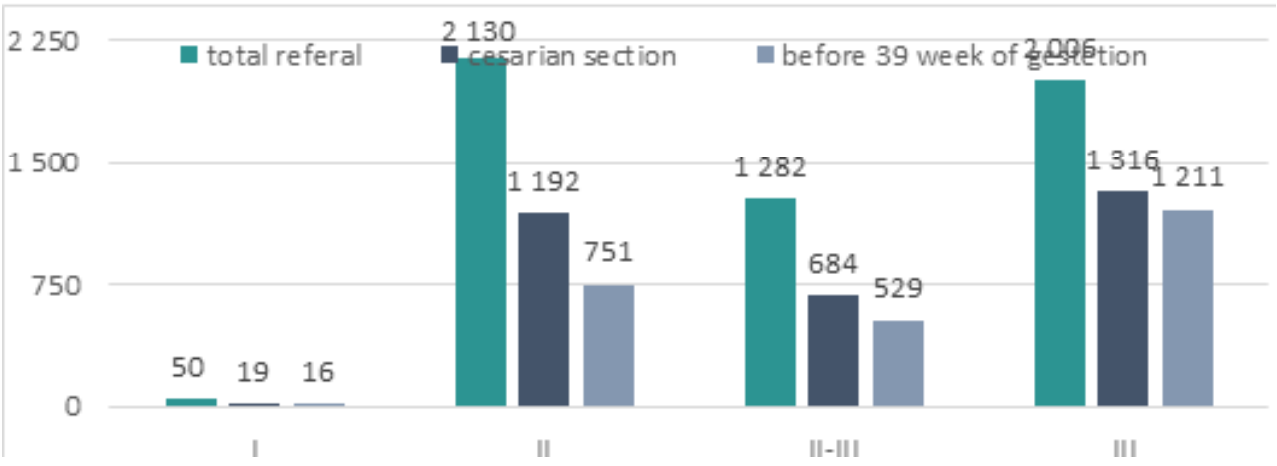
Rate of cesarean delivery was 40,6% 2020 during, 42,8% during 2021 year. (Fig.3)

Figure 3. Vaginal delivery vs cesarean section in Georgia



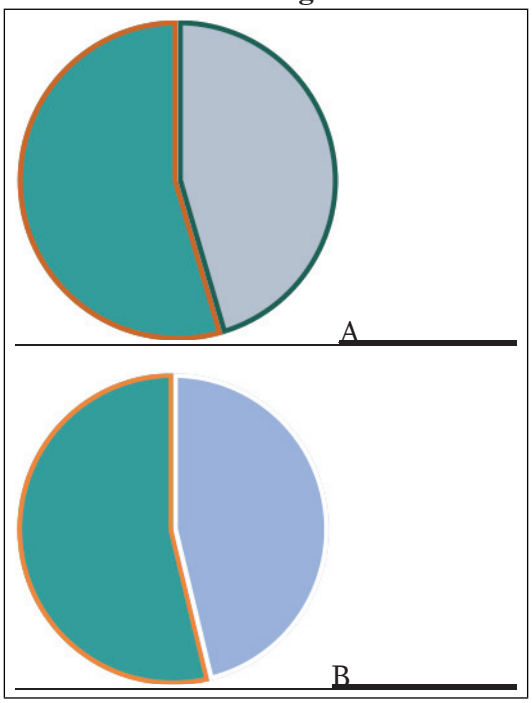
Total NICU referral at secondary perinatal medical center was 2 130, from which 1192 was born via cesarean section. At tertiary medical center NICU admission was 2 006, from which 1 316 was born via cesarean section. (FIG.4)

Figure 4. Newborn referral at NICU. 2021 year



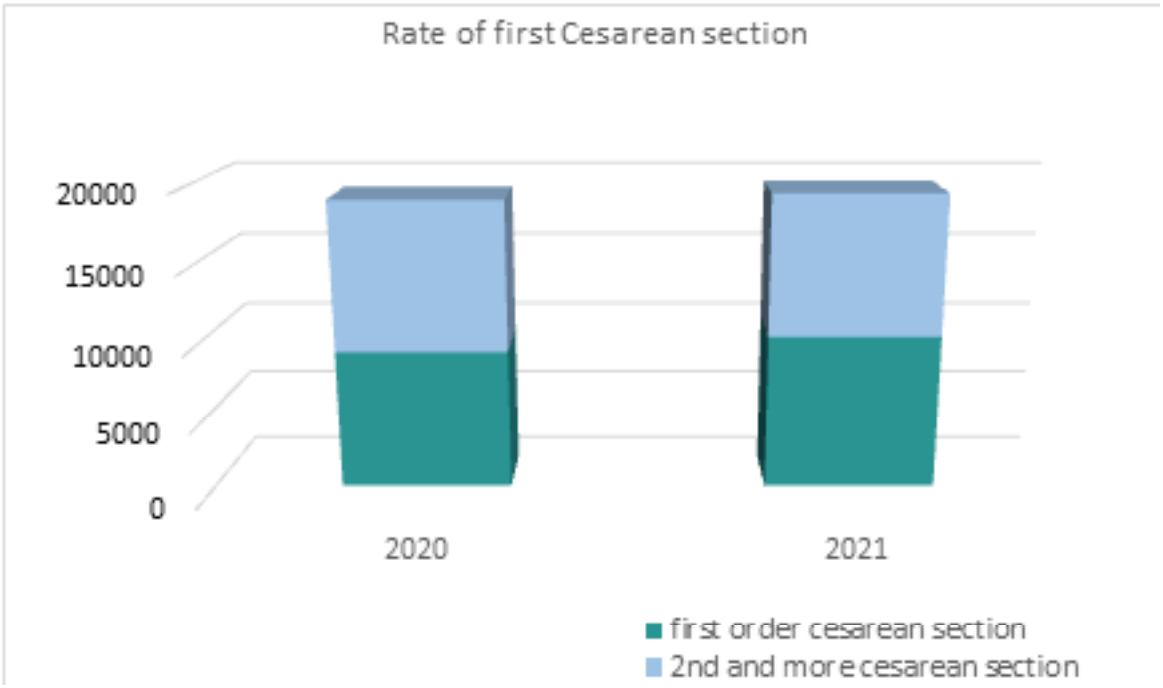
Cesarean section before gestational age 39 was 45,5 % 2020, it was 46,3% during 2021 (Fig.5)

Figure 5. Cesarean section before 39 week of gestation A. during 2020; B. during 2021



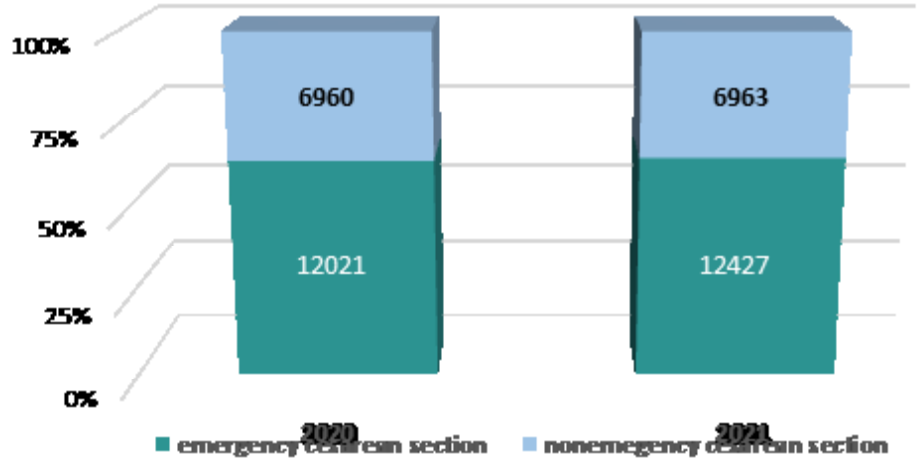
Frequency of first cesarean section in 2020 was 48%; it was 52 in 2021, (Fig.6)

Figure 6. Rate of first cesarean section



Rate of emergency caesarian section was 63,3% during 2020, it was 64,0% during 2010.(Fig.7)

Figure 7. Rate of emergency cesarean section



Expenses requested on perinatal services was distributed as follows:

From all requested financial support for on perinatal services, 20,3% was spent on vaginal delivery; 16,2% on cesarean section and 63,47% on NICU (Table 2)

Table 2. Distribution of Perinatal service expenses.

Expenses for vaginal delivery	Expenses for cesarean section	Expenses for NICU
20,3%	16,2%	63,47%

Discussion

There are significant discrepancies in a woman's access to caesarean sections, depending on where in the world she lives. In the least developed countries, about 8% of women gave birth by caesarean section with only 5% in sub-Saharan Africa, indicating a concerning lack of access to this lifesaving surgery. Conversely, in Latin America and the Caribbean, rates are as high as 4 in 10 (43%) of all births. In five countries (Dominican Republic, Brazil, Cyprus, Egypt and Turkey), caesarean sections now outnumber vaginal deliveries. 16Bases on our data, Georgia is also one of the leading countries based on rate sectarian section.

In relation to the frequency of Cesarean sections, the rate of health implications after Cesarean section has increased analogously.

Worldwide caesarean section rates have risen from around 7% in 1990 to 21% today, and are projected to continue increasing over this current decade. If this trend continues, by 2030 the highest rates are likely to be in Eastern Asia (63%), Latin America and the Caribbean (54%), Western Asia (50%), Northern Africa (48%) Southern Europe (47%) and Australia and New Zealand (45%), the research suggests.(15, 16)

Cesarean section rate in a tertiary referral hospital in Beirut (Lebanon) from 2018 to 2020 was 58,8%. (17)

In relation to the frequency of Cesarean sections, the rate of health implications after Cesarean section has increased analogously (9-10). Cesarean section may associate with diversity of complications in mothers and in newborns. Different published literature shows commonly occurred complications, based on data from different countries and clinics. Complications of Cesarean section for

mother are Infections, that can occur at the incision site, in the uterus and in other pelvic organs such as the bladder;

Hemorrhage or increased blood loss: There is more blood loss in a cesarean delivery than with a vaginal delivery. This can lead to anemia or a blood transfusion (1 to 6 women per 100 require a blood transfusion);

Injury to organs: Possible injury to organs such as the bowel or bladder , Adhesions: Scar tissue may form inside the pelvic region causing blockage and pain. Adhesions can also lead to future pregnancy complications, such as placenta previa or placental abruption (3)

Extended hospital stay: After a cesarean, the normal stay in the hospital is 3-5 days after birth, if there are no complications. Extended recovery time: The amount of time needed for recovery after a cesarean can range from weeks to months. Extended recovery can have an impact on bonding time with your baby (1 in 14 reports incisional pain six months or more after surgery).

Reactions to medications: There can be a negative reaction to the anesthesia given during a cesarean or negative reaction to pain medication given after the procedure.

Risk of additional surgeries: Includes possible hysterectomy, bladder repair or another cesarean.

Maternal mortality: The maternal mortality rate for a cesarean is higher than with a vaginal birth.

Emotional reactions: Some women who have had a cesarean report feeling negative about their birth experience and may have trouble with initial bonding with their baby.

Risks and complications of for newborns may be Premature birth: If gestational age was not calculated correctly, a baby delivered by cesarean could be delivered too early and have low birth weight. Breathing problems, When delivered by cesarean, a baby is more likely to have breathing and respiratory problems. Some studies show the existence of a greater need for assistance with breathing and immediate care after a cesarean than with a vaginal delivery. (14,18-23)

Low APGAR scores, can be the result of anesthesia, fetal distress before the delivery or lack of stimulation during delivery (Vaginal birth provides natural stimulation to the baby while in the birth canal). Babies born by cesarean are 50% more likely to have lower APGAR scores than those born vaginally. Fetal injury, very rarely, the baby may be nicked or cut during the incision (on average, 1 or 2 babies per 100 will be cut during the surgery). It was also assumed that this increased risk could be due to lack of contact with the maternal vaginal and intestinal flora at birth, which causes changes in the development of their immune system, making these children receptive later in life for a number of diseases. Acute complications increase need for NICU admission. (18-23)

We didn't studied risk factors of CS among females and most common complication in mothers and newborns admitted at NICU, that will be informative and may help to compare similar data from other countries.

Our study shows, that in Georgia, during two consecutive years, rate of CS and NICU admission was increased. CS rate during 2021 was 42.8 %, same parameter in 2020 was 40.6 %; Rate of CS in nulliparous woman during 2021 was 52%; same parameter in 2020 was 48%; rate of emergency CS during 2021 was 64 %; same parameter in 2020 was 63,3%; CS at 37-38 week of gestation has shown 30% increases rate of neonatal referral at NICU. Cost effectiveness of CS also is greatly affected, as 63,47% of funding of perinatal services was spent on NICU services.

Conclusion

Cesarean section is alternative method of giving birth among the decades, but indeed the increase of this procedure may have negative impact in term of public health or personal health on the mater-

nal and neonatal side, which is alarming.

Recommendation

It should be highlighted this major factor and increase work to develop and implement policies that improve perinatal services, reduce the number of unnecessary cesarean sections, and increase awareness of perinatal health.

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Ancient Medicine of India: Traditional Roots of Modern Healthcare

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ABSTRACT

Traditional medicine is gaining popularity around the world. Traditional medicine has a long history in India, with Ayurveda being the most representative system. Ayurveda is a life science based on experience which focuses on mind, body, and soul. It emphasizes the importance of personalized medicine as well as a holistic approach to human health. It is one of the world's oldest and most alive traditions. Many significant discoveries have been made in the last decade, adding to Ayurveda's scientific accomplishments. A prospective approach through primary comprehension of Ayurveda followed by a quest for scientific correlation, rather than a thoughtful strategy of looking into Ayurveda through scientific retrospection, is thought to be more appealing. The goal of this study was to look at the various parts of Ayurveda and come up with drug discovery ways to help promote and develop it. This article provides a brief history of medicinal ideas in ancient India and describes traditional Indian medicine using Ayurveda as an illustration to give readers basic information about the history and development of traditional medicine in India. It comprehends the fundamental concepts of Ayurveda, which create the foundation of this ancient science of health, in a simple but scientific manner.

Keywords: Ayurveda, history of Indian medicine, traditional methods, ancient physicians

Introduction

The history of Indian medicine is extensive and illustrious. According to the Holy Scriptures known as the Vedas, particularly in the metrical portions of the Atharvaveda states that the traditional art of medicine Ayurveda was obtained by Dhanvantri the Hindu God of medicine believed to be an incarnation of Lord Vishnu. The compilation of the medical treatises known as the Charaka-Samhita and Sushruta-Samhita credited respectively to Charaka, a physician, and Sushruta, a surgeon, represented the age of prosperity for Indian medicine, which lasted from 800 BCE to around 1000 CE (Shi, Y., Zhang, C., & Li, X. 2020). The five elements theory and the three humoralisms hypothesis are the main supportive foundations of Indian medicine. The five elements theory is a Vedic natural phenomenon that is useful in explaining human

Physiology in medicine. Everything in the world, according to the five elements theory, is made up of five basic elements: Prithvi (earth), Jala (water), Agni (fire), Vayu (air), and Akasha (ether), which, after being eaten, restore the comparable components in the human body. According to the three humoralisms theory, the human body has three humoralisms: gas (Vata), bile (pitta), and mucus (Kapha), the balance of which defines health and illness status. All ancient

civilizations produced their medicinal traditions, but the ancient Indian medical tradition is believed to be the most scientific and integrative, both in terms of concepts and therapeutic approaches. Since the nineteenth century, western and Indian historians have worked hard to interpret the philosophical roots of Ayurveda and its methodology, as well as the chronology of ayurve-

dic literature. Ayurveda's origin, science, Materia medica, development, and decline have all been extensively researched. Ayurveda has also been examined in the ancient Greek medical system through optimistic attitudes. The 21st century has marked the start of a new era, one that is sensitive to eastern healthcare ideology. Ayurveda is widely regarded as exemplifying traditional health care and bringing to light eastern philosophy for its emphasis on principles related to health. In India, Ayurveda schools continuously advocate for the scientific validation of ayurvedic teachings. Ayurvedic practitioners in India understand the significance of integrating science with Ayurveda, and institutions like Banaras Hindu University (BHU) have promoted this concept. What stood in the way of this idea becoming a reality? The Indian scientific community's low opinion of the ayurvedic principle eventually led to a lack of multidisciplinary approach between science and Ayurveda. The emerging realization is that efficient use of Ayurveda requires a greater understanding of its basics. Fortunately, as a result of this realization, an aggressive and argumentative pro-ayurvedic society has emerged. Ayurveda's global diffusion required a scientific representation as well as the removal of linguistic obstacles, allowing it to be understood by individuals who were not familiar with it. Several members of the new genre have been inspired to acknowledge this reality and work as intermediates, speaking in a common language and re-establishing the link between Ayurveda and science while maintaining the original essence and idea.

Method

We researched all of the information presented on the search engines, and ancient scriptures, and talk with an expert of ancient medicine on the history and use of Ayurvedic medicines. Different Components of quality management, normalization, chemo profiling, and metabolite profiling for Ayurvedic medication quality analysis. With the perspectives of security, efficiency, and integrity for the maintenance and control of human health, the development of Ayurvedic medications is growing rapidly. Scientific paperwork, verification procedures, and several other important metrics are all important factors in ensuring the quality, security, and efficiency of Ayurvedic medicines

Ayurveda Medicine

Ayurveda, which means "science of life," is an ancient Indian healthcare system that concentrates on concepts of man and his illness (Sen, S., & Chakraborty, R. (Eds.).2019). Ayurveda is renowned as the "science of longevity" since it gives a complete strategy for living a long and prosperous life. It offers diet and nutrition programs to aid in the body's revitalization. It offers therapy choices for a variety of common illnesses, such as food intolerances, for which there are

currently few options. Ayurveda is not a nutritional system for individuals looking for a way out or an excuse to continue damaging their bodies or minds. It's a system for self-determination, freedom, and longevity. Food is the primary source of sustenance, but as the world becomes more sophisticated, certain ancient practices are being abandoned. As a result, current eating habits

have an impact on a well-balanced diet. India is the leading producer of medicinal herbs. At present, the Ayurvedic system has roughly 250,000 recognized medical practitioners, compared

to about 700,000 in contemporary medicine. According to research, around 20,000 medicinal

plants have been identified in India, Yet traditional practitioners only use 7,000-7,500 of them to treat various ailments. Ayurveda 2000, Siddha 1300, Unani 1000, Homeopathy 800, Tibetan 500, Modern 200, and folk 4500 are the proportions of plant use in various Indian medical systems. Traditional and folk medicine in India employs over 25,000 effective plant-based medicines. In India,

the traditional medicinal system is used by around 1.5 million practitioners for health care. In India, around 7800 manufacturing units are known to be involved in the production of natural health products and traditional plant-based formulations, requiring

over 2000 tons of medicinal raw herbs material annually (M. M. Pandey, S. Rastogi, and A. K. S. Rawat. 2008). As nutritional supplements or ethnic traditional remedies, over 1500 herbals are

available. In impoverished countries, more than 80% of people cannot afford the most fundamental primary medical treatments, medications, or vaccines. Complementary and alternative methods are popular among affluent populations in both industrialized and developing

economies, despite limited evidence of their safety and effectiveness. According to a WHO World Health Organization research, India has the world's highest prevalence of cardiovascular disease and the greatest number of diabetic individuals. Patients with cardiovascular diseases number 4.1, 11.8, 24.5, and 28.9 million in Brazil, Russia, China, and India, respectively. In the same nations, the number of diabetes patients is 4.6, 4.6, 20.8, and 31.7 million respectively.

The cost of lost productivity due to nutrition-related diseases was calculated to be 0.85 % of GDP in 2004 and is expected to rise to 1.2 percent of GDP by 2015. For nearly 340 million individuals, or 30% of the population in cities and 34% of the people living in rural regions,

calorie intake is more than recommended. Micronutrient intake is not at optimal values even in populations with adequate calorie intake. While calorie-dense foods are ingested in large

quantities, micronutrient-dense foods are consumed in little amounts. As a result, both urban and rural communities suffer from serious nutritional deficits. People use dietary supplements and herbal medicines as supplemental or alternative goods. These are dietary supplements that compromise one or more dietary elements (such as vitamins, minerals, herbs or other botanicals, amino acids, and other substances) or their components and are designed to improve the

nutritional quality.

History of traditional medicine in India

In the Indus River Basin, there was an early civilization (the Halaba culture) with cities and well-developed industries such as cloth, pottery, and metal production around early as 2500 BC (Jaiswal, Y. S., & Williams, L. L. 2017). The Aryans who governed India throughout the Vedic era (about 1400 BC to 600 BC) produced a Vedic civilization with Brahmanism at its core, which also inspired the early establishment of ancient Indian philosophy and natural philosophy. The Rigveda, Samaveda, Yajurveda, and Atharva Ved are four important collections of Vedic writings that describe various types of knowledge, concepts, and legends. The Atharvaveda, for example, already offers a wealth of medical information, including details on the human structure, physiology, embryos, sickness, medication, and treatment. However, medicine at the time was focused on a kind of witch doctor rather than the basic notion of naturalism. Ayurvedic medicine, as one of the four Upavedas (probiotics and inferences from the Vedas), was gradually divided into two schools, the Atreya Inner Medicine University and the Dhanvantari Surgery School, from roughly 1500 BC to 1000 BC. Scholars from these two categories composed two key works on Ayurvedic medicine in the early 100 BC: the Charaka Samhita and the Susruta Samhita. Around the year 500, the third major Ayurvedic medical treatise, Astanga Hridaya Samhita, was written, combining the viewpoints of two Ayurvedic med colleges. From AD 500 to AD 1900, a total of 16 prominent drug descriptions were written as supplements to the medical literature, one by one. Ayurveda is thought to be a form of cognitive integrity since vaidyas continuously applied its principles to the natural human world, animals, and plants.

The tridosha, or three humoral hypotheses of Vata, pitta, and Kapha, is fundamental to Ayurveda, and all physical physiological, and pathological origins of diseases are described in terms of the three dosas. Though the three humors or wind, bile, and phlegm were translated into English as wind, bile, and phlegm, respectively, the equilibrium of the three dosas exhibited health, but their disequilibrium or disharmony manifested as a disease. This disequilibrium could affect each of the body's seven dhatus or elements. In symposia and conferences, Ayurveda evolved as a scientific field through debates and discussions among the sages of the time. The vaidyas were encouraged to communicate and share views to further clarify Ayurvedic methodology.

Characteristics of Ayurveda

Ayurveda has 8 specialties: Internal medicine (Kayacikitsa), Surgery (Salya Tantra), otolaryngology (Salakya), gynecology, and pediatrics (Kaumarabhrtya), psychiatry (Bhutavidya), toxicology (Agada Tantra), gerontology (Rasayana Tantra), and eugenics and expediting (Vajikarana). Shamana, Shodhana, surgical therapy, and nutrition therapy are some of the alternative treatments (Qiu, W. X.1999). The main feature of Ayurveda is comprehensive and Integrated therapy, which emphasizes the close relationship between the body and the mind, emphasizing that balance must be maintained in all areas of the body is much more essential than eliminating external microbial factors, using processed natural drugs rather than derived substances or synthetic chemicals, and highlighting disease detection and care through diet." The practices of medicine and food are different. Still, the fundamentals stay the same," according to Ayurveda, which places a "focus on consuming healthful food. "The importance of Ayurveda is thought to lay in the fact that, as one of the major medical sciences, it is beneficial not only to physicians and experts but also to housewives. In its therapy, Ayurveda employs the "Panchakarma" approach. Panchakarma therapy is used in a variety of ways to promote body rejuvenation, detoxification, and longevity Panchakarma is made up of five karmas (activities) that are utilized to eliminate toxins from the body. Virechan (purification by powder, paste, or infusion), Vaman (force vomiting with particular medications), Basti (enema with medicinal oil), Rakta moksha (bloodletting), and Nasya (nasal medication). In Ayurveda medicine, the Rasayana technique (rejuvenated method) can safeguard and promote health by boosting vitality and avoiding or slowing the aging process, whereas Panchakarma (detoxification therapy) can thoroughly cleanse the body of ailments by removing the body's poisons and waste. Ayurvedic medicine contains compounds that are highly useful for a variety of ailments, including the common cold, fever, excessive gastric acid, ulcer, cough, gastrointestinal problems, diarrhea, amebic dysentery, liver diseases, uterine bleeding, urinary tract infection, arthritis, gout, bronchial asthma, and eye diseases. It also has potential results in the treatment of chronic diseases such as hypertension, angina, myocardial infarction, congenital heart disease), cancer, dengue fever, and inflammatory diseases, as well as kidney ailments. According to research, Ayurvedic medications have also been demonstrated to aid with various crises, such as severe diarrhea and vomiting, typhoid fever, delirium, burns, poisoning, threatening abortion, and miscarriage.

Ancient India's education system

By the 2nd century BCE, medicine had established itself as a distinct field (Lochan, K. (2003). Following completion of basic school, the medical study was pursued. The gurus at their ashramas provided medical training. In ancient India, the University of Taxila was well known for the field of medicines, and students who graduated from it were held in high respect. Ayurvedic stu-

dents came from many castes and social Strata According to Charaka, the aim of pursuing this course differed depending on the caste (Mukherjee PK, et al, 2017). Brahmins practiced medicine because they cared about people, Kshatriyas because they wanted to keep people safe, and Vaishyas because they wanted to make money. Sudras, according to the Sushruta Samhita might practice medicine if they were from a good household. here are few references to medical families. According to the Charaka Samhita, individuals from such backgrounds were given priority admission. Charaka, on the other hand, claims that it is education, not birth, That Determines a vaidya. The inherent characteristics and exterior physique of a learner who is to be enrolled as a medical student are described in length in the Sushruta Samhita. This was a highly rigorous admissions process. Honesty, humility, temperance, generosity, and hard work were demanded of medical students. His academic achievement and intelligence were also emphasized. A formal ceremony was held to accept the medical student.

He was supposed to adhere to a rigid standard of ethics and behavior. According to Jivaka's mythology, medical training took seven years to complete. They were also inspired to study mythology, popular ideas, and Bhuta Vidya. Ayurvedic education included a lot of practical instruction. Observing their professor cure the sick and assisting him in the formulation of medicines provided a wealth of knowledge. Ayurvedic trainees should conduct surgical techniques on vegetables, fruits, and animal parts of the body, according to Sushruta. Sushruta advised close examination of a corpse for anatomical information. Understanding how to recognize herbs is another something Charaka recommends. After completing medical school, the student was expected to enhance his elocution, communication skills, and comprehension. At present, The Central Council of Indian Medicine (CCIM) was created in 1970 by the Central Council of Indian Medicine Act and is currently in charge of ISM teaching and practice. In 2016, India had around 125 universities (76 Ayurveda, 8 Unani, 3 Siddha, and 40 homeopathic schools), with over 2700 schools offering admission credentials. The elite universities of Indian Medical schools are the National Ayurveda Institute India (Jaipur), National Naturopathy Research Institute (Poona), and Ayurveda Graduate Institute of Teaching and Research (Jamnagar), National Unani Medical Research Institute (Bangalore), and National Siddha Medical Research Institute (Chennai).

Vedic Healers

The four Vedas, alongside their Brahmanas, Aranyakas, and Upanishads, provide the earliest trustworthy knowledge about medicine and medical professionals in India, dating back to 1500 BCE (Subbarayappa, B. V. (Ed.). (2001). Divine influences were responsible for human illnesses, and magico-religious remedies were used to treat them. The priests' job was to bring the deities and mankind together. They were thought to be able to call upon, satisfy, and invite the deities. Through their mantras, priests had almost supernatural control over deities, so they used this ability for treatment. As a result, the priest acted as both a healer and a priest. Through magico-religious practices, the Atharvans, Angiras, and Bhrgus were thought to be skilled at treating. They are also credited with writing the Atharva Veda, which includes details on the ancient insight into the human body, illnesses, and treatments. Herbs and their byproducts made up the majority of the Vedic healers' materia medica. "For a competent healer, the herbs band together like an army of kings," the Rig Veda reads. Cow's milk and its derivatives, land, and water from diverse sources, powdered shells, and rock salt were among the other ingredients used. Through chants and offerings, the Vedic priest would spiritualize the medication. Instillation, disinfection, and topical application of creams were also used in combination with oral medications. As amulets, several herbs were utilized. The medications were

given out at specific times and locations. The Vedic priest would try a variety of methods to expel or pacify the evil cause of illness, which was rather innovative. The devil could be "caught" in a trench filled with hot water and encircled by flames. The patient's fever was "relocated" to a frog tethered under his bed. The Atharva Veda is full of magical and religious spells and procedures for curing various ailments. Various body parts, especially bones and vital organs, are described in the Atharva Veda.

Future of traditional Indian medicine

Herbal pharmaceuticals are progressively migrating from the fringe to the mainstream market, as more people are seeking alternative treatment and are concerned about the adverse effects of artificial drugs. According to a WHO survey, 80% of the world's population is enthusiastic about the development of sustainable medicines and eager to explore herbal therapy as their primary medical treatment (World Health Organization, 2009). More than 3000 types of medicinal plants are found in India, and more than 6000 types of plants are being used by individuals, contributing to around 75 percent of herbal plants in developing nations; more than 1000 industries make indigenous medicines. When combined with India's thousands of years of practical experience with Ayurvedic preparations, the country has the potential to become the world's largest herbal

supplier. Indian medicine has a strong scientific foundation and has been validated by contemporary studies. However, numerous obstacles still exist in the propagation of herbal medicine, particularly in wealthy countries. The following issues must be resolved before traditional herbal medicine understanding can be spread over the world: The discovery and authenticity of medicinal materials are significant roadblocks to the advancement of traditional Indian medicine. For instance, "various objects with the same name" or "different names for the same item" is a typical occurrence. There is a scarcity of professionals with specialized diagnostic knowledge and expertise, mold and heavy metal content in herbal medicine surpasses norms, and herbal medicine is frequently falsified and damaged. The adverse effects of herbs aren't given much weight by Ayurvedic practitioners. Herbal side effects are significantly less common and

severe than synthetic medication adverse effects, but they must be considered. The area of habitats ideal for the cultivation of herbal medicines is shrinking as a result of the government's lack of oversight. Pharmaceutical manufacturers' unethical abuse of wild medicinal herbs has harmed India›s pharmaceutical resources, and several endangered medicinal assets are on the edge of extinction. Many herbal medications are not made and sold in India in compliance with international standard requirements, which is one of the reasons they are impossible to reach western Industrialised countries. Indian medicine is a healthier way of living as well as a method of medical therapy. Herbal medicine's use, as well as its connection to Indian mythology and Buddhism, has been cloaked in obscurity. Indian medicine is currently in a precarious state. Against the medical backdrop of Conventional medicine dominating the majority, Indian medicine distinguishes itself on two levels: People in poor areas who do not have access to Western care nevertheless practice Ayurvedic medicine. Meanwhile, Ayurvedic medicine's pricey aromatherapy and herbal oil therapy are immensely popular in topmost society. Indian medicine is viewed as an «alternate» approach to contemporary medicine, which makes it more appealing in Europe and America. Some Europeans and Americans come to Indian medicine's birthplaces to pursue life lessons and participate in a complete Indian medicine program, which includes food, yoga, psychotherapy, meditation, massage, and spiritual talks. Indian tourism, it's becoming a unique marketing factor.

Conclusion

Several medical providers have significantly contributed to Indian healthcare systems throughout history. We have detailed the chronology of Indian medical systems, and their influence on prehistoric, medieval, and contemporary medicine. Medical school was rigorous, producing doctors who were equally adept at medicine and surgery as well as at public speaking and communication (Vedam, R., Pansare, T. A., & Narula, J. 2021). The panchabhautic theory, the Prakriti concept, is used to characterize the genetic disposition to and diagnosis of illness as well as control the option of therapeutic interventions, and the balance and imbalance of the three doshas (Vata, pitta, and Kapha) in the onset of disease, are all key principles in Ayurveda. Ayurveda builds on these notions in order to develop and implement therapies to remedy the imbalance. Medicines' activities are characterized by their many attributes (such as rasa, guna, veerya, vipaka, and prabhava), which are all based on their chemical analysis. It is imperative that new technology be used to investigate the applicability of these principles so that they can be evaluated in light of current scientific terminology in order to provide sophisticated health care.

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Biomarkers Show Positive Link for Diagnosis between Alzheimer's and Down Syndrome

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ABSTRACT

Aim- The main aim of this research paper is to review and consider some of the biomarkers in CSF and plasma linking the occurrence of Alzheimer's Disease in patients having Down syndrome.

Introduction- Alzheimer's is one of the leading causes of senile dementia worldwide with key characteristics such as Aβ Amyloid plaques and neurofibrillary tangles in the brain. In down syndrome, trisomy of the 21st chromosome leads to the added risk of developing key features seen in Alzheimer's.

Discussion- Several blood and CSF biomarkers were seen to be elevated in patients with Down Syndrome showing similarities to patients with Alzheimer's disease. The review supplies a brief overview of key biomarkers and their underlying pathological process including Amyloid plague, Tau Proteins, Cholinergic neurons, Oxidative stress markers, and Neuroinflammatory markers, linking both conditions.

Conclusion- Numerous biomarkers found in AD in DS appear to overlap with those found in other illnesses. Discovery of more biomarkers would likely reduce the chances of a misdiagnosis and allow for improved treatment development.

Keywords: biomarkers; Down syndrome; Alzheimer's disease; blood; CSF

Substance Abuse, Anxiety, Depression affects ADHD Course? Findings from a Sample of Individuals with ADHD symptoms

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ABSTRACT

ADHD denotes attention deficit hyperactivity disorder. Attention deficit in ADHD stands for inattention, in which the person can't stay focused, Hyperactivity stands for impulsiveness and being overly active(Cannon Homaei et al., 2022). ADHD is one of the most serious conditions which affect children by behaviour problems and learning disorder

According to DSM-5, ADHD can be classified into three sub-types,

Inattentive – has 9 symptoms e.g. The person may not listen, make mistakes, easily distracted.

Hyperactive Sub-type – also has 9 symptoms, e.g., Frigidity, squirming around, getting up often, can't stay still in a place for a long time.

Both – are mostly found in children.

In adults: Symptoms may disappear or persist. ADHD will not suddenly develop in adults. It can interrupt work and other activities. Medications can help. Hyperactivity here is different since disables adults from sitting still for a long time. Also suffer from mood instability, impulsive decision making, short temperament, disorganization, and also sometimes depression.

Our hypothesis was Risk of ADHD is high in the population with anxiety and depression and also in individuals who use alcohol often or some form of addiction.

The result is generally 7.8% were highly like to have ADHD and individual with severe anxiety 20% is highly like to have ADHD. In individual with depression 15 % were highly like to suffer from ADHD.

Discussion is 3-5 percent of the adult are believed to be suffering from ADHD (Wender & Tomb, 2016) and according to our result 7.8 percent were highly likely to suffer from ADHD. A study that investigated women with depression found that 12.8 percent were suffering from symptoms of ADHD and 3.4 percent met the criteria according to DSM 5(Powell et al., 2021). In our study After identifying 20 individuals who reported that they were depressed nearly every day and more than half days we found that according to the attention checklist 15 % were highly likely to suffer from ADHD.

We got positive to our hypothesis we found that the risk of ADHD was higher in individuals who suffered from depression, anxiety, or some form of addiction, to alcohol.

Keywords: ADHD, age progression, anxiety and depression, substance abuse

INTRODUCTION:

ADHD is a serious problem among young adults it affects their productivity and career so our primary aim was to study the prevalence of ADHD in young specifically, in general student population and to find how prevalence differs in individuals who reported having depression, who reported that they suffered from severe anxiety, and individuals who use alcohol for relaxing often or any form of addiction. Attention deficit hyperactivity disorder was previously classified into two dif-

ferent conditions one is ADD (attention deficit disorder) and the other was hyper activity disorder finally experts and physicians came to one conclusion called Attention deficit hyperactivity disorder (Wender & Tomb, 2016). This remained very unpopular in past decades and now it is getting very much popularity. ADHD symptoms are been well classified in DSM-5 (diagnostic and statistical manual of mental disorder) (Wender & Tomb, 2016) .5-10 percent of children are believed to suffer from ADHD, and 3-5 percent of adults. In some lucky cases, these symptoms tend to disappear as they grow however these symptoms persist from children to adults in a lot of cases (Wender & Tomb, 2016). ADHD is one of the most serious conditions which affect children with behavior problems and learning disorders (Wender & Tomb, 2016). Inattention in school and towards friends can decrease a child's performance in school and also he or she may have very few friends because of this condition (Wender & Tomb, 2016). It is necessary to note that not all children with ADHD need to be hyperactive however they will be suffering from inattention and other symptoms (Wender & Tomb, 2016). A child with ADHD will be comparatively weaker in controlling impulse than other children (Wender & Tomb, 2016). Children who suffer from ADHD will have trouble with reading and understanding the sentence and their mathematics skills are comparatively weaker than their peers, so children with ADHD tend to have a learning disorder. Coordination and planning are one of the most difficult tasks for children with ADHD. (Wender & Tomb, 2016)

ADHD IN ADULTS

Although ADHD symptoms start to disappear and get vanished when children grow it's not the case for everyone. Oftentimes symptoms will persist even in their thirties and forties (Wender & Tomb, 2016). There are no chances of sudden development of ADHD in adults (Wender & Tomb, 2016). ADHD in an adult will appear only if the individual has it in childhood and this can help us in diagnosis. Inattention in an adult can interrupt their work and study. Often this adult cannot grab information that his friends or peers say (Wender & Tomb, 2016). Medicating these individuals will help and improve their attention and also help them by being less distractibility. Hyperactivity in adults is far more different than hyperactivity in children will disable adults from sitting for a long time often they have to make small movements. These adults also suffer from impulsivity they often make decisions without thinking. Instability in mood is also a symptom of ADHD in the adult. They really get excited often more than what is required and they also experience depression and low often ADHD patients always are short-tempered and disabled in organization and planning. (Wender & Tomb, 2016)

RISK OF DEPRESSION

Individuals with ADHD are at higher risk of severe depression than an individual without ADHD (Biederman et al., 2008; Riglin et al., 2020). Since ADHD have many other associated mental health problems studies suggest that depression may mask individual with ADHD so it may have higher chances that ADHD go without diagnosis (McIntosh et al., 2009). A study that investigated women with depression found that 12.8 percent were suffering from symptoms of ADHD and 3.4 percent met the criteria according to DSM 5 (Powell et al., 2021).

RISK OF ACCIDENT AND INJURIES

Recently studies have suggested that adolescents and adults with ADHD are at high risk of injuries and accidents (Adeyemo et al., 2014; Jerome et al., 2006). A systematic review of life span risk

of injuries among ADHD patients found out that the risk of injuries was higher from age 12-to 18 and age 18-25 (Brunkhorst-Kanaan et al., 2021).

LINK OF ADHD WITH ANXIETY

In the majority of ADHD in adults is identified with many other internal health problems, including mood, anxiety, substance use, and personality diseases (Cumyn et al., 2009). ADHD has a high link to General Anxiety Disorder this has been shown by many studies (Fuller-Thomson et al., 2016; Safren et al., 2001; Van Ameringen et al., 2011). It is also important with having a highly elevated risk factor for substance abuse by the individual with ADHD (Fuller-Thomson et al., 2016; Kessler et al., 2005; Wilens et al., 2011). We can also interpret that individual can also use the substance to compensate for the anxiety symptoms (Robinson et al., 2009).

1-According to the 175 studies done, the prevalence of the disorder came out to be 179, with the complete estimation of 7.2 %. the 95 % confidence interval, came out to be in the range of 6.7 – 7.8. (Thomas et al., 2015).

2- Multivariable analysis demonstrated the prevalence estimates of 0.04 for ADHD was less when the 4rth edition of DSM was used. (Thomas et al., 2015).

3-The global community prevalence of ADHD is in the range of 2% to 7%, averaging up to 5 % in children which are just below the threshold limit of meeting the diagnostic criteria of ADHD. (Sayal et al., 2018)

4-In reference to the national 2016 parent survey, 6.1 million children were diagnosed with ADHD, in the following age ranges:

a) 2-5 yrs.: 388,000 children

b) 6-11 yrs.: 2.4 million children

c) 12-17 yrs.: 3.3 million children

Also, boys were more likely to be diagnosed with ADHD,12.9 %, as compared to girls, 5.6%.

Also, among this, behavioural troubles and conduct problems were observed in about 5 out of 10 children with ADHD, and anxiety was noted in 3 out of 10 children with ADHD (Danielson et al., 2018). Our research hypothesis was the risk of ADHD is high in the population with anxiety and depression and also in individuals who use alcohol often or have some form of addiction.

METHODOLOGY

Study design- We perform a cross-sectional quantitative study process. We performed a cross-sectional study on 83 people from different countries. Most of the people are from Georgian American university of country Georgia.

Setting – We have created a questionnaire form in the web anketa forms. We distributed this questionnaire to people in different countries through WhatsApp, Instagram, telegram, and Facebook. All of the questions in the survey were mandatory. The survey is done in 7 days.

Study subjects- The 83 students were chosen by simple random technique. These include people from different countries of different races, ethnicity, and age. This survey includes question-related about their gender, nationality, awareness of attention-deficit hyperactivity disorder, attention problems during work and listening to someone, the difficulty in remembering and organizing different tasks, concentration in meetings, anxiety, depression, and addiction.

Ethical issues related to human participants- Participants were not harmed while collecting this data. All participants provided informed consent for use of their data for ADHD research. The partic-

ipants voluntarily filled out the survey forms on ADHD. Privacy of the participants was maintained and the information was only used for research purposes. Autonomy pertaining to both informed, voluntary, competent decision making and the privacy of personal information is the most salient ethical value for use of human participants.

We had used the questionnaire to elevate ADHD symptoms according to DSM 5 criteria and we had taken the data to an excel sheet, we had allotted scores to each question according to the checklist and used the scores for our result.

RESULT

We had got 75% response from India ,21%response from Georgia ,1.1%from Australia and 1.1%from Canada .44.58% were male ,54.22%were female and 1.2 %were other .21.69% respondents were from age 15-20 ,75.9% from age 21-30and we also got 2.41%from age 31-40.For the question of whether our respondents are aware of the disorder called ATTENTION-DEFICIT /HYPERACTIVITY DISORDER 61.45%were aware of ADHD and 38.55%were not aware of ADHD.For question How often do you make careless mistakes when you have to work on a boring or difficult project? We got responses of 2.41%were responded as never,31.33%responded as rarely,44.58%response were sometimes,15.66% responded were often and 6.02%response were very often. For question How often do you have difficulty keeping your attention when you are doing boring or repetitive work? The response we got was 6.02% were never,20.48%were rarely,39.76%were sometimes 25.4%were often, and 8.43%were very often. For question How often do you have difficulty concentrating on what people say to you, even when they are speaking to you directly? We got a response as 19.28 %were never,30.12%were rarely,39.76%were sometimes,9.64%were often and 1.2% were very often. For question How often do you have difficulty getting things in order when you have to do a task that requires organization? We got a response as 24.1 %were never,27.71%were rarely,40.96%were sometimes,4.82%were often and 2,14 %were very often. For the question How often do you misplace or have difficulty finding things at home or at work? We got a response as 12.05% as never,32.53%as rarely,32.53 % as sometimes,16.87% were often and 6.02%were very often. For the question How often do you have problem in summarizing a project after completing the hard part of it? responses were 14.46 %were never,33.73%were rarely,37.35 %were sometimes, and 12.05 %were often, and 2.41%were very often. For the question When you have a task that requires a lot of thought, how often do you avoid or delay getting started? We got a response as 15.66% were never,16.87%were rarely,37.35% were sometimes,26.51% were often and 3.61% were very often. For the question How often are you distracted by activity or noise around you? We got a response as 6.02%were never,22.89% were rarely,30.12% were sometimes,21.69% were often and 19.28% were very often. For the question How often do you have problems remembering appointments or obligations? 20.48% were never 27.71% were rarely,32.53% were sometimes,14.46% were often, and 4.82 % were very often. For the question How often do you fidget or squirm with your hands or feet when you have to sit down for a long time? 8.43 %were never,20.48% were rarely,44.58 % were sometimes,20.48%were often and 6.02 %were very often. For the question How often do you leave your seat in meetings or other situations in which you are expected to remain seated? We got 32.53% were never,33.73% were rarely,21.69%sometimes,7.23 % were often and 4.82 % were very often. For How often do you have difficulty unwinding and relaxing when you have time to yourself? 18.07 % were never ,22.89 %were rarely ,39.76 % sometimes ,12.05 %often and 7.23 % were very often. For the question How often do you feel overly active and compelled to do things, like you were driven by a motor? We got

9.64 % were never,28.92 % were rarely,44.58% were sometimes,12.05% were often and 4.82 %were very often. For the question How often do you find yourself talking too much when you are in social situations? We got 14.46 % were never,21.69% were rarely, 46.99% were sometimes,10.84% were often and 6.02 % were very often. For the question When you're in a conversation, how often do you find yourself finishing the sentences of the people you are talking to before they can finish them themselves? We got a response as 15.66% never,24.1% were rarely,32.53 % were sometimes,18.07 % were often and 9.64 % were from very often. For the question How often do you have difficulty waiting your turn in situations when turn taking is required? 18.07% were never,25.3% were rarely,31.33% sometimes,14.46 5 were often and 10.84 % were very often. For question How often do you interrupt others when they are busy? 19.28 % were never,34.94 % were rarely,37.35 % were sometimes,6.02 % were often and 2.41% were very often. for the question How often do you feel restless or fidgety? We got 7.23 % were never,20.48 % were rarely,48.19 % were sometimes,18.07% were often and 6.02 % were very often.

For the question Does worry or anxiety makes it hard to concentrate? We got responses that 6.02 % were never,14.46 % were rarely,36.14 % were sometimes,26.51 % were often and 16.87 % were very often. for question Do you need alcohol to help you relax? We got responses 62.65 % were never,15.66 % were rarely,12.05 % were sometimes,7.23 % were often and 2.41 % were very often .for the question Feeling down, depressed, or hopeless we got responses 45.78 % were not all days,30.12% were several days,16.87% were more than half of the days and 7.23 percent nearly every day. for question have you ever used any form of addiction? we got 18.07% as yes and 81.93% were no.

ANALYSIS OF ADHD ACCORDING TO ATTENTION CHECKLIST AND HYPERACTIVITY CHECKLIST.

After analysing scores of each individual according to the attention checklist we found that 43.52 % were unlikely to have ADHD,33.40 % were likely to have ADHD and 7.8% were highly likely to have ADHD.

After analysing scores of each individual according to the hyperactivity checklist we found that 59.52% were unlikely to have ADHD,32.14% were likely to have ADHD and 9.52% were highly likely to have ADHD.

ANALYSIS OF ADHD IN INDIVIDUALS WITH ANXIETY.

We also wanted to check the prevalence of ADHD in individuals who reported they suffer from severe anxiety and we were able to identify 15 individuals and out of 15 individuals

According to the attention checklist after analysing scores we found that 13.33 % were unlikely to have ADHD,66.66% were likely to have ADHD and 20 % is highly likely to suffer from ADHD.

According to the hyperactivity checklist we got 13.33% were unlikely to have ADHD,66.66%were likely to have ADHD and 20% is highly likely to have ADHD.

ANALYSIS OF ADHD IN INDIVIDUALS WHO NEED ALCOHOL TO RELAX.

Out of 2 individuals who reported that they need alcohol to relax according to the attention scale we found 50 %were unlikely to suffer from ADHD and 50 % were likely to suffer from ADHD .This same result was observed after analysing scores according to hyperactivity we found that 50 % were unlikely to suffer from ADHD and 50 % were likely to suffer from ADHD.

ANALYSIS OF ADHD IN INDIVIDUALS WHO REPORTED TO DEPRESSION.

After identifying 20 individuals who reported that they were depressed nearly every day and more than half days we found that according to the attention checklist 35% were unlikely to suffer from ADHD and 50 % were likely to suffer from ADHD and 15 % were highly likely to suffer from ADHD. According to hyperactivity checklist we found 35% were unlikely to suffer from ADHD,50 % were likely to suffer from ADHD and 15 % were highly like to suffer from ADHD.

ANALYSIS OF ADHD IN INDIVIDUALS WHO USED SOME FORM OF ADDICTION.

Out form 15 individuals who reported that they had used some form of addiction in their life so according to both the attention and hyperactivity checklist we found 33.33% were unlikely to have ADHD,53.33% were likely to have ADHD and 13.333% were highly likely to have ADHD.

DISCUSSION

3-5 percent of the adult are believed to be suffering from ADHD (Wender & Tomb, 2016) and according to our result 7.8 percent were highly likely to suffer ADHD, according to the hyperactivity checklist 9.52% were highly likely to have ADHD please note this is the possible result, not the actual diagnosis. ADHD has a high link to General Anxiety Disorder this has been shown by many studies (Fuller-Thomson et al., 2016; Safren et al., 2001; Van Ameringen et al., 2011). In Individual who reported that they suffer from a severe form of Anxiety According to the attention checklist after analysing scores we found that 13.33 % were unlikely to have ADHD,66.66% were likely to have ADHD and 20 % is highly likely to suffer from ADHD, according to hyperactivity checklist we got 13.33% were unlikely to have ADHD,66.66%were likely to have ADHD and 20% is highly likely to have ADHD. So as we discussed in our literature review we found that individual who suffers from anxiety has a high risk of suffering from ADHD also so ADHD has a high link with anxiety. A study that investigated women with depression found that 12.8 percent were suffering from symptoms of ADHD and 3.4 percent met the criteria according to DSM 5 (Powell et al., 2021). In our study After identifying 20 individuals who reported that they were depressed nearly every day and more than half days we found that according to the attention checklist 15 % were highly likely to suffer from ADHD, and according to the hyperactivity checklist we found that 15 % were highly like to suffer from ADHD. So again, we got the result that the risk of ADHD is high in individuals who suffer from depression. It is also important that individuals who suffer from ADHD are at high risk of using substance abuse and addiction (Fuller-Thomson et al., 2016; Kessler et al., 2005; Wilens et al., 2011). So here Out of 2 individuals who reported that they need alcohol to relax according to the attention scale, we found 50 %were unlikely to suffer from ADHD and 50 % were likely to suffer from ADHD. This same result was observed after analysing scores according to hyperactivity we found that 50 % were unlikely to suffer from ADHD and 50 % were likely to suffer from ADHD. Out form 15 individuals who reported that they had used some form of addiction in their life so according to both the attention and hyperactivity checklist, 13.333% were highly likely to have ADHD.

CONCLUSION

We would like to conclude that the result we got may not be exact numbers or diagnoses because ADHD diagnosis is made in clinical settings with family history also. However, we can assume the individual who is likely to suffer from ADHD from our results are at risk of suffering from ADHD. our hypothesis was Risk of ADHD is high in the population with anxiety and depression and also

in individuals who use alcohol often or some form of addiction. We got positive to our hypothesis we found that the risk of ADHD was higher in individuals who suffered from depression, anxiety, or some form of addiction, to alcohol.

RECOMMENDATION

Training cognitive functions in ADHD children and students seem to be less effective therefore initially providing a healthy and supportive environment in academic and social structures can prove to be helpful. Effective counseling and mentoring programs leaning towards awareness and management could be a big deal. having the education programs include more extra-curricular activities can help improve and develop new skills. rewarding good behavior, especially in children, can facilitate further academic enhancement. all in all, providing a supportive, positive, helping, and motivating environment, referring sections of society and health determinants including social support from family friends, and teachers, can prove to be a big deal in the direction towards improvement. we would also recommend running a college campaign so individuals may be aware of ADHD and manage their symptoms or they can take physician help.

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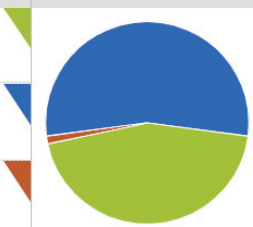
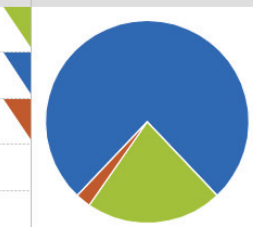
ANNEXURE 1

gender

Answers	Graph	%	Sum
male		44.58	37
female		54.22	45
other		1.2	1
	Total answers:		83
	Non-response:		0

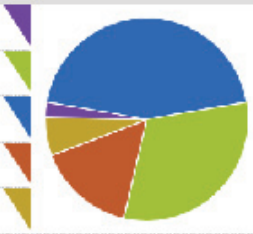
age

Answers	Graph	%	Sum
15-20		21.69	18
21-30		75.9	63
31-40		2.41	2
40-50		0	0
50 above		0	0
	Total answers:		83
	Non-response:		0

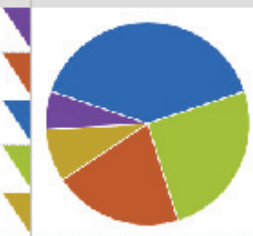
are you aware of disorder called Attention-Deficit / Hyperactivity Disorder (ADHD) ?

Answers	Graph	%	Sum
yes		61.45	51
no		38.55	32
	Total answers:		83
	Non-response:		0

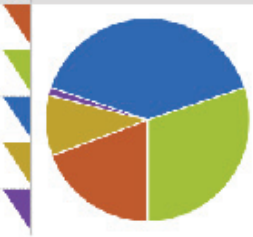
How often do you make careless mistakes when you have to work on a boring or difficult project?

Answers	Graph	%	Sum
Never		2.41	2
rarely		31.33	26
sometimes		44.58	37
often		15.66	13
veryoften		6.02	5
	Total answers:		83
	Non-response:		0

How often do you have difficulty keeping your attention when you are doing boring or repetitive work?

Answers	Graph	%	Sum
never		6.02	5
rarely		20.48	17
sometimes		39.76	33
often		25.3	21
veryoften		8.43	7
	Total answers:		83
	Non response:		0

How often do you have difficulty concentrating on what people say to you, even when they are speaking to you directly?

Answers	Graph	%	Sum
never		19.28	16
rarely		30.12	25
sometimes		39.76	33
often		9.64	8
veryoften		1.2	1
	Total answers:		83
	Non response:		0

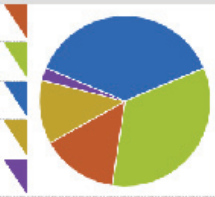
How often do you have difficulty getting things in order when you have to do a task that requires organization?

Answers	Graph	%	Sum
never		24.1	20
rarely		27.71	23
sometimes		40.96	34
often		4.82	4
veryoften		3.41	2
	Total answers:		83
	Non-response:		0

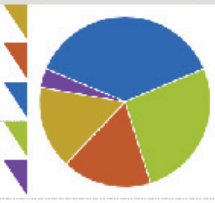
How often do you misplace or have difficulty finding things at home or at work?

Answers	Graph	%	Sum
never		12.05	10
rarely		32.53	27
sometimes		32.53	27
often		16.87	14
veryoften		6.02	5
	Total answers:		83
	Non-response:		0

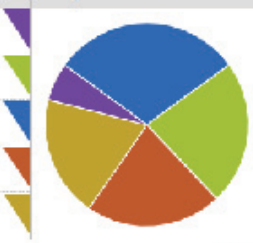
How often do you problem in summarizing project after completing hard part of it ?

Answers	Graph	%	Sum
never		14.46	12
rarely		33.73	28
sometimes		37.35	31
often		12.05	10
veryoften		2.41	2
	Total answers:		83
	Non response:		0

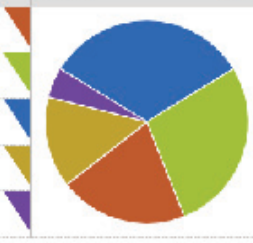
When you have a task that requires a lot of thought, how often do you avoid or delay getting started?

Answers	Graph	%	Sum
never		15.66	13
rarely		16.87	14
sometimes		37.35	31
often		26.51	22
veryoften		3.61	3
	Total answers:		83
	Non-response:		0

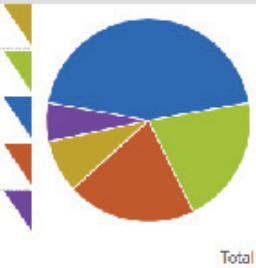
How often are you distracted by activity or noise around you?

Answers	Graph	%	Sum
never		6.02	5
rarely		22.89	19
sometimes		30.12	25
often		21.69	18
veryoften		19.28	16
	Total answers:		83
	Non-response:		0

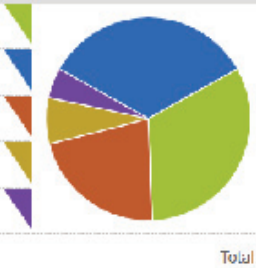
How often do you have problems remembering appointments or obligations?

Answers	Graph	%	Sum
never		20.48	17
rarely		27.71	23
sometimes		32.53	27
often		14.46	12
veryoften		4.82	4
	Total answers:		83
	Non-response:		0

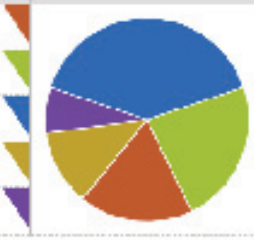
How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?

Answers	Graph	%	Sum
never		8.43	7
rarely		20.48	17
sometimes		44.58	37
often		20.48	17
veryoften		6.02	5
	Total answers:		83
	Non-response:		0

How often do you leave your seat in meetings or other situations in which you are expected to remain seated?

Answers	Graph	%	Sum
never		32.53	27
rarely		33.73	28
sometimes		21.69	18
often		7.23	6
veryoften		4.82	4
	Total answers:		83
	Non-response:		0

How often do you have difficulty unwinding and relaxing when you have time to yourself?

Answers	Graph	%	Sum
never		18.07	15
rarely		22.89	19
sometimes		39.76	33
often		12.05	10
very often		7.23	6
	Total answers:		83
	Non-response:		0

How often do you feel overly active and compelled to do things, like you were driven by a motor?

Answers	Graph	%	Sum
never		9.64	8
rarely		28.92	24
sometimes		44.58	37
often		12.05	10
very often		4.82	4
	Total answers:		83
	Non-response:		0

How often do you find yourself talking too much when you are in social situations?

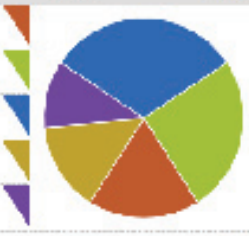
Answers	Graph	%	Sum
never		14.46	12
rarely		21.69	18
sometimes		45.78	38
often		10.84	9
very often		7.23	6
	Total answers:		83
	Non-response:		0

When you're in a conversation, how often do you find yourself finishing the sentences of the people you are talking to, before they can finish them themselves?

Answers	Graph	%	Sum
never		12.05	10
rarely		24.1	20
sometimes		32.53	27
often		18.07	15
very often		13.25	11
	Total answers:		83
	Non-response:		0

How often do you have difficulty waiting your turn in situations when turn taking is required?

Answers	Graph	%	Sum
never		13.07	10
rarely		25.3	21
sometimes		31.33	26
often		14.46	12
veryoften		10.84	9



Total answers: 83
Non-response: 0

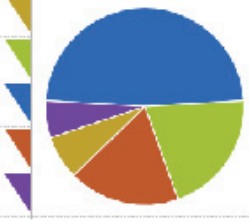
How often do you interrupt others when they are busy?

Answers	Graph	%	Sum
never		19.28	16
rarely		34.94	29
sometimes		37.35	31
often		6.02	5
veryoften		2.41	2

Total answers: 83
Non-response: 0

How often do you feel restless or fidgety?

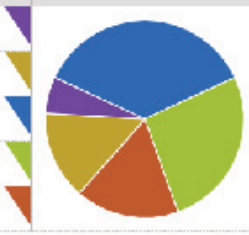
Answers	Graph	%	Sum
never		7.23	6
rarely		20.48	17
sometimes		48.19	40
often		18.07	15
veryoften		6.02	5



Total answers: 83
Non-response: 0

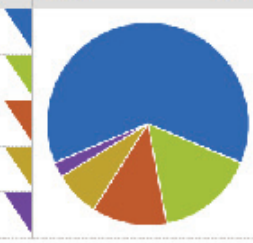
Does worry or anxiety make it hard to concentrate?

Answers	Graph	%	Sum
never		6.02	5
rarely		14.46	12
sometimes		36.14	30
often		26.51	22
veryoften		16.87	14

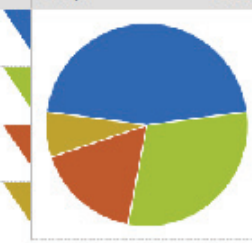


Total answers: 83
Non-response: 0

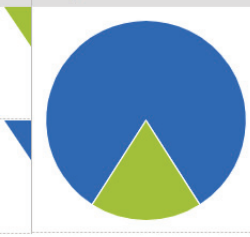
Do you need alcohol to help you relax?

Answers	Graph	%	Sum
never		62.65	52
rarely		15.66	13
sometimes		12.05	10
often		7.23	6
veryoften		2.41	2
	Total answers:		83
	Non response:		0

Feeling down, depressed, or hopeless

Answers	Graph	%	Sum
not at all days		45.78	38
several days		30.12	25
More than half of the days		16.87	14
Nearly every day		7.23	6
	Total answers:		83
	Non-response:		0

have you ever used any form of addiction ?

Answers	Graph	%	Sum
yes		18.07	15
no		81.93	68
	Total answers:		83
	Non-response:		0

ANNEXURE 2

gender

age

are you aware of disorder called Attention-Deficit / Hyperactivity Disorder (ADHD) ?

How often do you make careless mistakes when you have to work on a boring or difficult project?

How often do you have difficulty keeping your attention when you are doing boring or repetitive work?

How often do you have difficulty concentrating on what people say to you, even when they are speaking to you directly?

How often do you have difficulty getting things in order when you have to do a task that requires organization?

How often do you misplace or have difficulty finding things at home or at work?

How often do you problem in summarizing project after completing hard part of it ?

When you have a task that requires a lot of thought, how often do you avoid or delay getting started?

How often are you distracted by activity or noise around you?

How often do you have problems remembering appointments or obligations?

How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?

How often do you leave your seat in meetings or other situations in which you are expected to remain seated?

How often do you have difficulty unwinding and relaxing when you have time to yourself?

How often do you feel overly active and compelled to do things, like you were driven by a motor?

How often do you find yourself talking too much when you are in social situations?

When you're in a conversation, how often do you find yourself finishing the sentences of the people you are talking to, before they can finish them themselves?

How often do you have difficulty waiting your turn in situations when turn taking is required?

How often do you interrupt others when they are busy?

How often do you feel restless or fidgety?

Does worry or anxiety make it hard to concentrate?

Do you need alcohol to help you relax?

Feeling down, depressed, or hopeless

have you ever used any form of addiction ?

Effects of Physical Exercise on Declarative Memory. Narrative Review

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ABSTRACT

The aging population with a sedentary lifestyle is growing. The aging process leads to declined memory. Delaying and reducing the negative effects that accompany the aging process is an active subject of interest. There is evidence demonstrating beneficial outcomes of physical exercise (PE) on memory in rodents and humans, therefore it has been considered an important non-medication intervention to preserve mnemonic processes. Knowledge about the exact mechanisms of exercise-induced improvement of memory will make it possible to create exercise guidelines specific to health. The purpose of this paper is to review existing literature about PE effects on memory and possible underlying mechanisms inducing beneficial outcomes.

Investigations exploring the effects of PE on memory have employed either acute or long-term, chronic interventions. The effects of acute PE on memory are time-dependent, meaning that memory formation is dependent on whether the exercise bout is performed before, during, or after the specific memory trace. In contrast, chronic PE has been shown to have a cumulative effect on the brain that is responsible for memory processing in general.

Studies demonstrate that PE leads to peripheral and central processes, inducing metabolic, structural, or functional changes in specific brain regions, related to declarative memory, such as the hippocampus and prefrontal cortex. PE promotes adult neurogenesis and prevents hippocampal shrinking. In addition, PE can modify synaptic plasticity and strengthen the functional connectivity of a hippocampal-cortical brain network. Animal studies show PE-induced upregulation of hippocampal BDNF mRNA expression. In humans, it has been demonstrated that PE elevates peripheral blood concentration of BDNF. BDNF is a trophic factor that plays an important role in synaptogenesis, neurogenesis, and cell survival and it can mediate PE effects. In addition, elevated VEGF might mediate exercise-induced angiogenesis in the hippocampus.

Keywords: Physical exercise, declarative memory, BDNF, neurogenesis, neuroplasticity

Introduction

Declarative memory is defined as a memory for events and facts, both personal and general, to which we have conscious access and which we can verbally report (Gazzaniga et al., 2018). The ability to form memory is essential for an organism to successfully adapt to changing environmental demands (Rasch & Born, 2013). The memory system of our brain retains information through three major processes – first, new experiences are encoded, after encoding, labile memories undergo consolidation, later on, when future experiences are associated with requiring this memory, the stored internal representations can be retrieved to guide behavior and update for generalization in novel situations (Tang & Jadhav, 2019). The consolidation process depends on interactions between circuits located in several brain areas - in particular, the hippocampus stands out as a crucial structure for the initial recoding and storage of labile memories involving synaptic plasticity. Gradually, the neocortex becomes involved in memory maintenance (Battaglia et al., 2011).

The aging process is associated with changes in the central nervous system (CNS), including a decrease in brain weight and volume, synaptic connection loss, and cell death (Dziechciaz & Filip, 2014). These changes interfere with the individual's cognitive capacity and memory (Ritchie et al., 2016). Intense research aims at identifying modifiable lifestyle factors that might help to promote healthy aging. Delaying and reducing the deleterious effects of changes that accompany the aging process is associated with healthy lifestyle habits, such as physical exercise (PE) (Clark et al., 2008).

Growing evidence indicates beneficial effects of PE on cognitive functions of older adults with and without cognitive impairment (law et al., 2014). There are different types of PE and they have beneficial effects on different aspects of memory. For example, resistance exercise is associated with improvements in working memory, immediate memory, and short-term memory (Wu et al., 2021), while existing data indicates the positive effects of aerobic, or cardiovascular exercise on long-term memory (Roig et al., 2013). Investigations exploring the effects of PE on memory have employed either acute or long-term, chronic interventions. Acute interventions produce a relatively large improvement in long-term memory; in contrast, long-term PE does not show any significant effect on long-term memory (Roig et al., 2013). Despite this, the practice of regular bouts of PE has a priming effect on the molecular mechanisms responsible for memory processing in general (Berchtold et al., 2005), thereby, optimizing the response to a single bout of acute PE and its effects on memory performance (Hopkins et al., 2012).

The effects of acute PE on memory are time-dependent

The timing of PE and memory stimulus plays a critical role in the PE-memory interaction. (Roig et al., 2013). According to a study of young adults, PE before exposure to memory tasks benefits long-term memory, but benefits are greatest when PE has performed before the encoding process and after the encoding process, during consolidation (Slutsky-Ganesh et al., 2020). Acute PE occurring after memory encoding, during early consolidation and late consolidation enhances declarative memory functions, while acute PE during memory encoding has a negative effect (Loprinzi et al., 2019). PE during encoding is likely redistributing cognitive resources away from encoding the stimuli to sustain the movement itself (Dietrich & Audiffren, 2011). Some attributes moderate the temporal effects of acute PE on declarative memory function. For example, acute PE occurring before memory encoding is advantageous for young adults but impairs memory function for older adults (Loprinzi et al., 2019). Regarding the early memory consolidation period, vigorous-intensity and long-duration acute PE are more positively associated with declarative memory function than light intensity or short-duration acute PE, while short-duration PE is most beneficial during late-phase memory consolidation. It is hypothesized that vigorous and long-duration PE is likely to have greater effects on the production of key factors that would subserve the late phase of long-term potentiation. (Loprinzi et al., 2019).

Underlying mechanisms of effects of PE on declarative memory

Declarative memory relies on the hippocampus for initial encoding and is often referred to as a hippocampus-dependent memory (Feld & Born, 2020). Information processing includes performant pathways – entorhinal cortex, dentate gyrus, CA3, and CA1 cells (Amaral & Witter, 1989). Aerobic PE is an effective method of inducing neuroplasticity at a molecular, cellular, and systemic level, but the mechanisms are not fully understood.

Acute PE can induce functional changes that affect performance. High-resolution fMRI analysis shows hippocampal-cortical network improvement after acute PE. The short bout of mild PE

increases activity specifically in hippocampal sub-regions and in the entorhinal and parahippocampal cortices but not in other regions. Based on context-dependent PPI analysis, acute PE increases the functional connectivity between the dentate gyrus, CA3, and associated memory cortices, such as parahippocampal, angular, and fusiform gyri during retrieval tasks, and these changes are associated with improved performance (Suwabe et al., 2018). An experimental study in both young and old humans showed that acute PE increased functional connectivity in declarative memory-related brain networks - the anteromedial hippocampus and medial prefrontal cortex. These results support the hypothesis that the mechanism instantiated by acute PE act to restore functional connections that decrease with normal aging (Weng et al., 2017).

Chronic PE is associated with structural changes in different brain regions, including the hippocampus and neocortex (El-Sayes et al., 2019). In rodents, both PE and environmental enrichment have been shown to upregulate birth and survival rates of adult-born neuronal and glial cells in the dentate gyrus of the hippocampus, as well as improve performance on hippocampal-dependent memory tasks (Creer et al., 2010). Increased dentate gyrus neuron production maintains spine and synapse density and prevents hippocampal shrinking in aging (Voss et al., 2019). In addition, adult-born granule cells in the dentate gyrus have enhanced excitability and lower thresholds to induce long-term potentiation (LTP) (Schmidt-Hieber et al., 2004). A study in young to middle-aged adults found that anterior hippocampal volume increases from 6 weeks of training, which is related to increased myelination and these changes were absent after a 6-week break from PE (Thomas et al., 2016), supporting the link between long-term PE and hippocampal adaptations. PE can affect other regions of the medial temporal lobe, like CA1 cells in the hippocampus and entorhinal cortex, which provides primary input to the hippocampus during memory encoding (Stranahan et al., 2007). Region-of-interest-based voxel-based morphometry analysis in human participants demonstrated that volume in the entorhinal cortex was positively associated with aerobic fitness and recognition memory performance. (Whiteman et al., 2014). Additionally, both the CA1 subfield of the hippocampus and entorhinal cortex layer III show increased dendritic spine density following two months of voluntary running (Stranahan et al., 2007). Acute PE induces rapid functional changes, which appear in similar systems that are enhanced structurally with chronic PE, suggesting mechanisms linking rapid and accumulated effects of PE on memory (Voss et al., 2019).

The next question is about the mediating factors that relate PE to functional and structural changes in the brain. One mechanism to account for the changes in brain plasticity is through the action of growth factors (Cotman et al., 2007). Brain-derived neurotrophic factor (BDNF) plays an important role in synaptic plasticity, neurite outgrowth, neurogenesis, and cell survival (Sleiman & Chao, 2015). It has been known that PE markedly enhances *Bdnf* gene expression in the brain in rodents (Soya et al., 2007; Gomez-Pinilla et al., 2002). In animal models, PE induces *Bdnf* mRNA expression in multiple brain regions, most prominently in the hippocampus (Cotman et al., 2007), specifically in the dentate gyrus and CA3 region (Cotman et al., 2007). In humans, BDNF cannot be measured noninvasively in the brain, but it can be measured in the blood. Long-term PE interventions indicate that serum and plasma BDNF levels increase following PE training (Leckie et al., 2014; Dinoff et al., 2016). It has been estimated that the brain contributes 70-80 % of circulating plasma BDNF in humans during PE (Rasmussen et al., 2009). BDNF production provides trophic support and increases neurogenesis, synaptogenesis, dendritic and axonal branching, and spine turnover. Blocking BDNF signaling attenuates the PE-induced improvement of spatial learning tasks, as well as the PE-induced expression of synaptic proteins (Vaynman et al., 2004).

There might be multiple factors regulating BDNF expression. One proposed mechanism is that PE may induce BDNF levels by altering the epigenetic landmarks of the *Bdnf* promoters (Koppel & Timmusk, 2013). It is conceivable that PE induces endogenous metabolic molecule, ketone body D-b-hydroxybutyrate (DBHB), which can serve as a metabolite as well as a regulator of *Bdnf* transcription (Sleiman et al., 2016). DBHB is an energy metabolite that is increased in the liver after prolonged PE, starvation, or the absence of dietary carbohydrates (Newman & Verdin, 2017). DBHB is transported in the bloodstream to the brain to serve both as an energy source and as a signaling molecule. In mice, DBHB acts as an inhibitor of class I histone deacetylases (HDACs) to activate the *Bdnf* gene promoters in the brain and enhance brain production of BDNF (Sleiman et al., 2016).

BDNF exerts its cellular effect through the action of tropomyosin-related kinase B (TrkB) receptor. It acts as a local factor, paracrine and autocrine, on both presynaptic and postsynaptic target sites (Sasi et al., 2017). The signaling cascade includes CREB protein phosphorylation, which leads to gene transcription, translation, and protein synthesis. BDNF cascade induces the release of calcium ions from the intracellular calcium store, which leads to the activation of CaMKII, a master regulator of synaptic plasticity. In addition, through the TrkB receptor, BDNF can activate Rac1, which is a signaling protein that promotes spine growth and maturation by regulating actin dynamics (Sasi et al., 2017).

Another growth factor, mediating PE-induced improvement in learning and memory, might be the vascular endothelial growth factor (VEGF). VEGF is a hypoxia-inducible protein, which is primarily produced in the muscles and can cross the blood-brain barrier (Karakilic et al., 2021). Chronic aerobic PE increases VEGF levels in type I and type II muscle fibers (Karakilic et al., 2021). According to an animal study, after PE, VEGF is specifically increased in the hippocampus inside the brain (Tang et al., 2010). VEGF promotes the formation and growth of blood vessels and can induce hippocampal angiogenesis through receptor tyrosine kinase on endothelial cells (Krum et al., 2002). The formation and growth of blood vessels in the hippocampus are positively correlated with hippocampal learning and memory (During & Cao, 2006). In an animal study, experiments revealed the importance of vascular plasticity for spatial learning and memory, and inhibition of vascular plasticity retarded visual-spatial task acquisition (Kerr et al., 2010). These results are indicators of the importance of metabolic supply through blood vessels for learning and memory.

PE can induce molecular, cellular, and structural changes, which are likely driven by improved cerebrovascular function. These changes lead to alterations in neural activity and communication. More studies are needed to identify central and peripheral factors mediating the positive effects of PE on memory; it may allow us to understand underlying mechanisms more accurately to create methods for benefit enhancement.

Conclusion

Acute and long-term aerobic PE interventions show differential effects on memory. Acute PE produces moderate to large effects on declarative long-term memory whereas long-term PE has a priming effect and optimizes the response to a single bout of acute PE and its effects on memory performance, leading that both interventions represent two distinct but complementary strategies to improve memory. Acute PE improves memory in a time-dependent fashion by priming the molecular mechanisms involved in encoding and consolidating newly acquired information. When PE occurs before memory encoding or during early and late memory consolidation, memory enhancement effects are likely observed. Various study design and participant characteristics are likely to moderate

the effects of PE on declarative memory function, for example, PE among young adults are likely to have greater effects when the bout of exercise occurs before memory encoding or during the early memory consolidation period.

It has been shown that PE can lead to functional and structural changes in different brain regions, such as the hippocampus and brain circuits responsible for memory processing. There are multiple hypotheses about the underlying mechanisms of PE effects on memory; possible mediators might be growth factors and neurotrophins, such as VEGF and BDNF, responsible for angiogenesis, neurogenesis, synaptogenesis, and cell survival.

It is important to note that very little is known about the molecular mechanisms that link PE to the improvement of cognitive functioning and memory. Further studies aiming at identifying molecules that can serve as mediators will help to improve PE interventions in various cases, such as age-related cognitive decreases and neurodegenerative diseases.

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Resilience through "Kin": Paranoid Schizophrenia

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ABSTRACT:

Background: Paranoid Schizophrenia is a chronic mental illness nearly affecting 20 million people globally, it is characterized by change in cognition, emotion and action, having multiple genetic and environmental causes and their interaction to neural pathway leading to illness. Suicide drive is most serious of all schizophrenia symptoms. Coping and adaptation are key concepts for caregivers of patients with prolonged mental illness. Despite of family support evidence during recovery of illness, stigma against mental illness among family and society still exist.

Objectives: (1) To conduct case studies of patients suffering from paranoid schizophrenia. (2) To ascertain the role of family assistance throughout the course of disease and during recovery. (3) To promote positivity and acceptance of mental illness by family/community.

Study Selection: Based on inclusion and exclusion criteria 5 patients were selected.

Data Retrieval: Data was collected through in-depth online interviews with the patients and from the medical records obtained from the consultant psychiatrist and Evidence Based Practice Centre.

Results of Data Synthesis and Conclusions: Through the conducted case studies, it was seen that the patients with strong family support had an advantage throughout their recovery process, as it made remission simpler, less painful and more peaceful. This study suggests that patients suffering from chronic mental illness need strong support by the family and community for resilience.

Keywords: Paranoid, schizophrenia, mental illness, caregiver, resilience.

Introduction:

The rise in mental disorder among 21 regions of global burden disease is more than 10% in prevalence; in this category schizophrenia is among the mental disorder having the highest change in number of years lived with disability from 1990 to 2007 constituting of 38.6%, followed by the change 13.5% in year 2007 to 2017[1] it is not as common disorder as compared to other mental disorder but it effects nearly 20 million people globally and it increases risk of mortality earlier in patient suffering from schizophrenia compared to general population. [1,2]

Schizophrenia is a mental disorder characterized by changes in cognition, emotion and behavior [3], having multiple genetic and environmental causes and their interaction to neural pathway leads to multiple symptoms which are categorized under 3 domains namely positive, negative and cognitive symptoms [4]. Diagnosis of Schizophrenia under ICD11 differs from DSM V since ICD categorize schizophrenia under paranoid, hebephrenic, catatonic, residual and undifferentiated schizophrenia. Paranoid Schizophrenia is the most common subtype of schizophrenia, characterized by mostly positive symptoms having delusion of persecution being the most common. It is distinguished from delusional disorder on the basis of their paranoid delusions, such as the belief that their thoughts or actions are being controlled by external forces, and by the presence of hallucinations (e.g., hearing

voices) and other indications of a serious break with reality [5,6]. History plays a crucial role in evaluating the patient and examination by assessment through scales (PANSS, SAPS, SANS) used for positive and negative symptoms. [7] The treatment is divided into 2 categories namely pharmacotherapy (mainstay of treatment) and psychosocial therapy (includes family psycho education, supported employment, social skills training, training in illness management skills, cognitive behavior therapy for psychosis, integrated treatment for substance abuse) [3].

Eugene Bleuler characterized "the suicide drive" as the "most serious of all schizophrenia symptoms". Studies indicated that rate of suicide among schizophrenia is about 10%, reported rates with attempt of suicide vary between 18% - 55% in schizophrenia. [8] Early recognition of people who are at risk for suicide and careful management of psychotic symptoms can prevent the increased incidence of suicide among schizophrenia. The aim of this study is to conduct case studies of patient with paranoid schizophrenia and to determine the role of family assistance throughout the course of disease and recovery. This study also emphasizes on the importance of acceptance of mental illness by family and community.

Methodology:

The study used an explorative qualitative approach. The goal was to recruit at least 7 participants, but this was not achievable due to variety of reasons including patients' unwillingness to participate in this study, so 2 patients were excluded. In total 5 patients were approached for an online interview, the data was retrieved through in-depth interviews (Case1,2,3) and consent for history was gained. For Case 4 (twins), due to instability of their mental status it was not feasible to conduct interview, therefore consent for their history was gained from Evidence Based Practice Center (Community Center), Tbilisi.

The selection criterion for patients was as following:

- *Inclusion criteria:*
  1. Patients exclusively diagnosed with schizophrenia.
  2. Patients who have received treatment.
  3. Patients with and without strong family/community support.
- *Exclusion Criteria:*
  1. Patients with history of Substance abuse.
  2. Patients diagnosed with other chronic illness.
  3. Patients with Genetic Predisposition.

The interview was held in English language under supervision of the consultant psychiatrist on the Zoom platform, which lasted for 1 hour 10 minutes for case 1, 52 & 53 minutes for case 2 and case 3 respectively. Data collection was guided by open questions like: *How did the family react to your symptoms? Were the family members supportive? How would to rate the support received on the scale of 1-10? What kind of acceptance was shown by family members in public places or gatherings?* It was ensured that there was no one else from the family in the room during interview, to avoid any sort of family pressure and specific questions were asked according to their responses to gather further information. Nonverbal responses during the interview were also observed and noted. The measurement of symptoms according to PANS and SANS scale were already performed by consultant psychiatrist at time of diagnosis hence it was not part of interview. Further details about diagnosis and treatment were provided by the consultant psychiatrist. The case history of patients is as following:

Case 1: A 42-year female, works now as a translator. Family: Parents were divorced, Mother died

10 years ago and father is also deceased (Date of death unknown). No contact with relatives, currently single with 1 relationship in the past. No history of substance abuse. She did not have many friends since her childhood, her mother was her close confidant. Her school life was normal except that she was not a very social personality. She had joined University but could not graduate because at age of 22, she started to experience symptoms of psychosis like auditory hallucinations, delusions of persecution, following which she was brought by her mother to the Community Center. She had expressed her clear refusal towards treatment. She was into a relationship following which she experienced erotomaniac delusion (that her lover will be proposing to her in upcoming days). She was experiencing these symptoms for couple of years. She had attempted suicide for the first time in 2013. "She tried to jump from a bridge assuming there was a river below but landed on earth", she sustained injuries after this incident. Few years later, her mother passed away. Her symptoms started to worsen. She had a dream of her mother, following which she had an auditory hallucination that her mother's voice was commenting on her actions. She also believed she had the ability of future/fortune prediction. Her last suicide attempt was 4 years ago (2017). After which she expressed her willingness to sign up for Community service and she started receiving treatment with Antipsychotic-Olanzapine. Till date, she is receiving treatment and lives alone at Community Center.

Case 2: A 36-year male, now working as an assistant. Family: Parents are divorced, one brother. Currently lives with mother and brother, father pays visit sometimes. He completed his university graduation from United Kingdom, following which he was working in an office job. He was stressful at work, started to become anxious. His symptoms started at the age of 25. According to his statement, he experienced low mood, frequent crying and preferred to stay in darkness for months. He also left his previous job. His mother brought him to the psychiatrist. Initially, he denied any psychotic symptoms. He was diagnosed with depression but later the diagnosis was changed to paranoid schizophrenia as his symptoms worsened with antidepressants. He later accepted that he was also hearing demotivational, commanding voices. He was started on Antipsychotic- Risperidone. After pharmacotherapy, he was into complete remission and now lives his life normally.

Case 3: A 42 years' male, Family: Mother, sister and brother (both healthy and married), deceased father. The patient had finished the school normally and joined University, he had completed graduation but was unemployed. He loved playing guitar. His symptoms started at the age of 25, which included auditory hallucinations, delusional ideas of reference as well as persecutory delusions. He was diagnosed with Paranoid Schizophrenia according to diagnostic criteria, following which he was hospitalized many times in future. After discharging, he always refused to ambulatory admission and to take medications. He had decided to live alone and he did not contact family members. According to his delusions and hallucinations, he considered that his neighbors were his enemy and had constant conflicts with them, which ended up him being hospitalized. 3 years ago, at the clinic, he was suggested to be enrolled in Evidence Based Practice Centre by the consultant psychiatrist. The consultant psychiatrist convinced the family members that he had to live with a caregiver, following that, his mother moved in with him. Since then, he is being injected with Antipsychotic- Risperidone once a month and takes sleeping pills. He did not have any exacerbation after that, and still lives with mother (preferably). They go everywhere together and his mom calls the consultant psychiatrist anytime she notices something odd.

Case 4: 38-year-old male twins. Parents are deceased more than 15 years ago. They did not have communication with any of their relatives. Both of them experienced a normal childhood and schooling, following which they graduated from school. They tried to continue study at the University

(psychological faculty) but they could not graduate because of the mental disturbances experienced at the age of 22. Symptoms were auditory hallucinations, delusional ideas of reference, persecution, illogicality. They were hospitalized in separate clinics so shared psychosis was excluded. In initial months of observation, the diagnosis of brief psychotic disorder was made, which later on changed to Paranoid Schizophrenia. After their parents' death, they refused ambulatory treatment and were many times hospitalized. About 2 years ago, before discharging, their doctor-psychiatrists contacted the Assertive Community treatment center and patients agreed to Community service center's clients. For 1.5 years, psychiatrists were able to manage their condition, they were injected with antipsychotic- Zuclopenthixol, once every two weeks, and were in remission phase. But then later they began drinking alcohol, and they had nobody at home to warn the consultant psychiatrist in time and in few days they rejected the service from community center. Later, they were hospitalized at long term mental health hospital since their neighbors ended up calling emergency helpline number 112 because of the vigorous exacerbation of their symptoms.

The **key findings** during the interview were:

Case 1: She mentioned that it was her breaking point when the mother died since her mother was the person who brought her to the Psychiatrist. She also mentioned that till date she misses her mother and quoted "like a decayed leaf life appears to be, without family; and family is the tree which holds on every leaf".

Case 2: He mentioned that his mother was very approachable and supportive towards him during his difficult times. He also stated that his family's insistence and assistance helped him to accept his condition and seek medical assistance. He added that not only his family, but also his friends were coordinating him and looking after him.

Case 3: He mentioned that his mother was his constant support throughout. Though society had been pointing fingers at them due to the prevailing stigma, his mother never left his side. He felt comparatively better than what he felt when he was living alone and that his urge to get better and seek treatment was sustainable for a long time. He also stated that since his mother started to live with him, he was regular on treatment and follow-ups.

On comparing patients not having family support to those who have one, it was found that the course of disease and recovery process was difficult to walkthrough and mentally painfully for the patient without family support. Also the urge to seek treatment and achieve remission was not sustainable for a long time leading to self-harming activities. It was also noted that constant support and encouragement from family members proved beneficial to the psychosocial reintegration of patients having family support. Contrastingly, it was a big setback to those patients who didn't have support.

Discussion:

Of the 4 case studies conducted, Patients of Case 2 and Case 3 had strong family support, this proves to be an advantage for them throughout their recovery process. The Assistance of family made the path towards remission simpler, less painful and more peaceful. Meanwhile for case 1, symptoms worsen after loss of family member and in case 4, patients progress went in negative direction, they even rejected treatment and were more focused on substance abuse since there was no one at home to look after them. When caring for a patient with a prolonged mental illness, one of the most crucial factors to consider is coping as well as adaptation, and the most commonly mentioned coping mechanisms are Belief and Acceptance [9]. A study demonstrated that even though family members

went through series of ups and down being with mentally ill patient but family developed acceptance, adaptation and advocacy skills. The advocacy by the family members of their relatives who are in interaction with mental health system, can be used in reducing stigma and discrimination through normalizing mental illness and engaging in social and political advocacy activities [10]. The Caregivers/ Close Family have learned to accept and reconcile the mentally ill patients' impairment or bizarre behavior in order to avoid disappointment and discontent. Other coping methods highlighted by patients, vital for tough situations were empathy, patience, and awareness of the problem. According to research findings in the United States (US), families have a significant role in assisting relatives with mental illness [11].

Chinese studies demonstrated that family negative and emotional interaction have role in quality of life among person suffering from mental illness, the results demonstrated that negative interaction has stronger impact than emotional support [12] and therefore it is important to increase quality of life among patients of mental illness by promoting emotional support and decreasing negative interaction. Study from Tshwane, South Africa indicated that young adults suffering from mental illness were more resistance to stress and were more resilience to illness through support of family and friends, meanwhile patients who had less supportive family are more vulnerable to stress and challenging situations, with lowered self-esteem. [13]

This study suggests that a strong social support is essential for the recovery of mentally ill patients. Findings from India back up this viewpoint, revealing a number of causes and challenges that are faced by patients receiving residential care [14]. Any mental disease in a family member which requires care and support at home causes psychological and emotional hardships for the entire family [15]. Therefore, according to the conceptual approach to family care-giving, attitudes and ties can be crucial in determining care giving issues. [16] It's also important to make a distinction between the provision of social assistance programs and their apparent use to help families operate better.

Limitations & Implications: There are several constraints to this study. To begin with, the sample was too small, which could have had an impact on a regular interview encounter, resulting in restricted information. Lastly, findings cannot be generalized to a community-based sample. Replicating the study with more participants, categorizing into groups based on age, profession, gender, and educational background will be beneficial in further understanding the phenomena and laying the foundation for future clinical research.

Conclusion:

This study is based on the comparative case analyses, it suggests that a conscientious, genuine and strong family/social support plays a very vital role in the recovery of patients with chronic mental illness like paranoid schizophrenia. Family care does have an utmost role during recovery of mental illness, but it also comes with a lot of challenges for both family and mental health specialists in terms of social and psychosocial aspects. In order to fulfill the requirements of the caregiver and the family as a whole, a coordinated strategy between health care providers and the government is required. This study also promotes acceptance of mental illness and positive approach towards patients suffering from chronic mental illness.

Ethical Approval, Consent for Participation and Publication:

The Evidence Based Practice Center, Tbilisi provided ethical clearance, additional permissions,

and approval. The participants were thoroughly apprised about the nature/purpose of study and data gathering technique before the interview began. The participants were told that the study's findings would be published in various journals, but their identities will remain confidential. The consent form was signed by all of the participants interviewed

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Dissociative Experiences and Post Trauma Stress Disorder in Sexually Assaulted Individuals

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ABSTRACT

Sexual assault is one of the most prevalent issues that considerably affect the mental as well as reproductive health of an individual but most of the cases are never reported and major mental health interventions are never considered. Despite several reforms, most of the victims do not seek help and it consecutively impacts their mental and general well-being negatively. This study analyzed the after-effect following sexual assault, how dissociative experiences are related with PTSD in these individuals and if victims incorporated coping mechanisms and interventions for mental health. A systematic search was conducted which included reviewing relevant studies through already existing databases. Database search included PubMed, ScienceDirect and psychological bulletin. Search terms included: sexual assault, PTSD, dissociative experiences, mental health interventions, etc. DESII was used for assessing dissociative experiences and a well-designed survey was also completed for reviewing sexual misconduct and assault among 60 participants. The sample consisted of 60 people of aged 17 or older. Personal interviews were conducted to get a better insight of the experiences of several women. Over 40% of respondents reported that they have been assaulted at least once in their life and 62.90% knows someone who has been assaulted which suggests that sexual misconduct is rather common in all age groups. Moreover, the mean DES score was calculated as 30.03. The results prompt us to think that there is a correlation between dissociation and assault cases.

Keywords: Sexual assault; Mental health; Post trauma stress disorder; Interventions; dissociative experience

1.Introduction

Sexual Assault (SA) can be stated as any forced, or unwanted sexual contact involving non-consensual sexual or sexualized behavior that encompasses attempted or complete bodily contact, either penetrative or nonpenetrative. It also involves intimate partner violence, drug-facilitated sexual assault, and sexual exploitation of any sort (Dworkin et al., 2019, Gottfried et al., 2015). Essentially all sexual assault survivors experience negative psychological symptoms right after the assault, with some continuing to experience these symptoms for lifetime (Dancu et al., 1996, Kimerling and Calhoun, 1994). Exposure to sexual assault can affect mental health in the short- and long-term, from which the long-term consequences, like posttraumatic stress disorder (PTSD), are the most studied and researched (Breiding et al., 2014; Jina and Thomas, 2013). Out of all the traumatic experiences, sexual assault and other forms of interpersonal violence hold the greatest potential to evolve into PTSD (Kessler et al., 2014). The level of outcome severity of sexual assault is dependent on the circumstances of the sexual abuse. Child sexual abuse, more sexually charged violent assaults, and complete intercourse are consistently linked with experiencing severe PTSD symptoms (Ullman and Filipas, 2001, Ullman et al., 2007). PTSD is not the only diagnosis seen in case of sexual assault victims; they also report high rates of substance abuse, MDD, and various other anxiety disorders

(Bryant et al., 2015; Möller et al., 2014). A review of studies of adult sexual assault survivors found that between 17% and 65% exhibited symptoms of PTSD, 13% to 51% met the diagnostic criteria for depression, 13% to 49% demonstrated signs of alcohol dependence, and 28% to 61% reported illicit drug use (Campbell, Dworkin, & Cabral, 2009). Furthermore, sexual assault survivors consistently exhibit high prevalence of suicidal ideation and attempts (Chan, Straus, Brownridge, Tiwari, & Leung, 2008). Abundant studies have found substantial support and evidences for the development of dissociative symptomatology as a consequence of traumatic experiences (Gershuny & Thayer, 1999). In addition, a meta-analytic study highlighted that peri-traumatic dissociation was the strongest predictor of PTSD from a vast number of alternative known risk factors (Ozer, Best, Lipsey, & Weiss, 2003).

Dissociation can be understood as "an experienced loss of information or control over mental processes that, under normal circumstances, are available to conscious awareness, self-attribution, or control, in relation to the individual's age and cognitive development" (Cardena & Carlson, 2011, p. 251). It is plausible that dissociative symptoms succeed traumatic experiences which leave an indelible mark on a person's life especially if they never process it and seek help. These dissociative symptoms and the feeling of not being connected with one's body, emotions and the surrounding world could be possible experience following a sexual assault.

Various early studies have explored the relationship between dissociative experiences and PTSD using different methods such as signal taxometric analysis, and the investigation of the distribution of scores and these studies have provided support for the subtype model and thus the notion that a subset of individuals with PTSD also report dissociative experiences (Ginzburg et al., 2006, Putnam et al., 1996, Waelde et al., 2005). Steuwe and colleagues (Steuwe et al., 2012) reported that individuals in their dissociative-PTSD group reported higher scores related to physical and sexual abuse, and a higher number of current diagnoses, compared to the high PTSD only group.

Previous research hence suggests that sexual traumas might play a central role in the development of the dissociative subtype of PTSD rather than a more 'pure' form of PTSD (i.e., in the absence of dissociative experiences) (Armour et al., in press, Ginzburg et al., 2006,). Development of dissociative symptoms in sexually assaulted individuals can be understood given that the bodily integrity and emotional stability of the person is compromised by the perpetrator. In the wake of a traumatic experience, it is sensible to believe that acknowledgment and realization of the experience would pave a way for the individuals to integrate that information because "self" seeks meaning of every experience, but one loses this sense of self and is dissociated from their body, mind as well as the traumatic experience and suppress the emotions following such experience, integration would be impaired which causes fragmentation of self and reality.

2. Research Objective

The aim of this research was to understand dissociative patterns and mental health outcomes especially PTSD in individuals who have experienced sexual misconduct and assault and establishing the validity and consistency of Dissociative experience scale in such victims.

3. Methods

A systematic search was conducted which included reviewing relevant studies through already existing databases. Database search included PubMed, ScienceDirect and psychological bulletin. Search terms included: sexual assault, PTSD, dissociative experiences, mental health interventions,

etc. DESII was used for assessing dissociative experiences and a well-designed survey was also completed for reviewing sexual misconduct and assault among 60 participants. The sample consisted of 60 people of aged 17 or older. Personal interviews were conducted to get a better insight of the experiences of several women.

3.1 Measures:

3.1.1 Dissociative experience scale II

The standard questionnaire is a self-assessment tool which is useful in determining the need of clinical evaluation of certain dissociative disorders and in this case PTSD because such individuals score higher on it. This scale comprises 28 items, and score ranges from 0 to100.

3.1.2 Sexual misconduct and assault survey

A well-designed survey that aimed at finding out the prevalence of sexual misconduct and assault in young people and to assess the associated experiences such as reporting to the police, mental health interventions taken, self-defense etc.

4. Results

Sample Description

The mean age of the 62 subjects was 20.6 years (mostly lying in the range of 17-25). 69.35% of participants identified as female and remaining identified as male. Over 50% were undergraduates and over 16% were postgraduates while the rest were high school graduate or undefined. More than 96% of participants were Indian.

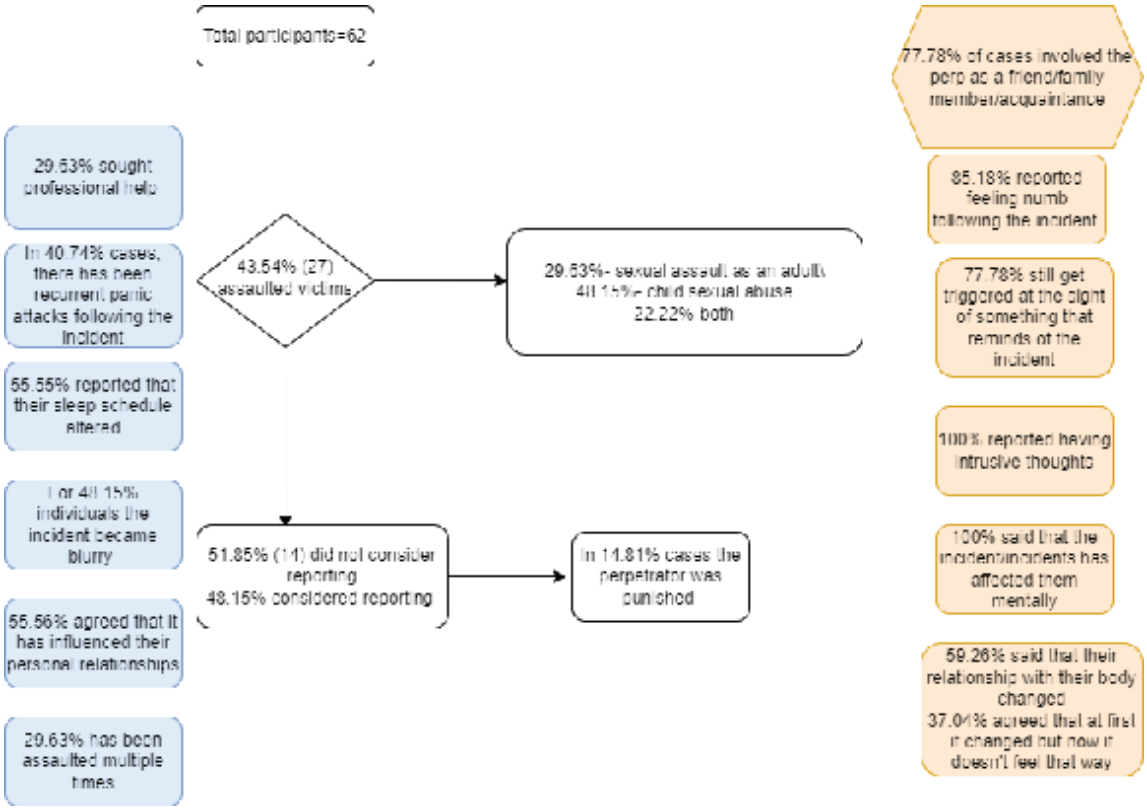

Figure 1: Sexual misconduct and assault survey results

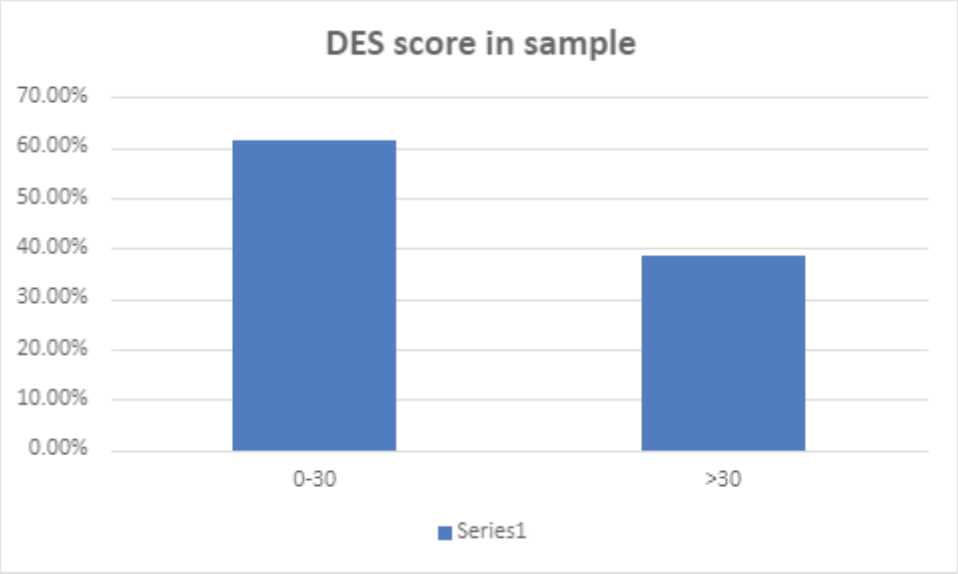

Figure 2: DES score of the participants (Note: Below 30 is considered a low score)

38 participants scored from 0-30 whereas 24 participants had a score higher than 30, out of which 7 participants scored higher than 50. These results are consistent with our theory that sexual trauma may be related with higher level of dissociation and consequent negative mental health impacts.

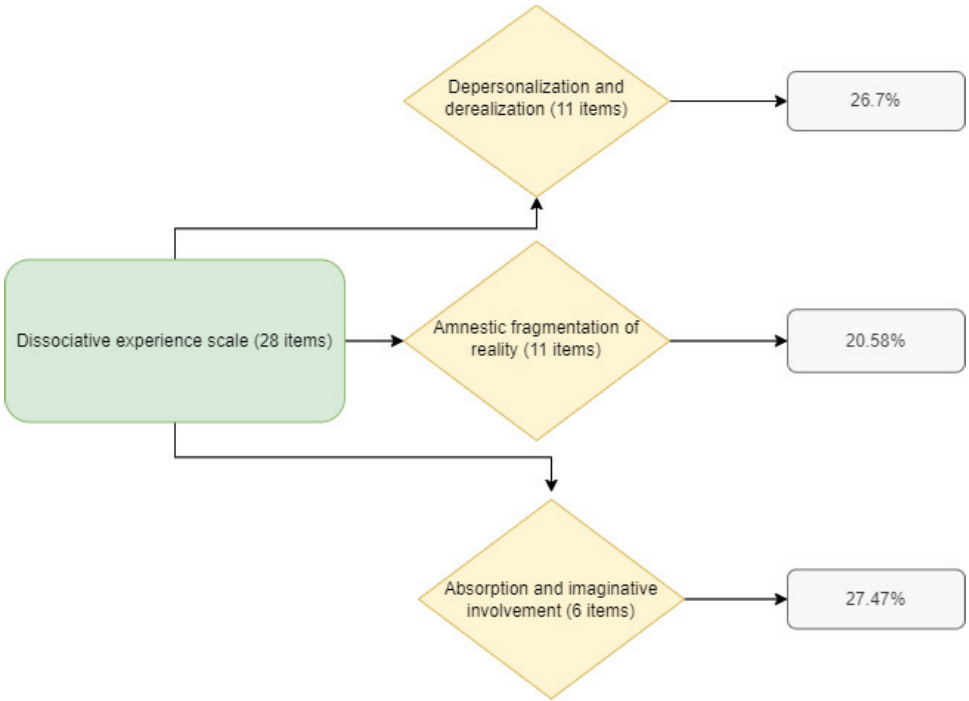

Figure 3: DES analysis (Note: The percentage is the average percentage on a scale of 1-100% and each factor includes different number of items)

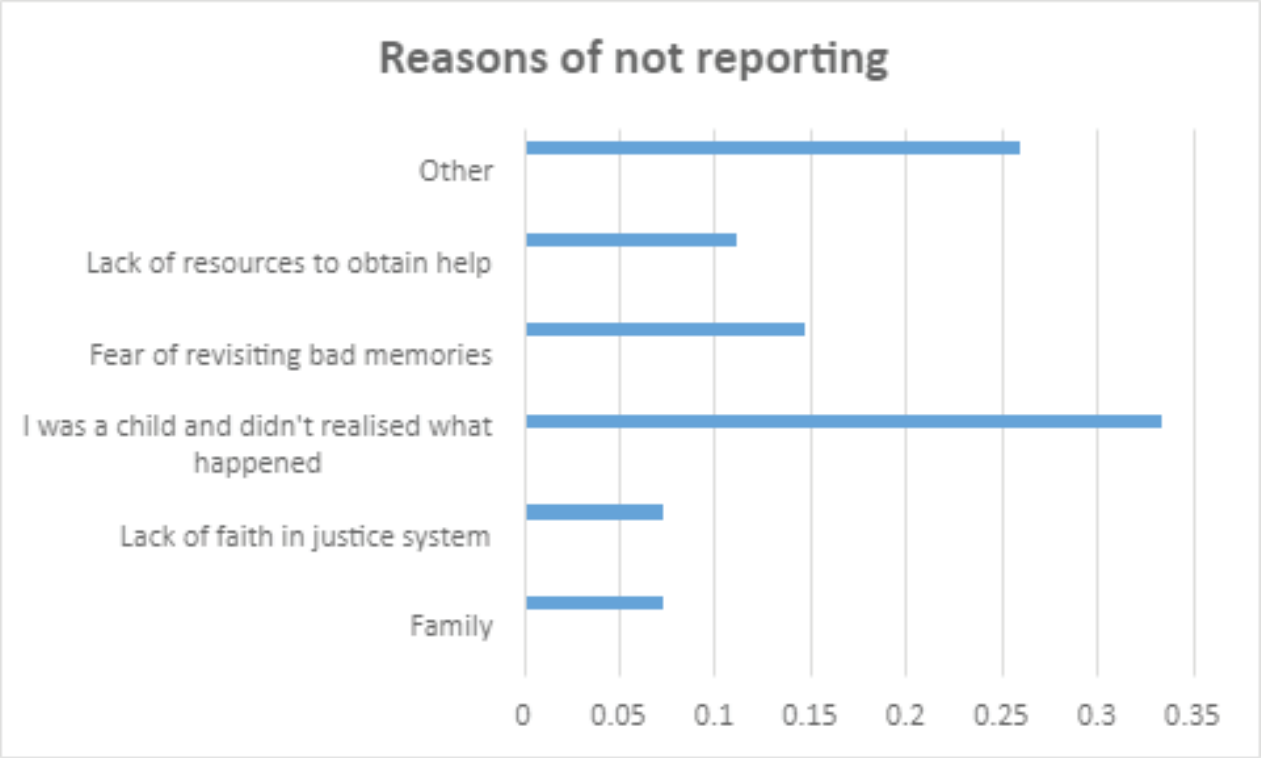

Figure 4: Reasons of not reporting assault

5. Discussion

One crucial aspect of this study is the population chosen which almost comprised people of similar ethnicity and whether it interferes with generalization. Although some studies have reported that not significant differences are found in relation to demographics and cultural aspects when it comes to sexual assault and it's association with PTSD. The results suggests that there is a linkage between dissociative experiences and sexual assault cases. Furthermore, it is also likely that a person who scores high on DES scale may have PTSD or other psychotraumatic disorders. The mean DES score was calculated as 30.03 which is rather high. These results are consistent with other studies which reported median score around 30 in traumatized population. 38.71% of the participants scored above 30 while it was observed that 43.54% of total participants have been sexually assaulted at least once in their life, such figures establish a linkage between dissociative experiences and sexual assault. Also, according to previous studies, average DES score in PTSD was found to be 31, 14.52% of total participants had an average score near to this criterion.

The structure of DES allowed to assess 3 major factors: depersonalization and derealization, absorption and imaginative involvement, and amnestic fragmentation of identity.

6. Limitations

1. It cannot be said for certain if sexual assault is etiological in the high DES score reported in the sample or there is any other reason or predisposing factor.
2. Other specific categories of dissociative disorders are not reported besides PTSD.
3. There is only a restricted range of dissociative symptoms and indicators.
4. The sample doesn't cover the entire spectrum of dissociation and trauma
5. The participants are of similar ethnicity so it interferes with generalization.

7. Conclusion

A large number of people do not honestly talk about their experiences even if asked anonymously but the fact that over 40% of respondents reported that they have been assaulted at least once in their life and 62.90% knows someone who has been assaulted which suggests that sexual misconduct is rather common in all age groups. Moreover, an overwhelming number of participants have a considerably high score on DES scale. The results prompt us to think that there is a correlation between dissociation and assault cases. Only few of the victims seek professional help when dealing with the aftermaths of such horrendous acts and there is an increasing need to develop strategies that makes it easier to ask for help.

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Ensuring Dissimilarities between Sluggish Cognitive Tempo and ADHD

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ABSTRACT

Attention deficit hyperactivity disorder (ADHD) is a neurological condition that leads to Impulsive behaviour and unusual levels of hyperactivity. Sluggish cognitive tempo (SCT) is not regarded as an official medical diagnosis for ADHD and is regarded as different from ADHD. But both conditions share something in common despite SCT patients are less likely to have hyperactivity or impulsive behaviour. Patients with ADHD are more prone to bipolar disorder enduring dysmorphic and eumorphic mood, suicide-related issues and exaggerated apprehensions. Less than 50% of patients diagnosed with SCT have attention deficit disorder while others discover the condition is SCT and not ADHD in the course of ADHD treatment. SCT is more likely to be connected to symptoms of sadness and anxiety. Symptoms of SCT precisely include daydreaming, trouble staying alert, and presence of easy confusion also lethargy. Further SCT is even linked to depression, about 30% of the data were positive about depression can be among differentiating symptoms between SCT and ADHD. Moreover, poor parenting shows a close relation in patient with SCT. Presented qualitative research aimed to observe and differentiate between SCT and ADHD and also to identify SCT as an individual condition. The findings showed that SCT symptoms are more likely to be associated with low socioeconomic status, whereas ADHD is confined to the difference among age and sex. More than 25% of the data shown by the study indicated that SCT patients have unfriendly environments, hence caregiver behaviour also plays an important role among SCT patients. While this study showed that SCT patients are more involved in daydreaming and anxiety ADHD patients have symptoms which are impulsive and exaggerated when compared to SCT. The results also indicates that to have a better and to narrow down the differences between ADHD and SCT further more study and experiments are needed.

Keywords: Attention Deficit and Hyperactivity Disorder, Sluggish and Cognitive Tempo, Sluggish Behaviour, Hyperimpulsive, Depression

Introduction:

ADHD is characterized by a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development. There are three subtypes of attention deficit hyperactivity disorder (ADHD):

- The type that is predominantly inattentive
- The predominantly hyperactive-impulsive type
- The hybrid kind

Some people with predominately inattentive ADHD also exhibit a subset of symptoms characterized by sluggish-lethargic behaviour and mental fogginess. This subset of characteristics has been referred to as “sluggish cognitive tempo” (or SCT). People with SCT have trouble concentrating and paying attention, but they are less likely to be impulsive or hyperactive. Children with ADHD frequently have SCT, but SCT can occur even if you do not have ADHD. (Lisa A. Jacobson, Megan

Geist, et al, 2019)

SCT symptoms include:

- Drowsiness
- Daydreaming frequently
- Mental fogginess as a result of frequent staring into space
- Memory retrieval is poor.
- Lethargic and sluggish behaviour
- Slow information processing social passivity, reticence, and withdrawal
- The proclivity to become easily perplexed (American Psychiatric Association, 1980)

Talking about the future aspects of this research, it will answer about the relationship and difference between ADHD and SCT.

Sluggish Cognitive Tempo (SCT) **And Attention-Deficit/Hyperactivity Disorder (ADHD):**

A dense study by Stephen P Becker and Joshua M Langberg have evident facts about SCT have been prevalent differently compared to ADHD. The Stephen, Joshua et. all 2013 already suggested that:

- SCT was found to be markedly different from ADHD in preadolescence, with SCT being strongly associated to university student adjustment and giving evidence for the theory that SCT is related with psychological adjustment in both individual people with and without ADHD.

Mentioning about self-reported executive functioning (EF) both ADHD and SCT function differently. Precisely ADHD inattentive and SCT symptoms were both strongly predictive of self-reported EF, with inattention being the best determinant of Time Management and Performance and SCT being the most accurate indicator of Self-Organization/Problem Solving. Emotion Regulation was linked to SCT (but not inattention). There were no correlations found respectively self-reported symptoms and performance. The results of between-group evaluations were largely in line with those of regression analyses. (Matthew, Hannah et. all, Dec 2013)

When assessed retrospectively, the available literature suggests that the onset of conscience SCT symptoms commonly occurs prior to adulthood, and that older individuals may report an increased incidence than non-ADHD peers. SCT is just not a standardized diagnostic entity, though it is being recognized. (Becker and Barkley, 2017). SCT's distinguishing characteristics, including whether it requires an adolescence age of onset, similar to ADHD, and the clinical consequences of such a criterion, will need to be acknowledged. According to the findings, the majority of people experience symptoms during their childhood or adolescence. Given that SCT has been originally conceived as being related to ADHD in that both incorporate attentional aspects, studies suggest that future analyses regard age of onset in SCT sample analyses to apprise this issue and the effectiveness of this as a diagnostic method. (John, Naomi et. all, 2020)

The *Diagnostic and Statistical Manual of Mental Disorders* (DSM) and SCT:

The Diagnostic and Statistical Manual of Mental Disorders (DSM), published by the American Psychiatric Association is the standard manual for assessment and diagnosis of mental disorders used by mental health professionals in the United States. In the third edition of the DSM, published in 1980, symptoms of a sluggish cognitive style were first linked to ADHD. The DSM-III introduced the term "attention deficit disorder" (ADD) and significantly expanded understanding of the disorder by recognizing that attention deficits can occur independently of impulsivity and hyperactivity. (American Psychiatric Association, 1980)

Symptomatic Difference Between SCT And ADHD:

Currently the ADHD is diagnosed on the basis of the following given bullet points:

- Frequently fails to pay close attention to details or makes careless mistakes at work, school, or in other activities
- Frequently struggles to maintain focus on tasks or activities.
- When spoken to directly, he frequently does not appear to listen.
- Frequently fails to follow instructions; begins tasks but quickly loses focus and is easily distracted; fails to complete schoolwork, household chores, or workplace tasks
- Frequently struggles with task and activity organization
- Frequently avoids, dislikes, or is hesitant to engage in tasks requiring sustained mental effort.
- Frequently misplaces items required for tasks and activities (such as school assignments, pencils, books, keys, wallet, glasses, paperwork, etc.)
- Is easily distracted by external stimuli.
- Is frequently forgetful in daily activities, chores, and so on.

However, children and adults with the sluggish cognitive tempo (SCT) constellation of symptoms demonstrate a diverse range of inattention that is more day dreamy, hypoactive, and passive, instead of distractible. Individuals with SCT have fewer overt, externalizing symptoms of anxiety, depression, social withdrawal, and information-processing deficits and more internalizing symptoms. (Anastopoulos and Terri L. Shelton, et al, 2001)

Objective:

To understand and investigate the awareness about Sluggish Cognitive Tempo differentiate it from Attention–Deficit/Hyperactivity Disorder.

Research Question:

Through this study, we are trying to establish the basic difference between SCT and ADHD. What are different signs and symptoms related particularly to SCT which are different from ADHD? Also, does the genetic pattern which follows in ADHD have a similar fashion in SCT?

Methodology:

This survey targets final year psychology students who have the foundation of characteristics of ADHD and SCT. The survey forms will be distributed via mail and response will be recorded by the same method. As the only selective group of the target population is there, we have planned to use the email method which is an online tool for the study as it will help to have a record of the responses most accurately. The email was sent on the 13th of January 2022 and till the 24th of January responses were collected. In this qualitative research on sluggish cognitive tempo (SCT) related to ADHD we are trying to highlight the facts and the symptoms which differentiate SCT to ADHD through a set of 10 questions which are asked in form of an online questionnaire to students of psychology. Questionnaire (American Psychiatric Association, 1980) had an inquiry about genetic background information and about how ADHD patients tend to have inclined symptoms of SCT. Also, it had questions about different aspects and symptoms of SCT which are different from ADHD. The questions very separately ask about how depression, daydreaming, and others have been seen more in SCT patients and not in ADHD patients. One of the questions enquires about the involvement of caregivers in the SCT patient environment and how modern lifestyles have affected SCT's overall prognosis. The last question was about the influx of SCT patients with respect to ADHD patients.

Overall questionnaire tried to focus on factors such as anxiety, depression, daydreaming, slow response, also relation with ADHD which has a better prognosis in this questionnaire. (American Psychiatric Association, 1980).

Results:

The data is mostly gathered from the students of Psychology. Further the responses were from students more than or were at the age of 20s i.e., around 22 and 26 age group. The responders were mostly students that to undergraduate students or the students who are pursuing master's in psychology.

From the responders it was seen that most of the participants less than 50% when asked about whether ADHD children population was first diagnosed with SCT which was around 80%. 5% of the population choose 100% and less than 90% when asked about the same whereas rest of the participants choose less than 75% when asked about the same. About 60% of the responders responded with that there is nothing significant among the three basic different symptoms shown by SCT. 10% of the population agreed with the presence of day dreaming and 10 % agreed with the presence of anxiety as a symptoms rest responded with the presence of depression shown in fig 1.

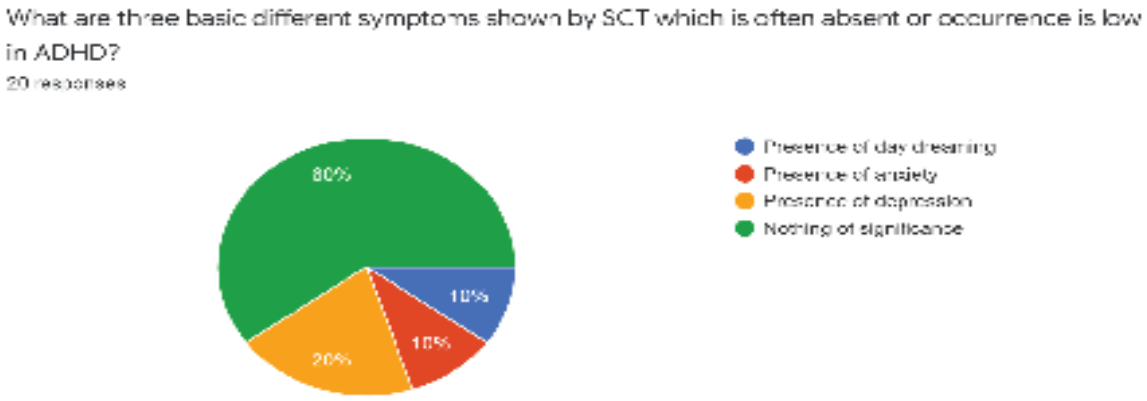

Fig 1. Symptoms present in SCT which are absent in ADHD

When asked about the genetic background of SCT 55% agreed with the fact that can't differentiate. 30 % opted yes SCT have any genetic background whereas rest 15% choose no SCT doesn't have any background, fig 2.

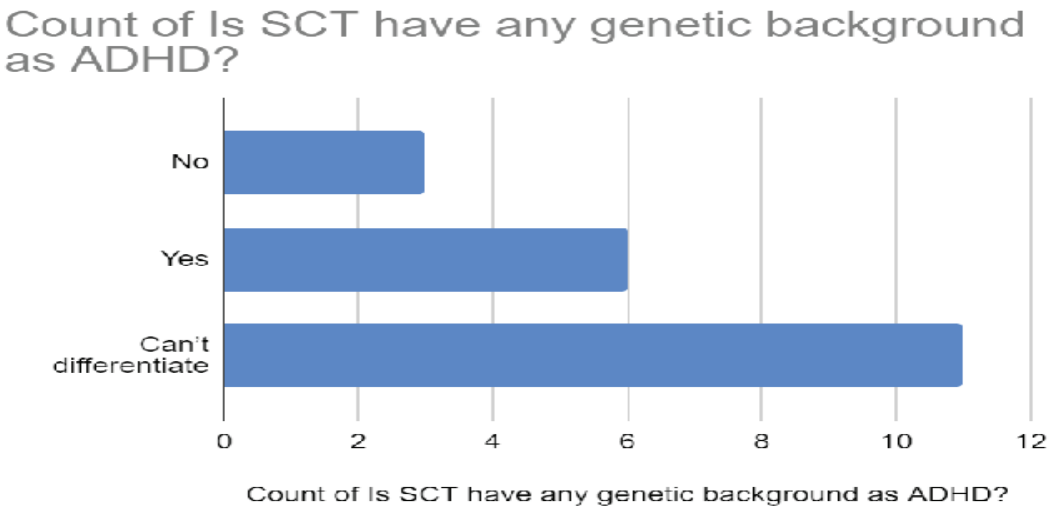

Fig 2. SCT genetic background as compared to ADHD

65% of the students were unable to diagnose ADHD in the children with SCT using the depression as the major concern, shown in fig 3.

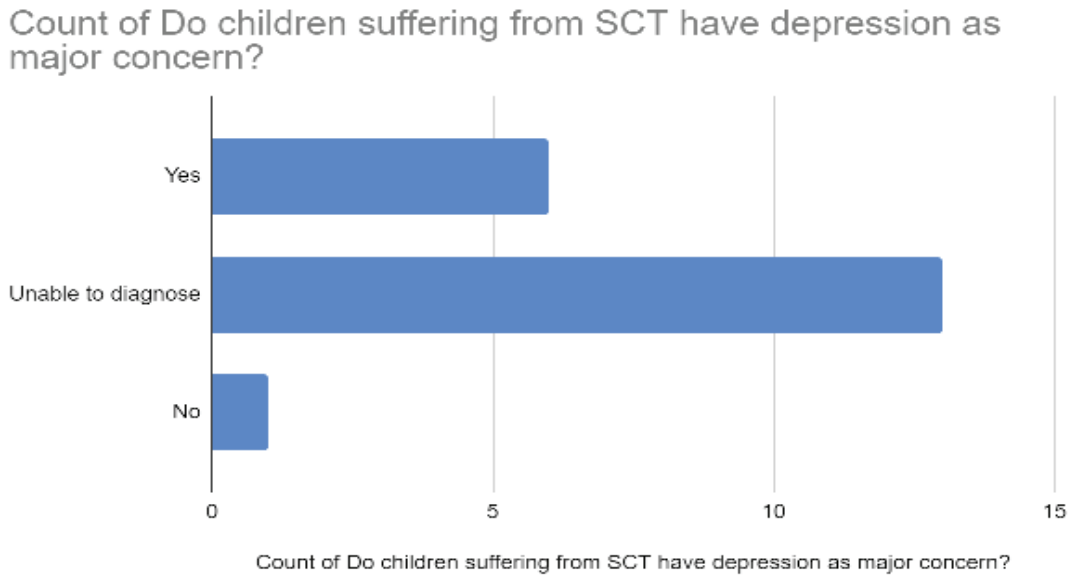

Fig 3. Depression and SCT

30% of the participants choose yes, they can diagnose ADHD in children with SCT and 5% said no they can't diagnose ADHD in children with SCT using depression as the major concern.

When responders were asked about anxiety as a big issue in SCD suffered individuals. 50% of the participants agreed to the point that they were unable to diagnose 20% of the responders said nowhere as 30% of the participants agreed to the point the anxiety a big issue in SCT suffered individuals, fig 4.

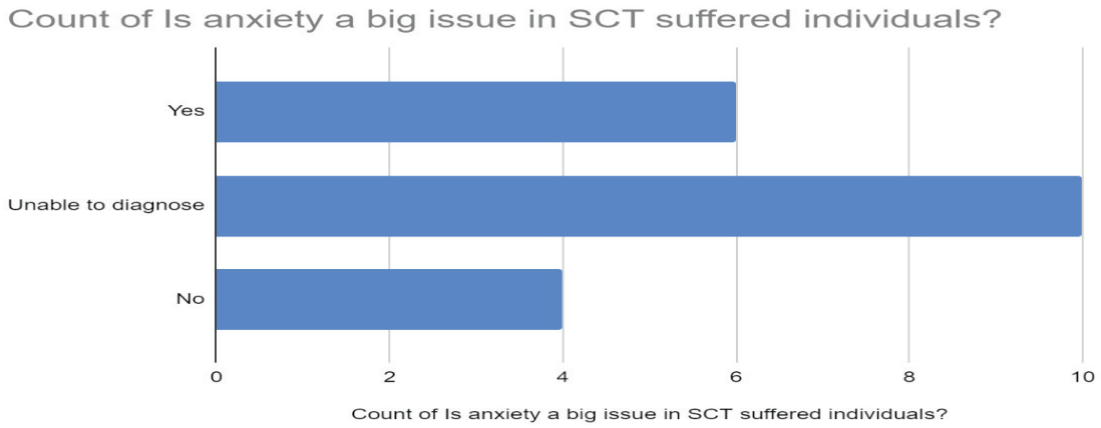

Fig 4. Anxiety emerging as a big issue in SCT.

It was seen that around 65% of the participants choose the partial involvement daydreaming in the SCT suffered populations and there is no passive involvement in social gatherings. 20% of the participants agreed to the point that there is presence of daydreaming issues and passive involvement in social gatherings whereas 15% totally disagreed to the fact above, fig 5.

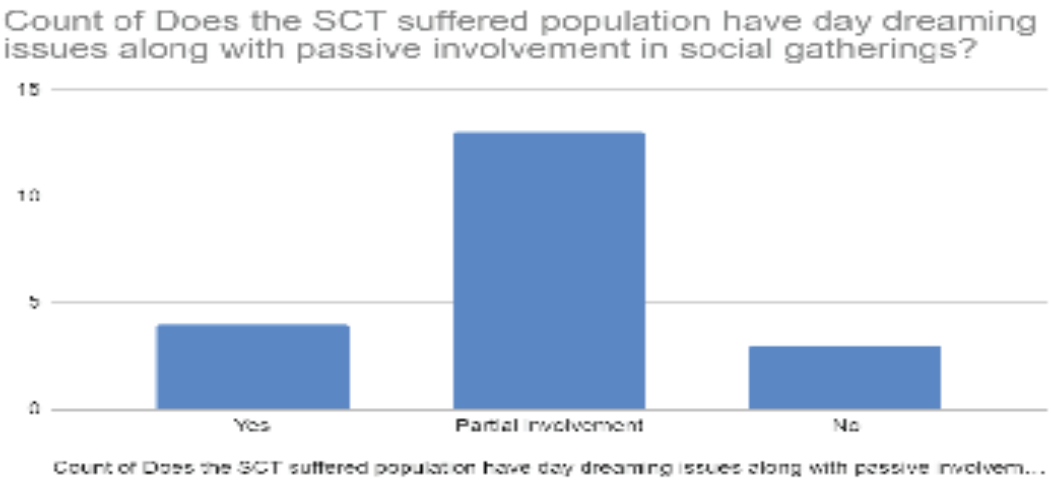

Fig 5. Passive involvement in social gathering and day dreaming in SCT

30% of the participants agreed to the point that parent's attention, care and time have relation with SCT prognosis or diagnosis. 10% of the participants totally denied the fact that parent's attention, care and time have any relation with SCT prognosis or diagnosis.

It was seen the 95% of the participants agreed that busy and unhealthy lifestyle have impact on SCT and when asked about how many patients in a month visit with SCT in relation to ADHD 55% said that no such records were registered and 45% said that there less than ADHD patients, fig 6.

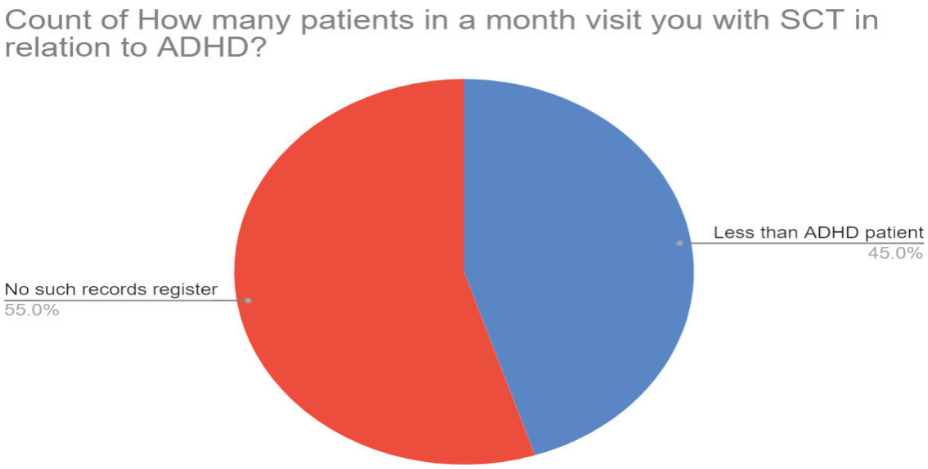

Fig 6. Influx of patient in clinic of SCT comparing with ADHD.

Discussion:

The Becker et al. have already made it clear and evident that the symptoms of ADHD are different of that of SCT which this study also proves. Unlike Becker et al. these studies showed some facts about SCT having genetic involvement. ADHD diagnostic criteria, in particular, require the onset including at least "several" symptoms before the age of 12 years. Nevertheless, no studies have been conducted to determine the age of onset of SCT symptoms, this was suggested by American Psychiatric Association in 2013 which also supports this study results stating the maximum number of diagnosed SCT were actually visited the outpatient department for ADHD diagnosis.

This study results expressed that 10 % of patient which were initially diagnosed ADHD were suffering from SCT also while Mitchell et al. proved that 13.3 % sample suffering from SCT who were first diagnosed by ADHD. While 40 % of study respondent in this study said depression, anxiety and day dreaming are main symptoms of SCT but the Becker et al. registered in their study that 30% of patient of SCT had depression while other were similar as ADHD symptoms. Mitchell et al. said 66% of SCT cases were registered in childhood while in this study we found out SCT were diagnosed later in life than ADHD. McBurnett et al. study revealed that 5% of patient prognosis got stronger when the environment in given by care giver was more communicative and caring similar to this study which revealed 30% of respondents aggreging on importance of environment provided by caregivers. Like Becker et al. this study also proved that the modern lifestyle with little or no physical activity have led to increase in cases of SCT and also have hampered the prognosis of symptoms of SCT. This study also revealed that the as compared to ADHD, SCT patients have lesser visits to clinics. This study documented that the symptoms and occurrence of SCT and ADHD have very similar background but certain symptoms are very specific to SCT unlike Becker et al. which says that while controlling ADHD, SCT symptoms arises as result slower motor function.

As per Becker et al. initially SCT were included as symptoms of ADHD unlike our study which documented that SCT is all together a distinct condition just like Mitchell et al. which have similar findings. Finally, the study indicated that, when assessed retrospectively, the onset of self-reported SCT symptoms commonly occurs prior to adulthood, and that people with ADHD could report an earlier age of onset than non-ADHD peers. SCT is not a standardized diagnostic organization, though this is being considered this same is also suggested by Mitchell et al.

Conclusion

This study comprehensively studied the symptoms of both SCT and ADHD, including both common symptoms and symptoms which differentiate them from one another. This study provided us the knowledge that SCT which show symptoms such as depression, anxiety and day dreaming is unlikely to be present in ADHD. On the basis of this study findings SCT and ADHD can be identified as two different conditions. The data collected also indicates some logical and acceptable differences in symptoms of SCT and ADHD such as 20% of respondents agreeing on day dreaming and anxiety involved in SCT while being absent in ADHD. While 30% of respondents identified presence of depression a major symptom of SCT. Hence concreating the above mention point about SCT and ADHD being two different health condition.

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Annex:

The question which was asked is listed below:

1. What population of the ADHD children actually was first diagnosed with SCT?
2. What are three basic different symptoms shown by SCT which is often absent or occurrence is low in ADHD?
3. Is SCT have any genetic background as ADHD?
4. Do children suffering from SCT have depression as major concern?
5. Is anxiety a big issue in SCT suffered individuals?
6. Does the SCT suffered population have day dreaming issues along with passive involvement in social gatherings?
7. Does the parent's attention, care and time have any relation with SCT prognosis or diagnosis?
8. Is SCT have any corresponding effects on the environment provided in home or in school by guardians or the care givers?
9. Does this busy and unhealthy lifestyle have any impact on SCT?
10. How many patients in a month visit you with SCT in relation to ADHD?

Meditation: Controlling the Controller (Brain)

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ABSTRACT

Objectives: Sahaja Yoga Meditation is a scientifically proven mindfulness type of meditation technique that maintains a balanced state of mind. This study aims to evaluate how Sahaja Yoga Meditation may impact the sleep patterns of its practitioners.

Methods: A total of 71 responses were received for the questionnaire form, with closed-ended questions, which was shared online with Sahaja Yoga Meditators from all age groups. Sleep performance was assessed based on the Sleep Questionnaire and Assessment of Wakefulness (SQAW) of Stanford University and the Epworth Sleepiness Scale (ESS). Reference was practitioners involved with meditation for more than one year. Participants were selected who practice meditation for less than one year (control group) and those who practice meditation for more than one year (scope of interest).

Results: The lower normal daytime sleepiness range is 0-5 and the higher normal daytime sleepiness range is 6-10. Study results show, that one female practicing meditation for less than one year had an ESS score of 9 points (peripheral-normal). Twenty-seven females practicing meditation for more than one year had an average ESS of 5.8 points. Forty-three males practicing meditation for more than one year had an average ESS of 6.41 points. Participants practicing meditation for >1 year were within the normal range. A total of 55% get 7-8 hours of undisturbed sleep, 10% get 4-5 hours, 6% get more than 8 hours, and 1% get <4 hours of undisturbed sleep.

Conclusion: From this small group it is seen, that Sahaja Yoga Meditation has a positive impact on the sleep patterns of individuals and it may depend on the time period of practice. Conducting study on large group may give better evidence, that may help to determine impact of Sahaja Yoga Meditation on the regions of brain, responsible for sleep behaviour.

Keywords: Sahaja Yoga Meditation, Mindfulness meditation, Sleep, Epworth Sleepiness Scale (ESS), Daytime sleepiness

Introduction

Meditation has been used for thousands of years as a tool to train our minds (Analayo, 2003, Iyengar, 2005). Meditation is involved with regulating and monitoring our attention and emotions (Lutz et al., 2008b, Tang et al., 2015). Mindfulness meditation reduces mind wandering and random thinking through a decrease in default mode network activity present in the brain, which is associated with mind-wandering and random thinking, and improves clinical symptoms in various diseases/ disorders (Aftanas and Golocheikine, 2001, Brewer et al., 2011, Sood and Jones, 2013).

Sahaja Yoga Meditation is a scientifically proven mindfulness type of meditation with the goal of establishing mental silence or thoughtless awareness (Hernández et al., 2018). The practice of Sahaja Yoga Meditation started from the year of 1970 by Shree Nirmala Shrivastav and is practiced across the globe. Sahaja Yoga Meditation produces a wide range of subtle effects on the body by working

on the limbic system and increasing the activity of the parasympathetic nervous system and thereby decreasing the sympathetic nervous system activity (Manocha, 2000). It is shown that mental silence corresponds to improvements in mental and physical health in Sahaja Yoga Meditators (Manocha et al., 2012). Sahaja Yoga Meditation is proved to be beneficial in depression, stress, anxiety, and attention deficit hyperactivity disorder (Morgan, 2001, Chung et al., 2012, Harrison et al., 2004, Manocha et al., 2011, Rubia et al., 2007). Further researches show that Sahaja Yoga Meditation is helpful in physiological and neurological diseases: high blood pressure (Chung et al., 2012), asthma (Manocha et al., 2002), epilepsy (Panjwani et al., 1995, Panjwani et al., 2000, Panjwani et al., 1996) and menopause (Manocha et al., 2007). It was shown that mental silence in Sahaja Yoga Meditation is related to larger gray matter volumes in the medial fronto-insular-striatal networks which is important for cognitive, emotion and attention control (Hernández et al., 2018). The event-related potential (ERP) obtained from long-term Sahaja Yoga meditators showed enhanced frontal top-down control over fast automatic salience detection which was based on amygdala functions and verbal labeling was displacing natural emotional appraisal, thus the task was transformed from emotional to cognitive, leading to more flexible responses to challenges (Reva et al., 2014). Sahaja Yoga Meditation has been proven to be an adjunct in the treatment of post myocardial infarction and cardiac arrythmias (Subramanian et al., 2014, Yalta et al., 2011). A study showed that there was a decline in academic stress after practicing Sahaja Yoga Meditation for 6 weeks ($p<0.05$) (Hotkar, 2017).

Sleep is a vital part of human physiology that is associated with the phase of relaxation in the biological clock (Panjwani et al., 2021). There are two main types of sleep: rapid eye movement sleep (REM) and non-rapid eye movement sleep (NREM). NREM is further divided into three or four separate phases. NREM is also called as quiet sleep and REM as the active sleep during which dreams occur (Cappuccio et al., 2010). Regulation of sleep is by homeostatic mechanism and circadian rhythm which regulates physiological processes over a 24-hour time period (Williams III et al., 2016). The suprachiasmatic nucleus in the hypothalamus regulates the sleep wake pattern (Krystal et al., 2013). Sleep plays an important role in the brain maturation and development of cognitive functions like memory and learning (Miller et al., 2014).

Sleep is an essential component for the maintenance of health and sleep disorders predispose individuals to future diseases (Ibáñez et al., 2018). Sleep problems are associated with poorer cognitive function (Kronholm et al., 2009, Xu et al., 2011). Lack of sleep is associated with fatigue, tiredness, abnormal daytime sleepiness (Bliwise, 1996), as well as causes changes in the metabolic, endocrine and immune pathways (Spiegel et al., 2009, Knutson et al., 2007, Miller et al., 2007). Also, a decrease in sleep duration is associated with cardiovascular diseases, respiratory disorders, hypertension, diabetes mellitus type 2, obesity in children and adults (Wingard et al., 2002, Ferrie et al., 2007, Cappuccio et al., 2009, James E. Gangwisch et al., 2006, Meisinger et al., 2007, Saverio Stranges et al., 2008). Daytime sleepiness is related to depression (Shen et al., 2011) and improvement in daytime sleepiness and fatigue lead to an improved state of depression (Huberty et al., 2021). Impaired sleep in the acute postoperative period is associated with decreased pain tolerance, psychomotor and affective disturbances, along with cognitive dysfunction (Roehrs et al., 2012, Karl Doghramji, 2012, David R. Hillman, 2017, Sivertsen et al., 2015).

It was Massion et al., 1997 who first studied the effect of meditation on sleep. The aim of his research was to study the neurophysiological correlation of a higher state of consciousness during sleep. It was evident that meditators were in slow-wave sleep (SWS) with high theta-alpha power and reduced electromyogram (Massion et al., 1997). This was corresponding with the stabilized state

of higher consciousness in sleep (Massion et al., 1997). Meditation helps with the enhancement of the amplitude of gamma synchrony and makes the thalamo-cortical and cortico-cortical interactions stronger (Lutz et al., 2004). These led to stronger network synchronization and altered neural structure and function (Lazar et al., 2005; Pagnoni and Cekic, 2007). During sleep, predominant parasympathetic activity in the SWS is observed and in REM sympathetic activity dominates (Pedemonte et al., 2005, Pivik et al., 1996, Trinder et al., 2001, Otzenberger et al., 1997). Meditation establishes a sympatho-vagal balance with a parasympathetic predominance (Wu and Lo, 2008; Zeidan et al., 2010). Meditation causes increased frontal midline theta activity (Aftanas and Golocheikine, 2001; Travis and Shear, 2010). The anterior cingulate cortex gives rise to frontal midline theta activity which in turn controls the parasympathetic activity (Tang et al., 2009). Meditation regulates the hypothalamo-pituitary adrenal (HPA) Axis, consequently regulating the catecholamine and cortisol levels (Infante et al., 2001, Jevning et al., 1978) with increased dehydroepiandrosterone (Glaser et al., 1992), melatonin levels (Massion et al., 1995, Tooley et al., 2000), and anterior Pituitary hormones like growth hormone, prolactin and thyroid stimulating hormone (TSH), (Jevning et al., 1978b, MacLean et al., 1997, Werner et al., 1986). Melatonin regulates sleep by exerting a hypnotic effect through acute inhibition of the suprachiasmatic nucleus (von Gall et al., 2002) and facilitates hypothermic response by causing peripheral vasodilation (Krauchi et al., 1997). Melatonin is used for the management of sleep disorders due to work, jetlag, and insomnia (Martinez and Lenz, 2010). Meditation causes a rise in the levels of melatonin including its precursors: adrenaline and serotonin (Tooley et al., 2000). Meditation leads to slow metabolism of melatonin in the liver or increases its synthesis in the pineal gland (Massion et al., 1995). Meditation also activates the insula, anterior cingulate, hypothalamus and leads to autonomic and humoral changes that regulate sleep quality (Newberg and Iversen, 2003). Thus, meditation with its global effect on the brain and body establishes mind-body harmony (Ravindra P. Nagendra et al., 2012).

There have been numerous researches with regard to mindfulness meditation but studies related to Sahaja Yoga Meditation are limited. Therefore, this study was conducted with the goal of expanding the knowledge of Sahaja Yoga Meditation and its beneficial effects. Specifically, effects on sleep patterns were considered as the main objective of this research. For this the ESS was used to assess the daytime sleepiness among meditators and SDQ of SQAW was used to assess the sleep quality and abnormality, if any, associated with sleep. It was hypothesized that Sahaja Yoga Meditation leads to better sleep quality, devoid of any pre-sleep arousals and decreased daytime sleepiness along with a state of being refreshed/restored/alert.

Methodology

The study used a quantitative research method in the form of a survey questionnaire in an online format. An observational method was used in this study in the form of a cross-sectional study. The survey questionnaire form included closed-ended questions in the English language. The participants were Sahaja Yoga Meditation practitioners from all age groups. The participants were all from India. The survey form clearly stated the aim of the study. It also mentioned that complete confidentiality will be maintained about participants' identities. The survey form was shared with both long-term and short-term Sahaja Yoga Meditation practitioners. The questions included age, gender, nationality, how long the participants were practicing Sahaja Yoga Meditation, when they meditate, the Sleep Questionnaire and Assessment of Wakefulness (SQAW) of Stanford University and the Epworth Sleepiness Scale (ESS).

Sleep performance was assessed based on the Sleep Questionnaire and Assessment of Wakefulness (SQAW) of Stanford University – the sleep disorder questionnaire (SDQ) and the Epworth Sleepiness Scale (ESS). Not all questions from SDQ were used in order to get efficient responses as it was felt that the participants may not be able to complete all the questions from SDQ given in the online survey form. The SDQ included a total of 175 questions, out of this, 18 questions were asked in this survey. This was done to make it easier for the participants to fill the survey, as it was done online, and it would have been difficult for participants to understand some questions and give a large portion of time to this survey, hence the restricted number of questions. Only important questions from this study point of view were included which could be easily understood by the participants, like how many hours of undisturbed sleep the participants get, how long is the longest wake period at night, how many times they get up to urinate at night, how many daytime naps they get on an average working day and how long they remain restored/refreshed/alert after a daytime nap. For SDQ participants were told to choose the answer based on their past six months of experience. Complete ESS questions were used. Reference was practitioners involved with meditation for more than one year. Participants were selected who practice meditation for less than one year (control group) and those who practice meditation for more than one year (scope of interest).

Epworth Sleepiness Scale (ESS): It is a self-reported questionnaire that measures subjective daytime sleepiness. Individuals rate the chance of dozing in 8 mentioned situations from daily life. The questions include: (1) sitting and reading, (2) sitting and talking to someone, (3) sitting inactive in a public place, (4) sitting in a car while stopped for a few minutes in traffic, (5) lying down to rest in the afternoon when circumstances permit, (6) watching TV, (7) sitting quietly after lunch without alcohol, and (8) sitting as a passenger in a car for an hour without a break. Individuals rate the chance of dozing on a 4-point scale, i.e., 0–3. Response interpretations are as follows: 0 - no chance of dozing, 1 - slight chance of dozing, 2 - moderate chance of dozing and 3 - high chance of dozing. ESS scores range from 0 to 24. Points 0-5 are within the lower normal daytime sleepiness range, 6-10 are higher normal daytime sleepiness range, 11-12 are mild excessive daytime sleepiness range and 13-15 are moderate excessive daytime sleepiness range and 16-24 are severe excessive daytime sleepiness range (Johns, 1991, Kendzerska et al., 2015,)

Sleep Disorder Questionnaire (SDQ): It is a measure of sleep disturbances, usual sleep habits and elicits predisposition towards various sleep disorders. It was developed from the Sleep Questionnaire and Assessment of Wakefulness (SQAW) of Stanford University. It consists of a total of 175 questions and answers are given based on the past 6 months of experience. Questions were selected from the SQAW after applying the following criteria: (a) adequate face validity upon review by three accredited polysomnographers; (b) significant difference on univariate ANOV A or chi-square analysis between the clinical groups: sleep apnea, narcolepsy, psychiatric sleep disorder and periodic limb movement disorder (PLMD); (c) high completion rate and (d) describes a pathognomonic symptom of any major sleep disorder, even of low frequency in the population (Douglass et al., 1994).

Microsoft Excel was used for data analysis which included tools like charts, and for the calculation purpose, sum and average tools were used. Microsoft word was used for interpretation using tools like word count, justification, line spacing and layout.

Results

A total of 71 responses from Sahaja Yoga Meditation practitioners were received for this survey within one day. All the participants were from India. Out of these, 39.4% were females and 60.5%

were males. According to the age distribution, 4.2% were less than 12 years old, 18.3% were in the age group of 12-19 years, 39.4% were in the age group of 19-29 years, 30.3% were in the age group of 30-50 years and 7% were in the age group of 51-70 years. Out of these, one female participant was practicing Sahaja Yoga Meditation for less than one year whereas, the remaining 70 participants practiced meditation for more than one year. There were 73.2% of participants who practiced meditation every day twice, 22.5% practiced meditation every day once and 4.2% practiced meditation sometimes in a week.

According to the Epworth Sleepiness Scale (ESS), the lower normal daytime sleepiness range is 0-5 points and the higher normal daytime sleepiness range is 6-10 points. The ESS data results were as follows: study results show that one female practicing meditation for less than one year had an ESS score of 9 points (i.e., at the periphery of the higher normal daytime sleepiness range). Twenty-seven females practicing meditation for more than one year had an average ESS of 5.8 points. Forty-three males practicing meditation for more than one year had an average ESS of 6.41 points. Participants practicing meditation for more than 1 year were within the normal range. In more than one group, participants who meditated every day twice had an average ESS of 5.7 points. In the same group, those who meditated every day once had an average ESS of 6.8 points.

From the ESS, a female participant practicing meditation for less than 1 year, when asked how likely was she to feel sleepy while sitting and reading wrote - never, while watching television – slight chance, while sitting inactive in a public place (e.g., meeting or theater) – slight chance, while being a passenger in a car for an hour without a break – moderate chance, while sitting and talking to someone – slight chance, while lying down to rest in the afternoon when the circumstances permit – high chance, while sitting quietly after lunch without alcohol – slight chance, and while in a car stopped for a few minutes in traffic – never.

Among those who practiced meditation for more than one year, participants who meditated every day twice, answered the following way, the ESS questions how likely were they to feel sleepy in a given situation:

while sitting and reading – 34.2% wrote never, 28.6% - slight chance, 8.5% - moderate chance and 1.4% high chance

while watching television – 49% wrote never, 39.2% - slight chance and 11.8% - moderate chance

while sitting inactive in a public place (e.g., meeting or theater) – 72.5% wrote never, 19.6% - slight chance, 5.8% - moderate chance and 2% - high chance

while being a passenger in a car for an hour without a break – 45.1% wrote never, 37.3% slight chance, 13.7% - moderate chance and 3.9% - high chance

while sitting and talking to someone – 61.4% wrote never, 5.8% - moderate chance, 5.7% - slight chance and 2% - high chance

while lying down to rest in the afternoon when the circumstances permit – 35.3% wrote moderate chance, 23.5% - high chance, 23.5%- slight chance and 17.6% - never

while sitting quietly after lunch without alcohol – 39.2% wrote never, 27.4% - slight chance, 19.6% - moderate chance and 13.7% high chance

while in a car stopped for a few minutes in traffic – 82.4% wrote never, 11.8% - slight chance, 3.9% moderate chance and 2% high chance

Those who meditated every day once (a total of 16 meditators), answered the following way, how likely were they to feel sleepy in a given situation:

while sitting and reading: 9 wrote never, 3 - slight chance, 2 - moderate chance and 2 high chance

while watching television: 9 wrote never, 4 - slight chance and 3 - moderate chance

while sitting inactive in a public place (e.g., meeting or theater): 9 wrote never, 4 - moderate chance, 2 - slight chance and 1 - high chance

while being a passenger in a car for an hour without a break: 8 wrote slight chance, 5 wrote never, 2 - moderate chance and 1 - high chance

while sitting and talking to someone:12 wrote never, 2 - slight chance, 1 - high chance and 1 - moderate chance

while lying down to rest in the afternoon when the circumstances permit: 6 wrote moderate chance, 5 - slight chance, 4 - never and 1 - high chance

while sitting quietly after lunch without alcohol: 7 wrote never, 4 - slight chance, 4 - moderate chance and 1 high chance

while in a car stopped for a few minutes in traffic: 13 wrote never and 3 - slight chance

The Sleep Disorder Questionnaire (SDQ) results, from a participant who practice meditation for less than one year, were as follows: the female participant got 4-5 hours of undisturbed sleep at night. The longest wake period at night was 6-19 minutes. She usually gets up only once at night to urinate. She rarely takes any daytime nap and when she does, she remains restored/refreshed/alert for 3-4 hours. Her answers for the remaining SDQ were as follows: I get too sleep at night – sometimes, I often have a poor night's sleep – usually, I have trouble getting to sleep at night – sometimes, I wake up often during the night – sometimes, at bedtime thoughts race through my mind – usually, at bedtime I feel sad and depressed – never, at bedtime I worry about things – never, at bedtime I am afraid of not being able to go to sleep -never, my night sleep is restless and disturbed – rarely, my night sleep is disturbed by light – sometimes, my night sleep is disturbed by noise – usually, my sleep is disturbed by severe heartburn and choking – never, I awake suddenly gasping for breath, unable to breathe – rarely, at night my heart pounds, beats rapidly, or beats irregularly – never, I sweat a great deal at night – rarely, my sleep is disturbed because of pain in the neck, back, muscles, joints, legs or arms – sometimes, I have a lot of nightmares (frightening dreams) – sometimes, and I am sometimes very sleepy in the daytime, and this seems to go in cycles at regular intervals – sometimes.

Participants practicing Sahaja Yoga Meditation for more than one year who practice meditation every day twice responded to SDQ as follows: 86.3% get 6-7 hours, 7.84% get 4-5 hours and 5.8% get more than 8 hours of undisturbed sleep. The duration of the longest wake period at night is less than 5 minutes for 47% of meditators, 20-59 minutes for 25.5% of meditators, 6-19 minutes for 25.5% meditators, 1-2 hours for 9.8% of meditators, and more than 2 hours for 7.8% meditators. The frequency of getting up at night to urinate is as follows: 51% do not get up to urinate, 29.4% get up once and 11.8% get up twice. The frequency of daytime naps on a working day is: 51% do not take naps, 43.1% take nap once and 4% take naps twice. The time period for which meditators feel restored/refreshed/alert, after taking nap are: 31.8% for more than 6 hours, 31.4% for less than one hour, 27.4% for 5-6 hours, 11.8% for 1-2 hours, and 7.8% for 3-4 hours.

The results (in percentage) for the remaining SDQ were as follows:

	Always	Never	Rarely	Some-times	Usually
I get too sleep at night	39.2	9.8	17.6	7.8	21.6
I often have a poor night's sleep	0	43.1	39.2	13.7	0
I have trouble getting to sleep at night	0	58.8	29.4	7.8	0
I wake up often during the night	0	51	33.3	11.8	2
At bedtime thoughts race through my mind	0	45.1	31.4	19.6	0
At bedtime I feel sad and depressed	0	80.4	9.8	5.8	2
At bedtime I worry about things	0	62.7	23.5	11.8	0
At bedtime I am afraid of not being able to go to sleep	0	80.4	11.8	3.9	0
My night sleep is restless and disturbed	0	72.5	19.6	3.9	0
My night sleep is disturbed by light	1	33.3	41.2	11.8	9.8
My night sleep is disturbed by noise	0	37.2	39.2	15.7	5.8
My sleep is disturbed by severe heartburn and choking	0	80.4	13.2	2	0
I awake suddenly gasping for breath, unable to breathe	0	88.2	5.8	2	2
At night my heart pounds, beats rapidly, or beats irregularly	0	64.7	17.2	0	0
I sweat a great deal at night	0	64.7	15.7	5.8	2
My sleep is disturbed because of pain in the neck, back, muscles, joints, legs or arms	0	64.7	27.4	5.8	0
I have a lot of nightmares (frightening dreams)	0	38	17.6	2	2
I am sometimes very sleepy in the daytime, and this seems to go in cycles at regular intervals	0	51	37.2	7.8	2

While SDQ results from those meditators who meditate every day once (a total of 16 meditators) were as follows: 9 meditators get 6-7 hours, 4 meditators get 4-5 hours and 3 meditators get more than 8 hours of undisturbed sleep. The duration of longest wake period at night is less than 5 minutes for 5 meditators, 20-59 minutes for 4 meditators, 6-19 minutes for 3 meditators, 1-2 hours for 3 meditators, and more than 2 hours for 1 meditator. The frequency of getting up at night to urinate is as follows: 7 meditators get up once, 6 meditators do not get up to urinate, 2 meditators get up twice and 1 meditator gets up more than 4 times. The frequency of daytime naps on a working day is: 9 meditators take nap once, 6 meditators do not take naps and 1 meditator takes naps twice. The time period for which meditators feel restored/refreshed/alert, after taking nap are: 10 meditators for more than 6 hours, 3 meditators for less than one hour, 1 meditator for 5-6 hours, 1 meditator for 1-2 hours, and 1 meditator for 3-4 hours. The results (in numbers) for the remaining SDQ were as follows:

	Always	Never	Rarely	Sometimes	Usually
I get too sleep at night	10	2	1	0	3
I often have a poor night's sleep	0	5	4	4	1
I have trouble getting to sleep at night	0	9	4	1	1
I wake up often during the night	0	8	4	1	2
At bedtime thoughts race through my mind	1	6	4	2	2
At bedtime I feel sad and depressed	0	11	2	1	0
At bedtime I worry about things	0	11	3	0	0
At bedtime I am afraid of not being able to go to sleep	0	12	1	1	1
My night sleep is restless and disturbed	0	11	2	1	1
My night sleep is disturbed by light	1	10	3	1	0
My night sleep is disturbed by noise	0	8	5	1	1
My sleep is disturbed by severe heartburn and choking	0	14	1	0	0
I awake suddenly gasping for breath, unable to breathe	0	16	0	0	0
At night my heart pounds, beats rapidly, or beats irregularly	0	14	2	0	0
I sweat a great deal at night	1	12	2	1	0
My sleep is disturbed because of pain in the neck, back, muscles, joints, legs or arms	0	10	2	3	0
I have a lot of nightmares (frightening dreams)	0	8	4	2	1
I am sometimes very sleepy in the daytime, and this seems to go in cycles at regular intervals	1	8	3	3	0

Discussion

This study provides evidence that Sahaja Yoga Meditation has a positive effect on sleep. Meditators are found to be getting a sufficient amount of good quality sleep with improved daytime sleepiness. The ESS evaluates behavioral sleepiness. The ESS results depict that, meditators have a normal daytime sleepiness range, an average of 5.8 for females and 6.41 for males, for meditators in more than one year group. The ESS point was 9 for less than one year group of meditators. Also, those who meditate every day twice had 5.7 points and 6.8 for those who meditate every day once. We can decipher from this information that daytime sleepiness is indirectly proportional to the period of practicing meditation. Those meditating every day twice had less daytime sleepiness compared to those who meditate only once. Also, the daytime sleepiness was higher in meditators from the less than one-year group when compared to the more than one-year group, although the ESS point was

within the normal range. Question 4 of ESS was related to sitting inactive in a public place in which almost all of the meditators wrote never. This result could be anticipated from the practice of meditation as during meditation people sit in an inactive state. In fact, most of these questions were related to inactivity and one can easily understand why most of the meditators wrote that the chance of sleepiness during these inactive states, was null. Another interesting point to note is related to question 1 of sitting and reading. Most of the meditators wrote chance of sleepiness is null in this aforementioned situation. From this it could be said that meditators have better academic performances. From questions 2, 4 and 7 we can decipher that the meditators have good concentration, observation skills and they are efficient in completing any tasks. From question 5 we can interpret that the meditators have good communication skills, listening and speaking abilities.

The SDQ study reveals the following information - mostly meditators got 6-7 hours of undisturbed sleep with the longest wake period at night being an average of 5 minutes. The frequency of taking naps on normal working days was also normal with most of the meditators taking naps at least once a day. After the nap, most of them remained refreshed /restored/alert for an average of 6 hours. Furthermore, most of the meditators always get enough sleep at night and do not have trouble falling asleep at night. In the SDQ evaluation also it is seen that the results differ between the period of practicing meditation. Among those who meditate every day twice, 88.2% never woke up suddenly gasping for breath, 80.4% never felt depressed and sad at bedtime, 72.5% are never restless and disturbed at bedtime, 64.7% never experienced rapid or irregular heartbeat at night, 62.7% never worried about things at bedtime, and 64.7% never experienced a disturbance in sleep due to pain in the neck, back, muscles, joints, legs or arms, and 45.1% never had, while 31.4% rarely had any thoughts racing through their mind at bedtime. While among those who meditate every day once, 87.5% never experienced rapid or irregular heartbeat at night, 87.4% never woke up suddenly gasping for breath, 68.7% never felt depressed and sad at bedtime, 68.7% are never restless and disturbed at bedtime, 68.7% never worried about things at bedtime, 62.5% never experienced a disturbance in sleep due to pain in the neck, back, muscles, joints, legs or arms, and 37.5% never had, while 25% rarely had any thoughts racing through their mind at bedtime. From these results we can interpret that the meditators in general do not suffer from pre-sleep arousal, depression, anxiety, sleep disorders, and other medical conditions such as heartburn, sleep apnea, myalgia or joint pain.

These results are consistent with the previous findings that meditation helps to attain good quality sleep. Using a meditation app led to improvements in depression and anxiety that were related to sleep disturbances and this effect was mostly observed with improvements in cognitive and somatic pre-sleep arousal (Huberty et al., 2021). Pre-sleep arousal is associated with rapid heartbeat, palpitations, thoughts racing through the mind and increased body temperature which is the same as symptoms of anxiety (Puzino et al., 2019). In the recovery of total knee arthroplasty, sleep quality is an important factor and evidence states that meditation contributes to improved sleep quality in the perioperative period (Canfield et al., 2021). Meditation maintains body homeostasis by means of global changes in the brain which also includes sleep and its regulation (Nagendra et al., 2012). Another form of mindfulness meditation is Vipassana during which non-rapid eye movement sleep reduced and increased rapid eye movement sleep in adults from the age group of 31-55 years (Pattanashetty et al., 2016). Another study conducted on pediatric healthcare professionals reveal that meditators have low Pittsburgh Sleep Quality Index (PSQI) scores ($p=0.024$) and decreased sleep latency($p=0.028$), indicating improved subjective sleep quality (Guerra et al., 2020).

However, there were a few limitations in this study. Firstly, the responses received within only

one day were taken. Secondly, only one response was received from less than one-year meditator group. Although results were compared based on a daily once and daily twice basis, a more efficient comparison could have been made with more responses from less than one year group. Lastly, this study also included meditators from the age group of 19 and below, for whom the ESS is not validated. For a better understanding of daytime sleepiness in children and adolescents, other methods could be used.

Conclusion

The aim of this research was to study the effect of Sahaja Yoga Meditation on the sleep patterns of its practitioners. It was hypothesised that Sahaja Yoga Meditation improves the sleep quality and reduces the daytime sleepiness in the meditators and that it depends on the time period of practicing meditation. The ESS and the SDQ of SQAW were the methods used to assess daytime sleepiness and the sleep quality in the meditators. This was done in the form of a survey questionnaire shared online for which a total of 71 responses were received within one day. From this small group, it was seen that Sahaja Yoga Meditation has a positive impact on the sleep patterns of individuals and it may depend on the time period of practice. From both the ESS and the SDQ studies, the results validated the study hypothesis firmly. Sahaja Yoga Meditation is indeed associated with a better sleep quality which is not associated with pre-sleep arousal. Normal daytime sleepiness is evident, along with a feeling of being energized, and a refreshed state of mind.

The author herself is a practitioner of Sahaja Yoga Meditation and can thus easily correlate with the study results, having experienced above mentioned results.

Conducting a study on large group may give better evidence, that can help to determine impact of Sahaja Yoga Meditation on the regions of brain, responsible for sleep behaviour. There have been numerous researches in the aforementioned regards related to meditation and we can say that the same results are seen in the case of Sahaja Yoga Meditators as well. Although there have been many researches with regard to mindfulness meditation but researches related to Sahaja Yoga Meditation are limited. More research on this particular topic could help for a better understanding of Sahaja Yoga Meditation's effects and its specific causes.

Recommendation

In recommendation it can be said that, based on all the information written in this paper, Sahaja Yoga Meditation, which is a mindfulness type of meditation, could be practiced for a better sleep quality and overall well-being.

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Author would like to humbly thank the supervisor, Dr. Sophio Kakaliashvili, MD. Assist. Prof. Georgian American University, Department of Pathology and Pharmacology, for her valuable guidance and constant support. Also, the author is heartily grateful to all Sahaja Yoga Meditators who participated in the study.

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Annex

ESS from >1 year group: meditate everyday twice (in percentage)	high chance	moderate chance	never	slight chance
while sitting and reading wrote	2	11.7	34.2	28.6
while watching television	0	11.8	49	39.2
while sitting inactive in a public place (e.g., meeting or theater)	2	5.8	72.5	19.6
while being a passenger in a car for an hour without a break	3.9	13.7	45.1	37.3
while sitting and talking to someone	5.8	2	61.4	5.7
while lying down to rest in the afternoon when the circumstances permit	23.9	35.3	17.6	23.5
while sitting quietly after lunch without alcohol	13.7	19.6	39.2	27.4
while in a car stopped for a few minutes in traffic	2	3.9	82.4	11.8

Is Spice Nice for The Human Body?

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SEU-Georgian National University;
Supervisor: Irine Sakhelashvili; MD, PhD

ABSTRACT

Have you ever felt acidic eating spicy food? Started sweating and felt really hot? Why is it that some people enjoy having bland food and some flavorful food? What do you think makes the mouth burn when you feel spice?

To answer this question, capsaicin is the chemical compound present in spicy food that triggers a burning sensation in the mouth, similar to the one we feel when we touch a hot object. Although both of these actions are unrelated, this happens because capsaicin creates a response to the temperature-sensitive receptors, which the brain perceives as "fire in mouth".

This research will be based on the effects spicy food has on a population living in cold regions. Spicy foods have many effects on bodily functions, but unlike the popular opinion of spicy food having disadvantages, it has many benefits. Some of the benefits include reduced risk of ulcers and cancer reduction, increased metabolism, increased immune system, improvement of heart health, etc. Peppery dishes dilate your blood vessels and keep you warm. Alongside this, they also raise the activity of sweat glands causing you to sweat and lose internal heat.

There are some cons to consuming too much spice too, it can irritate your gastrointestinal lining, cause stomach pain and even colitis. I guess we can conclude by saying that even if the dishes are finger-licking good, we shouldn't be lovin' it.

Keywords: capsain, benefits, immune system, warm, antibacterial properties

INTRODUCTION

We all love spicy food don't we? The feeling of satisfaction after eating spicy food is just incomparable. Many people love spicy food for its taste and aroma, but even then, there are some people who feel sweaty and really hot. Why is it that our hands start to waver when we eat spicy food? Why is it that we instantly start to look for water? What makes us feel this way?

Well, it's because spicy food contains an active ingredient called capsaicin that triggers your body to react in a specific way. Capsaicin binds to the TRPV1 receptor of the vanilloid class. TRPV1 receptors are present in your body for the purpose of heat detection, also known as thermoreception. They are present on our tongue, mouth, brain, bladder, skin, and other areas. They were originally meant to transmit impulses signaling heat-related stimuli, they accidentally detect spice.

According to our bodies, everytime we eat spicy food, the capsaicin present in it interacts with the TRPV1 receptors and depolarizes the neurons, hence it transmits the nerve impulses.

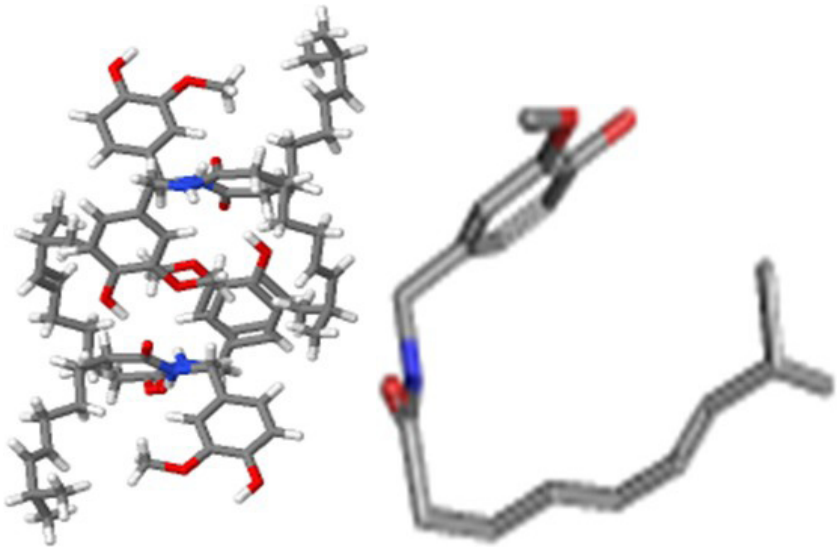
The brain integrates this information as harmful because the sensation we experience when we eat spicy food is similar to experiencing something 'hot'. This is the reason why we feel as if our mouth is on fire.

Capsaicin-TRPV1 Regulation

Structure of Capsaicin

Capsaicin is a chili pepper extract with analgesic properties. It is a neuropeptide releasing agent selective for primary sensory peripheral neurons. Used topically, capsaicin aids in

controlling peripheral nerve pain. In addition, it may also be useful in controlling chemotherapy- and radiotherapy-induced mucositis.The molecular formula of capsaicin is C18H27NO3.

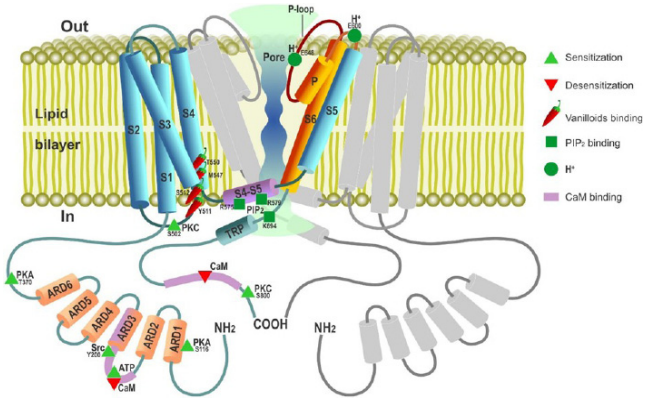


Structure of TRPV1 Receptors

The transient receptor potential cation channel subfamily V member 1 (TrpV1), also known as the capsaicin receptor and the vanilloid receptor 1, is a protein that, in humans, is encoded by the *TRPV1* gene. It was the first isolated member of the transient receptor potential vanilloid receptor proteins, which in turn, are a sub-family of the transient receptor potential protein group.

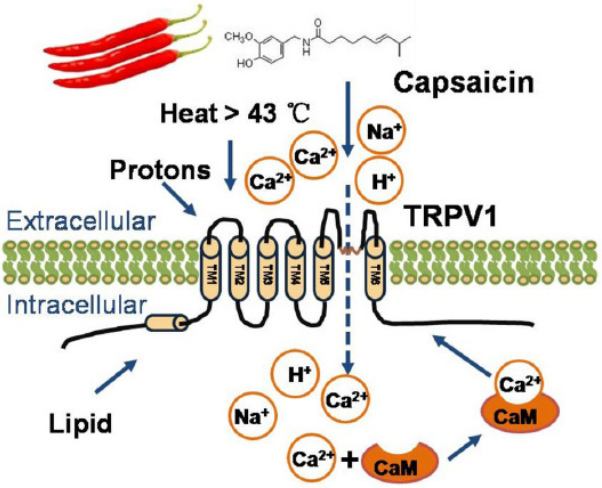
TRPV1 is an element or mechanism used by the mammalian somatosensory system. It is a nonselective cation channel that may be activated by a wide variety of exogenous and endogenous physical and chemical stimuli.

The best-known activators of TRPV1 are: temperatures greater than 43 °C (109 °F); acidic conditions; capsaicin (the irritating compound in hot chili peppers); and allyl isothiocyanate, the pungent compound in mustard and wasabi.



How do Capsaicin and TRPV1 Bind Together?

Resiniferatoxin binds to the capsaicin receptor (TRPV1) near the extracellular side of the S4 transmembrane domain. Capsaicin binds to a pocket formed by the channel's transmembrane segments, where it takes a "tail-up, head-down" configuration. Binding is mediated by both hydrogen bonds and van der Waals interactions. Upon binding, capsaicin stabilizes the open state of TRPV1 by "pull-and-contact" with the S4-S5 linker.



Benefits of capsaicin

So far, capsaicin has proved to be beneficial for the human body. Increase in consumption of capsaicin desensitizes the TRPV1 receptors to the nerves, leveling up the tolerance for heat and spice.

Capsaicin and Heart Diseases

A study was conducted on September 20, 2017, about the effects of capsaicin on heart health. There have been previous experiments that concluded, the use of capsaicin provided anti-inflammatory effects, increased metabolic rates, and decreased plasma cholesterol. This study focuses on the influence of capsaicin on the risk factors for coronary heart diseases (CHD). It followed a randomized, double-blind, controlled clinical trial that employed adults portraying low high-density lipoprotein cholesterol (HDL-C) levels to assess three-month supplementation with capsaicin capsules.

The conclusion of this study was that as compared to the control group, the fasting serum group showed an increase in HDL-Cl and the triglycerides (TG) levels and the ratio of total cholesterol to HDL-C reduced significantly. It should be noted that there was no crucial difference between the rates of low-density lipoprotein cholesterol (LDL-C), non-HDL-C, apolipoproteinAI (ApoAI), apolipoprotein B (ApoB), apolipoprotein E (ApoE).

This study was the first to use novel phytochemical capsaicin for the evaluation of prevention and possible treatment of CHD. It led to a result that capsaicin effectively increased serum fasting levels by HDL-C by 3 mg/dL, this is helpful as 1 mg/dL increment in HDL-C relates to 2-3% reduction in cardiovascular disorders. However, the benefits of this experiment still need to be validated on a much larger scale with better statistics.

(Qin, Y., Ran, L., Wang, J., Yu, L., Lang, H. D., Wang, X. L., Mi, M. T., & Zhu, J. D. (2017).

Capsaicin Supplementation Improved Risk Factors of Coronary Heart Disease in Individuals with Low HDL-C Levels.)

Capsaicin and Obesity

There is another study correlating capsaicin to weight loss which briefly speaks about the effects of capsaicin associated with lower prevalence of obesity. This study was conducted in a double-blind, randomized, placebo-controlled trial and indicated treatment of obese people.

Consumption of red peppers in breakfast decreased protein and fat intakes at lunch time, which might be an effect of the increased activity of the sympathetic nervous system. Capsaicin also activated brown adipose tissue activity which is associated with protection against obesity and other metabolic diseases.

These observations lead to a conclusion that capsaicin can be strategized to counteract obesity. Other beneficial effects of capsaicin can be seen in pain relief. It is used in its topical form as a part of postherpetic neuralgia.

(Zheng, J., Zheng, S., Feng, Q., Zhang, Q., & Xiao, X. (2017). Dietary capsaicin and its anti-obesity potency: from mechanism to clinical implications.)

Capsaicin and Cancer Cells

One of the most important discoveries involving capsaicin is that it happens to kill prostate cancer cells. The American Association for Cancer Research found that capsaicin induces oxidative stress along with ceramide accumulation in androgen-resistant cancer cells. Capsaicin exerts a biphasic effect, which in simple terms means that cells respond to different intensities of stimuli differently. It promotes growth at low doses and leads to apoptosis at doses over 200μM.

(Díaz-Laviada I. (2010). Effect of capsaicin on prostate cancer cells.)

Capsaicin and Cannabis Related Disorders

Another important use of capsaicin would be in the treatment of Cannabinoid

Hyperemesis Syndrome (CHS). CHS is characterized by continuous vomiting and nausea in addition to abdominal pain. It is caused due to long-term usage of the drug marijuana. An

experiment evaluating the causes of marijuana led to the conclusion that marijuana also interacts with TRPV1 receptors. In order to correct the reduced activity of gastric motility caused by binding of cannabis to TRPV1 receptors, topical capsaicin is provided for CHS diagnosed patients. Proposed trials and experiments on this thesis could prove to be useful as the statistics improve.

(Moon, A. M., Buckley, S. A., & Mark, N. M. (2018). Successful Treatment of Cannabinoid Hyperemesis Syndrome with Topical Capsaicin.)

Capsaicin and Gastrointestinal Issues

Apart from the benefits, there are also some major problems that capsaicin causes, such as diarrhea, nausea and vomiting, and even acid reflux. Eye exposure causes intense tearing, pain, conjunc-

tivitis, and blepharospasm.

Chilli influenced food causes irritation to the gastrointestinal tracts. They trigger bodily tissues and affect their ability to absorb fluids at a consistent rate, bringing about diarrhea. This lack of proper functioning might result in the passing of capsaicin without breakdown leading to a sensation of burning when we pass stools. Patients diagnosed with Irritable Bowel Syndrome

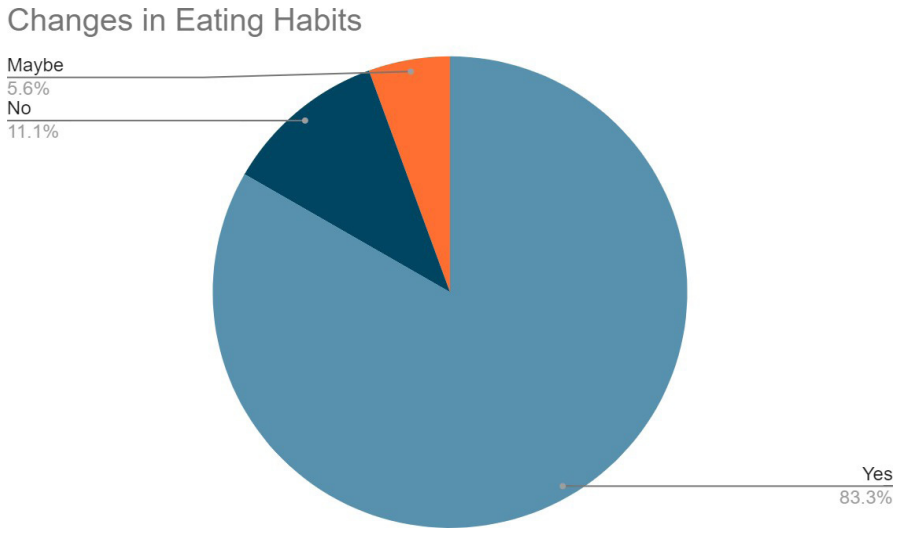
(IBS) are said to suffer immensely when they eat spicy food but a 6-week study resulted in decreased postprandial abdominal pain and increased the rectal sensory threshold. Thus, eating spicy food may cause digestive issues but nothing major.

Effect of Capsaicin in Cold Weather

Now that we have discussed the basic structure and benefits of capsaicin, let's look into the role capsaicin plays in our body in cold weather. We have conducted a survey specifically looking at the bodily needs of spiciness in food in chilly regions as compared to normal climate. We reached out to Indian students staying in hostels for approximately 3 months and analyzed their changes in diet after they came to Tbilisi.

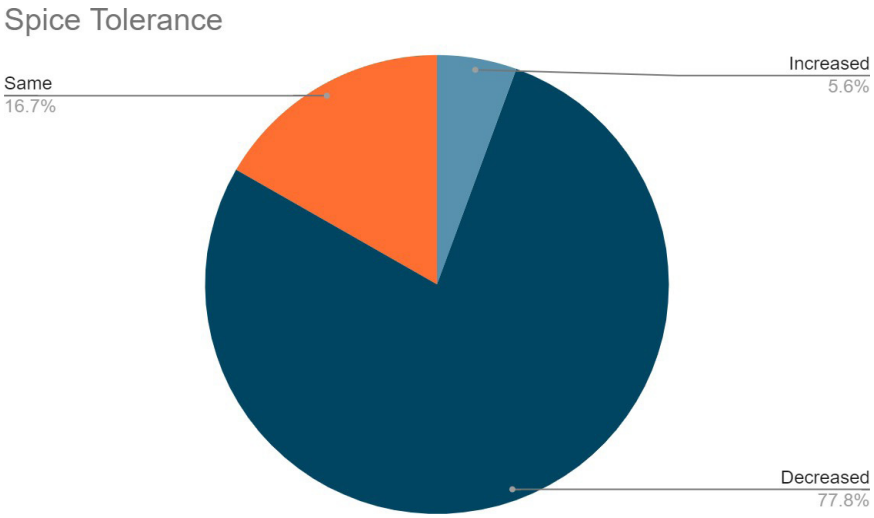
Statistical Analysis

A total of 18 students responded to the survey, 12 females and 6 males. Out of those, 83.3% of the students showed changes in eating habits. 13.33% of those students increased their appetite and 33.33% of them decreased their appetite. The remaining 53.34% started consuming less spicy food but still continued eating as many portions as before.

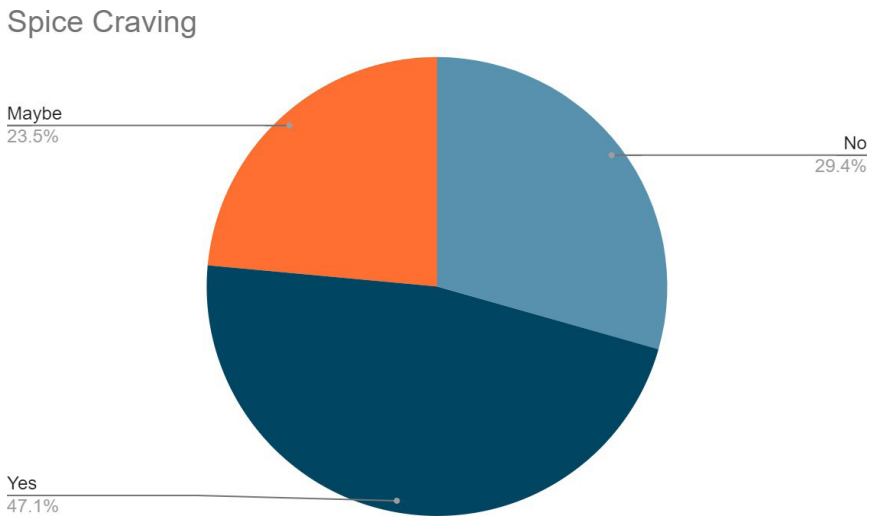


The spice tolerance of the students decreased immensely with the estimate of 77.8% over 5.6% saying it increased, and 16.7% saying it has been unaffected. Upon asking, many of the

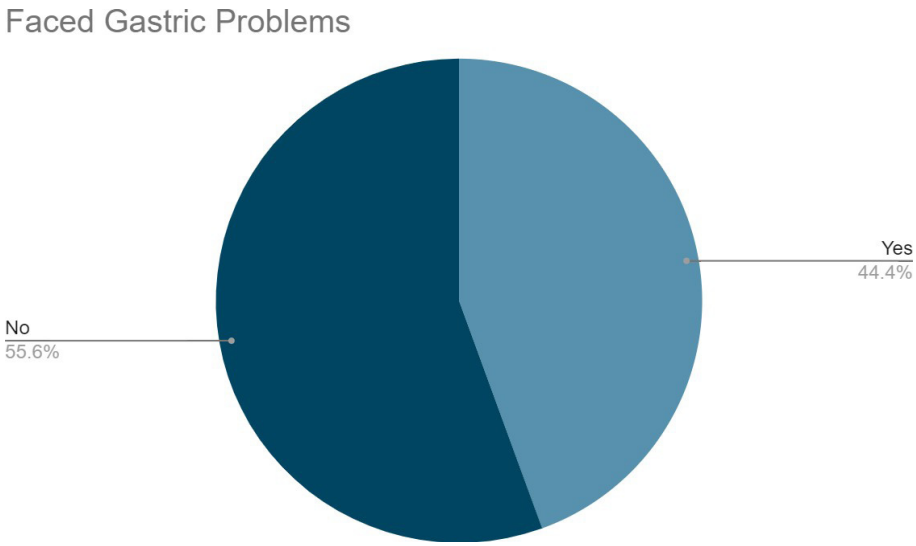
students said that they were unable to handle the spices present in the hostel food and that they preferred the bland but tasty Georgian food over it.



Having low tolerance for spice didn't stop the craving for it though. 47.1% of the students still crave spicy food, especially during cold days. The students claim to feel better when they have something spicy and hot when they feel cold.



Lastly, 55.6% of the students experienced gastric problems such as bloating, constipation,upset stomach, nausea, and even stomachaches.



CONCLUSION

Correlating the survey analysis to some knowledge about the cayenne pepper, we find out that the traditional Chinese herbalists consider chili peppers to be beneficial during winters.

Cayenne peppers, or capsaicin, is helpful in producing overall heat of the body. It stabilizes the circulatory system and brings forth warmth needed for the body. In the olden days, peppers were sprinkled on patients with cold and fever as the presence of capsaicin on the skin itself was

enough to produce heat. Spicy food obstructs vasoconstriction, and they also increase the activity of sweat glands and helps in losing internal heat. The above mentioned survey discusses the dietary change when students enter cold regions. Referring to the study based on the active role that spicy food or capsaicin plays in thermoregulation, we can say that in cold weathers it is better for students to eat spicy food.

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Social Media Addiction and its Influence on Medical Faculty Students

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ABSTRACT

The point of this review was to inspect the relationship of social media addiction with sleep quality and mental issues in clinical students.According to the examination model, hardships experienced by clinical understudies increment their online media enslavement, while they decline prosocial practices. Online media dependence in clinical understudies diminishes understudies' rest effectiveness . It is viewed as critical to lead further general wellbeing reads up for kids and teenagers connected with the dangers brought about by the over the top utilisation of innovation, the outcomes of online media fixation, measures to ensure psychological wellbeing, rest programs and the significance of sleep quality.

To find out the major causes of social media addiction and its influence on medical faculty students by using quantitative study.

The study was conducted by the source of google forms. For the survey, we gained access to the participants, by sending the questionnaire on social media sites, which includes Instagram, whatsApp, Facebook.

This study features the normal yet overlooked issue of social media addiction in medical faculty students. We suggest that educators and oldsters ought to be made aware of this issue with the help of school guides so the social media addicted students will be recognised and helped rather than endure quietly.

KEY WORDS :- Social media addiction, Academic performance, Negative impact on interpersonal relationship, Psychosocial Problems, Sleep quality, COVID19 outbreak

INTRODUCTION :-

Along with the exceptionally quick digitalisation in our age, the utilisation of web-based media is expanding in the world.The most widely used social networks are listed as: Facebook, YouTube, WhatsApp, FB Messenger, Instagram, WeChat, TikTok and QQ. At the point when the method of managing online media habit is inspected, one might say that these days, web-based media compulsion has stopped to be a standard issue and turned into an illness related with a global pandemic. Individuals all around the world can show excessive interest in online media and invest a lot of energy utilising web-based media. Hence, web-based media negatively affects the existences of millions of individuals on the planet. Addiction has been described as a global humanitarian crisis. It affects millions of people around the world has the subject of numerous media depiction and is potentially one of the most stigmatised conditions that there is.

LITERATURE REVIEW :-

Online media use by people has consistently expanded in ongoing years.Especially youngsters progressively utilise web-based media and the web, which is an effectively and quickly available method for mass correspondence, often for scholarly and different purposes. These devices are not

just a wellspring of information, their utilisation is likewise looked for different purposes like social collaboration, games and entertainment.The decline found in people's cooperation in public activity and the increment in the time they spend at home because of the COVID-19 pandemic have expanded the utilisation of online specialised devices.On the off chance that online media is the first decision that rings a bell in quite a while of fatigue, if it outweighs reality, on the off chance that it prompts interruption of day to day existence and carelessness of obligations, if it takes up an inordinate measure of time and makes uneasiness when it can't be gotten to, assuming the need is felt to continually share things, youths might be dependent via web-based media.

Online media influences on understudies who had created helpless associations with their moms, fathers, kin and companions. Online media keeps teenagers from framing close to home associations with their families and prompt climate. Online media use issue likewise causes frail family and companion connections in teenagers (Moreno and Uhls, 2019). It has been observed that youths with significant degrees of tricky web use and of web-based media use experience the ill effects of melancholy, dejection, lower rest quality and high uneasiness levels (Bányai et al., 2017; Alonzo et al., 2020; Fernandes et al., 2020; Orben et al., 2020). It has been recorded that unfavourable family relationship and lacking social help which may be caused or exacerbated by the pandemic related with tension, misery, and PTSD indications among adolescent during the pandemic (Guessoum et al., 2020; Gul and Demirci, 2021; Ertan et al., 2020).The variables were the main indicators for the negative psychological wellness results even with the pandemic over, which recommends that industrious interfamilial misfortune and intruded on friendly emotionally supportive networks could be the significant danger factors for the post-pandemic emotional wellness of medical students.

The pandemic over and life progressively getting back to business as usual, negative psychological well-being effect of the pandemic on youths diminished. Nonetheless, there still were a piece of teenagers encountering significant degree of psychological well-being symptoms, particularly manifestations of constant stressor-related problems like misery and PTSD. The huge relationship between COVID-19 related openness and the psychological wellness results support that the pandemic might have a drawn out adverse consequence on young adult emotional well-being even with the pandemic over. Risky cell phone use among clinical understudies has been viewed as an arising and broad general medical problem, prompting raised dangers of tension and rest issues (Chen et al., 2017). problematic cell phone use is conceptualised as an exorbitant example of cell phone use, connected to utilitarian impedance (Billieux et al., 2015). There has been aggregated proof documenting that the utilisation of blue light-emanating gadgets (for example cell phone) before rest brings about the interruption of the circadian clock causing intellectual incitement and rest unsettling influence (Jniene et al., 2019).

Rest unsettling influence has been connected to uneasiness, sadness and suicidality. One of the techniques to treat rest aggravations is the easing of manifestations of mental issues (Sher, 2020). A new longitudinal review directed among undergrad clinical understudies in India uncovered helpless rest expanded degrees of uneasiness and stress indications during the COVID-19 pandemic (Saraswathi et al., 2020).

Regardless of the mounting proof appearance the relationship of rest aggravation with nervousness and tricky cell phone use independently, research testing into the relationship that may exist between rest unsettling influence, tricky cell phone use, and tension is scant. Ring web based during the upheld COVID-19 home imprisonment, and to lIn spite of the fact that there has been experimental proof showing rest aggravation as a middle person between cell phone use before rest and mental mis-

ery (Lemola et al., 2015) and on the relationship between antagonistic youth encounters and mental wellbeing results and deficiency in capacities (Conway et al, 2020), no current writing has analysed rest unsettling influence as an arbiter in the connection between risky cell phone use and uneasiness. Since the episode of the COVID-19 pandemic, proof has gathered appearance a high pace of helpless rest quality, rest misfortune, and sleep deprivation among both the cutting edge clinical staff (Lai et al., 2020; Zhang et al., 2020) and the overall population (Cellini et al., 2020). There has not yet been research distributed on rest unsettling influence among clinical students during the COVID-19 pandemic. Clinical understudies have been found to experience expanding levels of uneasiness because of the unfavourable effect of the COVID-19 pandemic on their physical, passionate, and mental prosperity (Chandratre, 2020). It is subsequently basic that educational specialists and bleeding edge personnel give powerful and fitting direction to clinical understudies to manage their feelings and limit instructive misfortunes during the COVID-19 pandemic. The target of the current review was to investigate the relationship between nervousness, problematic cell phone use and rest unsettling influence among clinical understudies who were consider at the intervening impact of rest aggravation between hazardous cell phone use and tension.

During home repression in the beginning phase of the COVID-19 pandemic, tricky cell phone use might have been incompletely set off by the drawn out utilisation of cell phones as an effectively open gadget for web based learning and halfway by cell phones being unnecessarily utilised as a (mal-versatile) enthusiastic interaction to adapt to negative effect. One late longitudinal review directed among understudies in the US uncovered the relationship between COVID-19 news detailing, expanded degrees of tension, and expanded cell phone use (Huckins et al., 2020). Individuals will generally utilise cell phones to get data about COVID-19 and to oversee uneasiness in the midst of the uncommon pandemic. More openness to news about COVID-19, with a surge of COVID-19 disinformation and bogus reports barraging online media, may prompt expanded uneasiness and cell phone use (Elhai et al, 2020; Gao et al., 2020). In the mean time, social removing coming about because of authorised home repression during the early COVID-19 period may fuel understudies' feeling of dread toward passing up association with others, which may add to continually checking online media through cell phones and along these lines bringing about more elevated levels of nervousness (Li, 2020).

Empowering medical students admittance to the right data sources, open and straightforward sharing of information, arranging day by day schedules at home like dinners, rest and schoolwork, increasing proactive tasks, growing insightful web utilise that will uphold individual and social turn of events, empowering youths' re-visitation of the companion and school environment by establishing safe school conditions in as short a period as could be expected, making elective means and care groups for peer cooperation by diminishing seclusion and depression, and fitting helpful intercessions, for example, rest instruction and mediations can be recorded among these actions and insurances.Subsequently, it is prudent that mediations ought to be given to reduce uneasiness to clinical understudies during the pandemic. Additionally, clinical understudies ought to be educated regarding the negative effect of tricky cell phone use and the significance of solid rest propensities on alleviating tension. This may be accomplished by fusing instruction on defeating risky cell phone use and further developing solid rest propensities into the preclinical educational program of clinical schooling. Lessening hazardous cell phone use and working on the rest of clinical understudies may have a positive outcome on diminishing nervousness for the time being and the continuation of the propensities may have a positive long haul impact all through their vocations.

METHODOLOGY :-

The survey was conducted at Georgian American University. This survey was conducted during 2022. There were 60 medical students included in this study. The selected students were educated with regards to the motivation behind study and clarified with regards to the overall directions. Informed assent was taken before the review. The understudies were permitted to react voluntarily and protection. Students were given 21 questionnaire which comprised of personal data social media addiction inventory and including factors. This survey was taking place in google format and to students via WhatsApp, Facebook and Instagram. Personal data which included name, gender, age, nationality, education level. These questionnaire helps us to know the level of social media addiction in medical faculty students and according to studies we believe that there are some factors that influence students mental health as well as physical health.

Our survey included 60 participants. Out of these respondents, 25 females and 35 males took part in this survey. 48 of them were between the age of 18 to 21 and 10 of them were between 22 to 35 and 2 of them were below 18. We used quantitative method i.e. google forms to conduct this survey in April 2022. Our goal was to find out which age group of medical faculty students are facing more social media addiction.

In our survey we include close ended as well as open ended questions, some multiple choice questions, and so on so that people get more included and react to the review nobly.

RESULTS :-

Among participants, all were medical students. 90% were undergraduate and 6.7% were graduate and 3.3% were postgraduate in medical faculty. Number of male participants (58.3%) were more than female participants (41.7%). 80% people responded between age 18-21, 16.7%people responded between age 22-35 and 3.3% people responded between age below 18. From our survey 93.3% were Indian, 1.7% were Georgian, 3.3% were Lebanese and 1.7% were other. When we asked about they often think about social media when they are not using it and 46.7% ‘agree’, 26.7% , ‘Disagree’, 6.7% ‘strongly agree’ , 5% ‘strongly disagree’, 15% ‘ I do’t know’. It shows on greater extent people think about social media when they are not using it.

When asked about they often use social media for no particular reason interrupt whatever else they were doing when they feel the need to access social media and 50% ‘agree’, 28.3% ‘disagree’, 11.7% ‘strongly agree’, 8.3% says ‘I don’t know’ and 1.7% ‘strongly disagree’.

At the point when got some information about they feel associated with others when they utilise social media ,70% ‘agree’, 13.3% ‘disagree’, 8.3% ‘strongly disagree’, 5% ‘don’t know’ and 3.3% ‘ strongly agree’.

Whenever got some information about they lose track of how much they are using social media, 63.3% ‘agree’, 20% ‘disagree’, 11.7% ‘strongly agree’, 3.3% ‘strongly disagree’, 1.7% ‘don’t know’.

At whatever point got some data about the thought of not being able to access social media makes them feel distressed, 41.7% ‘disagree’, 25% ‘agree’, 16.7% ‘strongly disagree’, 10% ‘don’t know’ and 6.7% ‘strongly agree’.

We also asked about they enjoy spending time in social networking site, 71.7% ‘agree’, 13.3% ‘disagree’, 8.3% ‘don’t know’, 5% ‘strongly agree’, 1.7% ‘strongly disagree’.

We got some information about they don’t be aware of the time they spend navigating on social media, 55% ‘agree’, 30% ‘disagree’, 10% ‘strongly agree’, 5% ‘don’t know’.

We got to know about their preference of social media over their studies, 43.3% ‘disagree’,

26.7% ‘strongly disagree’, 18.3% ‘agree’, 6.7% ‘don’t know’, 5% ‘strongly agree’.

At whatever point we got to know their preference of video games over outdoor games, 60% says No, 20% says Yes, 20% says Maybe.

We move on to the question about how often do they lose sleep due to late night log-ins, 41.7% says rarely, 20% says occasionally, 18.3% says frequently, 10% says does not apply, 5% says often, 5% says always.

We continue on toward the asking about do they prefer social media over family time, 86.7% says No, 8.3% says Yes and 5% says Maybe.

We forge ahead about have they neglected other important activities (eg. university examination, assessments) to be on social media, 76.7% says No, 10% says Yes and 13.3 says Maybe.

We got to be familiar about how often does their study performance or productivity suffer because of the internet, 40% says rarely, 30% says occasionally, 11.7% says frequently, 10% says always and 8.3% says often.

We got to be aware about how often do they find their self saying “just a few more minutes” when online, 25% says occasionally, 21,7% says rarely, 18.3% say often, 15% says does not apply, 10% say frequently and 10% says always.

At whatever point got some data about how often do they choose to spend more time online over going out with others, 40% skas rarely, 26.7% says does not apply, 18.3% says occasionally, 8.3% says frequently, 5% says often and 1.7% says always.

We got to know about how often do they feel depressed, unmotivated, or nervous when they are offline, which goes away once they are back online, 36.7% says does not apply, 33.3% says rarely, 20% says occasionally, 5% says frequently, 5% says always.

DISCUSSION :-

Social media use by people has consistently expanded in late years.Especially youngsters progressively utilise social media and the web, which is an effectively and quickly available method for mass correspondence, habitually for scholastic and different purposes(Singh & Barmola, 2015). These instruments are not only a wellspring of data, their utilisation is likewise looked for different purposes, for example, social collaboration, games and entertainment.The decline found in people’s association in public activity and the expansion in the time they spend at home because of the COVID-19 pandemic have expanded the utilisation of online specialised tools(Fernandes et al., 2020; Kashif & Aziz-Ur-Rehman, 2020; Orben et al., 2020; Scott et al., 2019).The consistent expansion in web and web-based media habit among youngsters lately has effectively been reported.it can be said that understudies participating in the review were in danger of social media use issue. Notwithstanding, one more significant finding of the review is that while one out of ten understudies viewed themselves as online media addicts, around 3/4 of them thought about that society was addicted to social media. The present circumstance indeed shows that the understudies had mindful ness in regards to online media fixation, yet that they didn’t acknowledge dependence for themselves.

In the review, it was uncovered that social media habit scores were higher in understudies who had helpless associations with their moms, fathers, kin and companions. Online media keeps youths from framing close to home associations with their families and prompt climate. Online media use issue additionally causes powerless family and companion connections in adolescents.It has been observed that young people with undeniable degrees of tricky web use and of web-based media use experience the ill effects of wretchedness, dejection, lower rest quality and high tension levels.In a few

examinations, a genuinely huge relationship between's web-based media use and juvenile rest designs, particularly postponed rest beginning, has been determined.This circumstance might be the consequence of changes in rest propensities for teenagers due to staying at home on account of the Covid pandemic. Additionally, in a review completed in Italy, not set in stone that because of the confinement measures taken against the Covid, a major deferral in youngsters resting/waking timetables and an increment in rest issues happened in all age groups.In another review, it was uncovered that issues happened in teenagers during the pandemic, for example, delay in nodding off, decrease long of rest, respiratory weakness during rest, and sluggishness during the day, and that rest schedules were upset.

Proof recommends that risky utilisation of gaming, the web, and online media among teenagers is on the ascent, influencing numerous psycho-passionate areas. Also, inordinate utilisation of computerised exercises and cell phones might bring about different mental and actual issues, like conduct fixation, intellectual debilitation, and passionate distress.In expansion, it not set in stone that the challenges experienced by clinical understudies (enthusiastic issues, direct issues, consideration shortfall and hyperactivity, and companion issues) increment online media habit (H1)(Fernandes et al., 2020; Kashif & Aziz-Ur-Rehman, 2020; Orben et al., 2020; Scott et al., 2019). It is accentuated that spending quite a while on the Internet expands the chance of openness to hazards and neurotic inclinations, and that the time spent utilising web-based media is destructive to mental health.It is realised that during the pandemic, missing the day by day schedules that college carries and nonappearance of time enjoyed with peers causes youths to encounter an incredible number of issues. These issues can be recorded as expansion in dull time spent at home, upset rest propensities, expanded openness to screens, escalated web use, expanded dietary patterns, diminished actual work, expanded consideration and fixation issues, loss of scholastic accomplishment because of decreased inspiration, expanded homegrown struggles, failure to adapt to negative feelings like hostility, fatigue, outrage and uneasiness, expanded passionate movement, and disintegration of feeling guideline skills.In backing of the writing, in this review, as well, it was seen that particularly during these troublesome occasions that we have been going through, the clinical understudies' social connections were debilitated, their college accomplishment diminished, the recurrence and length of their online media utilise expanded, and there was an increment in the mental issues and web-based media habit that they encountered. The present circumstance uncovers that teenagers are in danger biopsychosocially as far as sound turn of events and gaining character, and concerning different dangers (digital brutality, corpulence, forlornness, wretchedness, tension, and so forth) that the advanced climate will bring.

The development of a healthy generation genuinely should instruct teenagers about cognisant web-based media and PDA use and to accentuate the significance of rest propensities (Gica 2020).

CONCLUSION :-

As indicated by study, it is realised that rest is vital for young adult wellbeing, still up in the air that expanded web-based media fixation in the understudies in the example bunch expanded the potential for the rise of wellbeing and rest issues. It ought to be borne at the top of the priority list that the social separating, suggestions to remain at home, and distance schooling executed because of the pandemic can prompt more noteworthy adaptability in resting and waking occasions, and can cause an increment in the utilisation of innovation for significant stretches and in online media enslavement. It was seen that online media habit in understudies was emphatically related with direct and passionate issues, consideration deficiency/hyperactivity, peer issues and helpless rest quality, and adversely connected with prosocial practices and rest productivity. In light of this, school wellbeing medical

attendants should plan and execute fitting intercession strategies as a team with other medical services faculty (analyst, college advisors, social specialists, and so on) Empowering clinical understudies' admittance to the right data sources, open and straightforward sharing of data, arranging day by day schedules at home like dinners, rest and schoolwork, expanding proactive tasks, extending wise web utilise that will uphold individual and social turn of events, empowering teenagers' re-visitation of the friend and college climate by establishing safe college conditions in as short a period as could be expected, making elective means and care groups for peer communication by decreasing disengagement and forlornness, and suitable remedial intercessions, for example, rest training and mediations can be recorded among these actions and insurances.

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QUESTIONNAIRE :-

1) Name

2) Gender

- male
- female
- other

3) Age

- 18-21
- 22-35
- 36+

4) Nationality

- indian
- georgian
- other

5) Educational level

- undergraduate
- graduate
- Postgraduate

6) I often think about social media when I am not using it

- Agree
- Disagree
- Strongly Agree
- Strongly Disagree
- I don't know

7) I often use social media for no particular reason interrupt whatever else I am doing when I feel the need to access social media

- Agree
- Disagree
- Strongly Agree
- Strongly Disagree
- I don’t know

8) I feel connected to others when I use social media

- Agree
- Disagree
- Strongly Agree
- Strongly Disagree
- I don’t know

9) I lose track of how much I am using social media

- Agree
- Disagree
- Strongly Agree
- Strongly Disagree
- I don’t know

10) The thought of not being able to access social media makes me feel distressed

- Agree
- Disagree
- Strongly Agree
- Strongly Disagree
- I don’t know

11) I enjoy spending time in social networking sites.

- Agree
- Disagree
- Strongly Agree
- Strongly Disagree
- I don’t know

12) I don’t be aware of the time I spend navigating on social media.

- Agree
- Disagree
- Strongly Agree
- Strongly Disagree
- I don’t know

13) I prefer social media over my studies.

- Agree
- Disagree
- Strongly Agree
- Strongly Disagree
- I don’t know

14) Do you prefer Video games over Outdoor games?

- Yes
- No

15)How often do you lose sleep due to late-night log-ins?

- Does not apply
- Rarely
- Occasionally
- Frequently
- Often
- Always

16) Do you prefer social media over family time?

- Yes
- No

17) Have you neglected Other important activities (e.g. university examinations, assessments to be on social media?

- Yes
- No

18) How often does your study performance or productivity suffer because of the Internet?

- Does not apply
- Rarely
- Occasionally
- Frequently
- Often
- Always

19) How often do you find yourself saying “just a few more minutes” when online?

- Does not apply
- Rarely
- Occasionally
- Frequently
- Often
- Always

20) How often do you choose to spend more time online over going out with others?

- Does not apply
- Rarely
- Occasionally
- Frequently
- Often
- Always

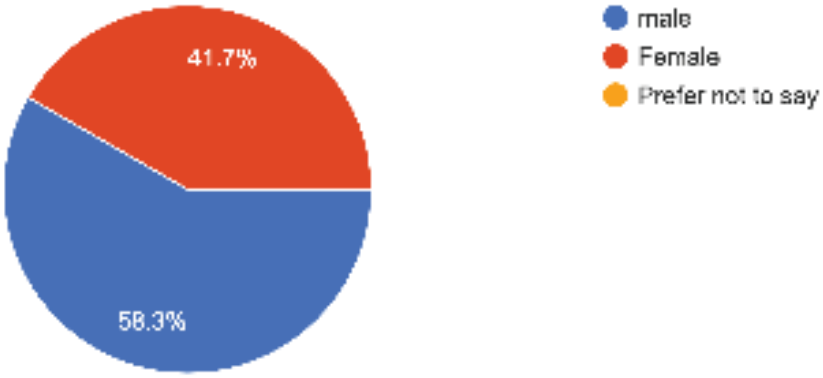
21) How often do you feel depressed, unmotivated, or nervous when you are offline, which goes away once you are back online?

- Does not apply
- Rarely
- Occasionally
- Frequently
- Often
- Always

CHARTS:-

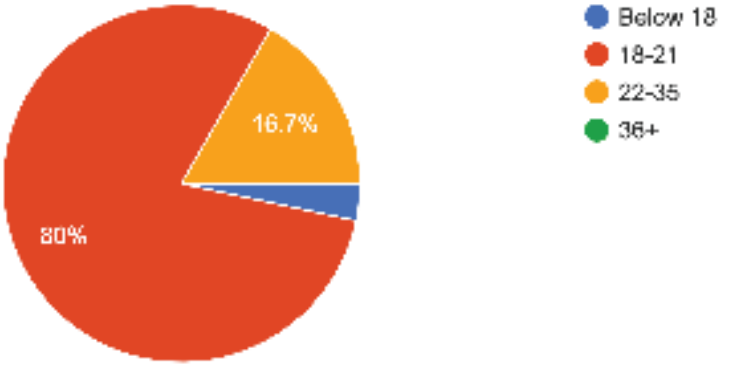
Gender

60 responses



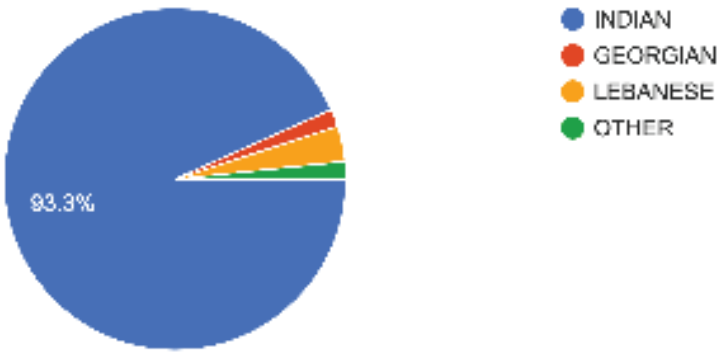
Age

60 responses



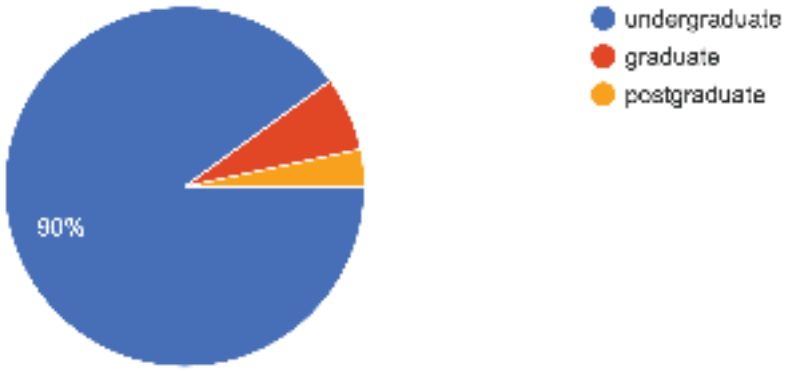
Nationality

60 responses



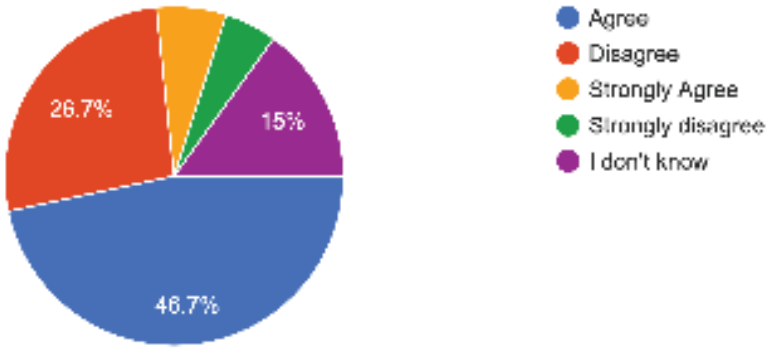
Education level

60 responses



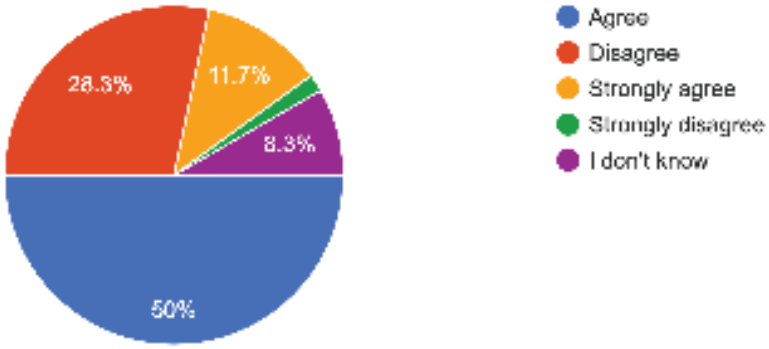
I often think about social media when I am not using it

60 responses



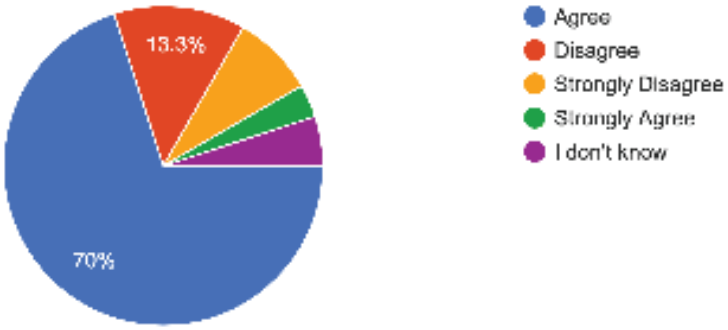
I often use social media for no particular reason interrupt whatever else I am doing when I feel the need to access social media

60 responses



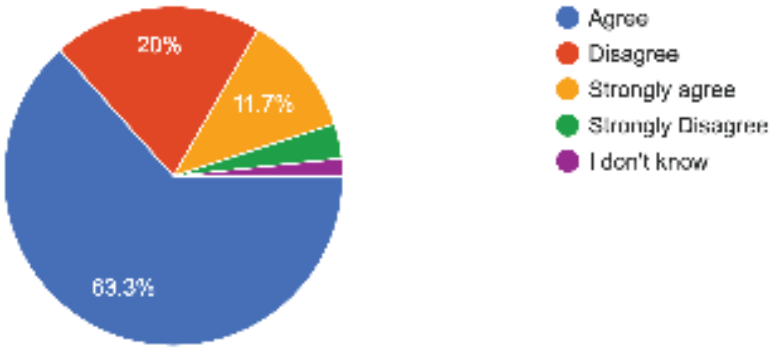
I feel connected to others when I use social media

60 responses



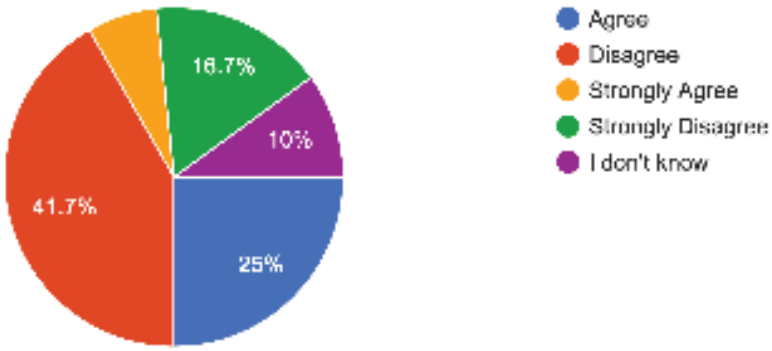
I lose track of how much I am using social media

60 responses



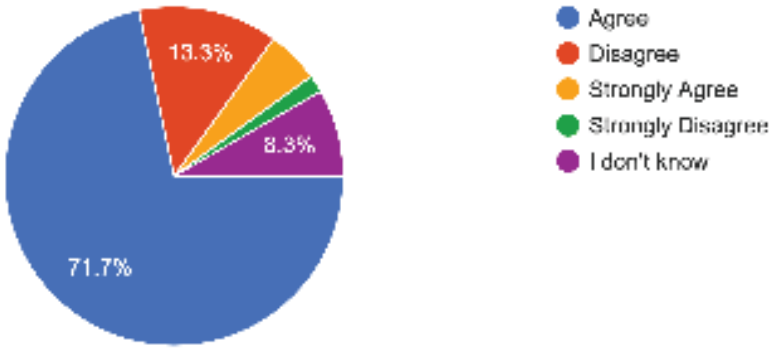
The thought of not being able to access social media makes me feel distressed

60 responses



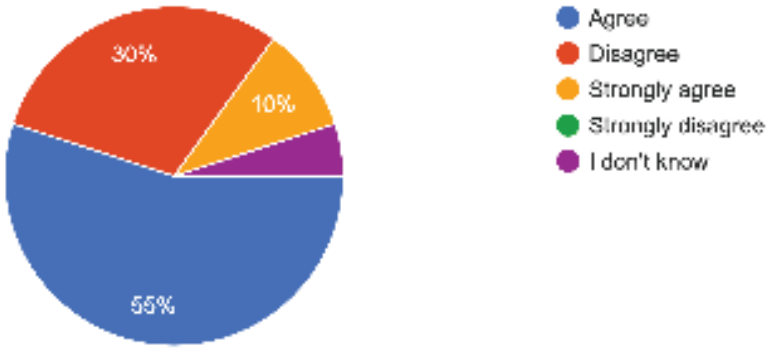
I enjoy spending time in social networking sites.

60 responses



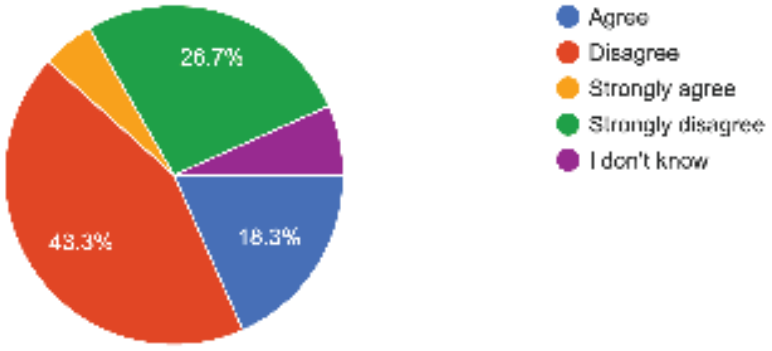
I don't be aware of the time I spend navigating on social media.

60 responses



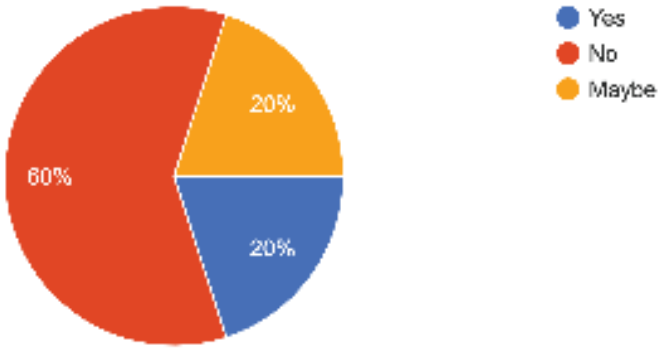
I prefer social media over my studies.

60 responses



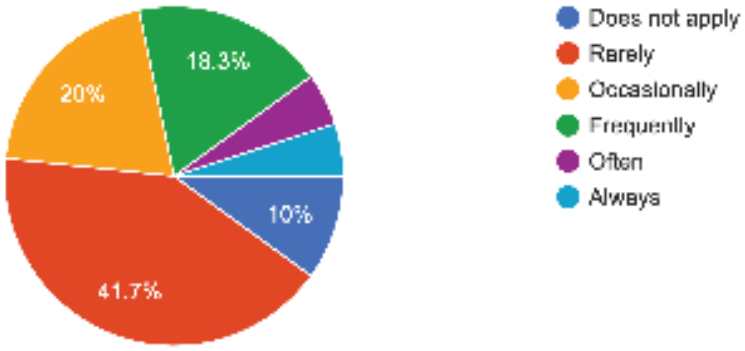
Do you prefer Video games over Outdoor games?

60 responses



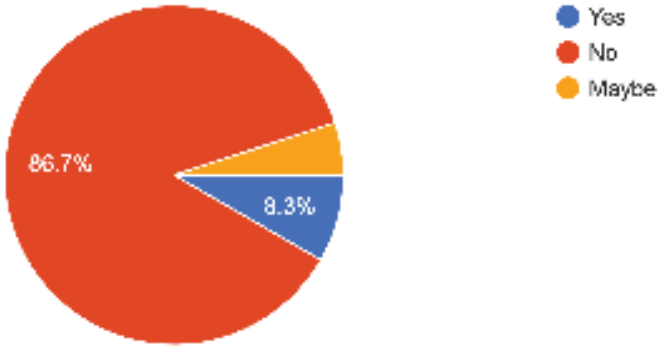
How often do you lose sleep due to late-night log-ins?

60 responses



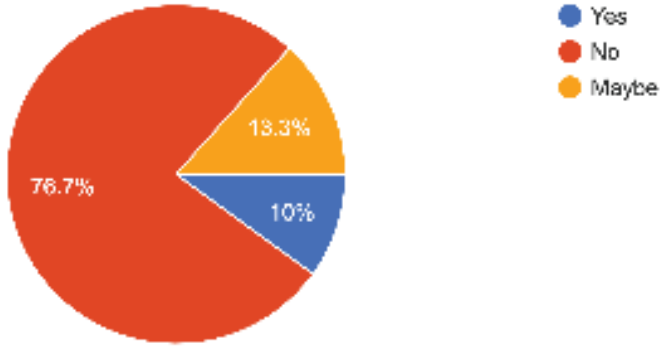
Do you prefer social media over family time?

60 responses



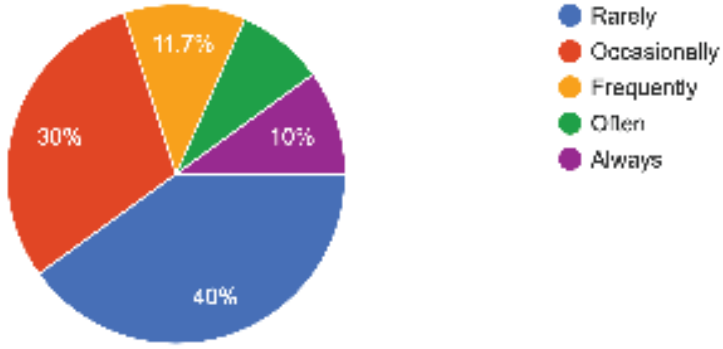
Have you neglected Other important activities (e.g. university examinations, assessments to be on social media?

60 responses



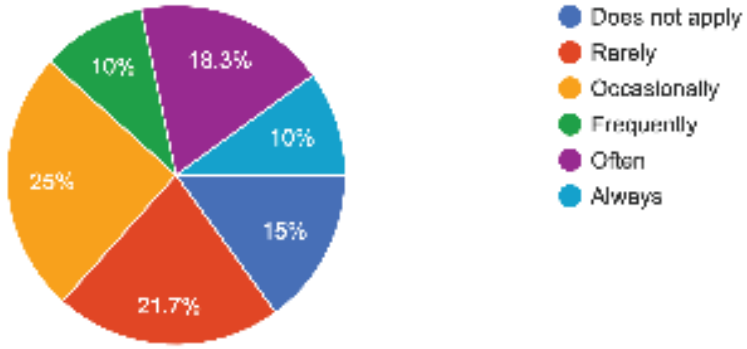
How often does your study performance or productivity suffer because of the Internet?

60 responses



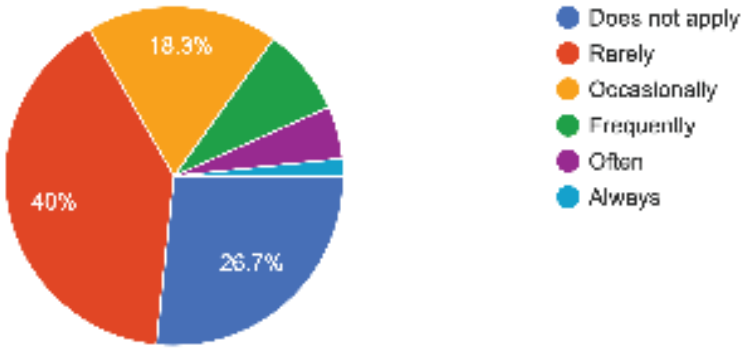
How often do you find yourself saying "just a few more minutes" when online?

60 responses



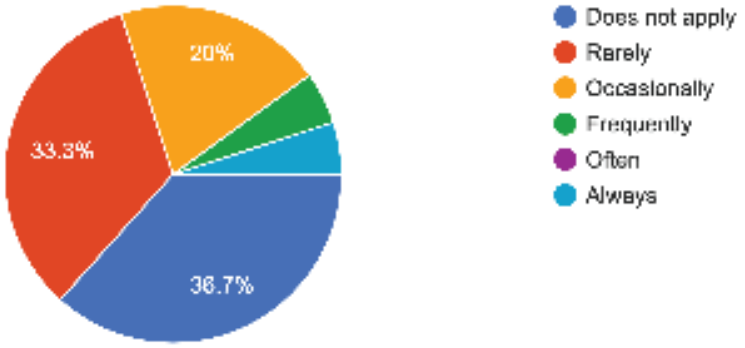
How often do you choose to spend more time online over going out with others?

60 responses



How often do you feel depressed, unmotivated, or nervous when you are offline, which goes away once you are back online?

60 responses



How Does Excessive Salt Intake Affects our Body and Hypertension

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GAU-Georgian American University;
Supervisor: Lolita Shengelia

ABSTRACT

Dietary salt intake and related complications was our aim to find the relation between them. As hypertension is one of the significant danger elements of mortality, hypertension is considered as a main factor for about 13% of the deaths on the planet. The aims of this study was to investigate that Does dietary salt intake causes cardiac problems, kidney stone and mainly hypertension ? Are there any differences between iodised salt and non-iodised salt with hypertension and other diseases ? Our survey included 92 participants. Out of these respondents, 60 males and 31 females & 1(he or she do not wanted to open her identity) other took part in this survey. We used Webanketa forms to conduct our survey in April-May 2022. We thereby had aimed to produce generalize knowledge about who consumed salty food, who have diseases, who exercised and what do they prefer, do they have any disease (hypertension, cardiac problems, kidney problems). We used non-probability sampling. Study says that half of the participants says that they add additional salt in food whereas 19.57%never add salt in food and 9.78 % add salt regularly. Studies shows that 68.48% population says that food which is made at home is sometimes salty. 46.6% participants family do suffer from or have suffered from hypertension. 14.8% participants suffer from hypertension. High amount of salt intake is main cause of hypertension which further lead to the complications of cardiac problems and kidney failure. Hypertension among male participants was more compared to female participants. Males have more prevalence of hypertension than females. To prevent risk factors we should recommend to exercise daily which can also help to reduce the risk factors such as hypertension, cardiac diseases and kidney relate problems .

Keywords: Hypertension , Iodized , Dietary , Cardiac problem , Prevalence , Exercise , Kidney related problems.

Introduction

Hypertension or high blood pressure is one of the most common problem in the world. Also, excessive amount of salt can have negative impact on our body. As one of the significant danger elements of mortality, hypertension is considered as a main factor for about 13% of the deaths on the planet and furthermore represents 12.1% of deaths in low-and moderate-pay nations.

The aims of this study was to investigate that : 1) Does dietary salt intake causes cardiac problems, kidney stone and mainly hypertension, and 2) Are there any differences between iodised salt and non-iodised salt with hypertension and other diseases ?

Literature review

Now a days, people have adapted or made an habit of adding salt in their meals to make food tasty but don't know the mechanism behind this or how the excessive salt affects our body. We can say that salt is the silent killer because salt which we eat has sodium and chloride in it and excessive

sodium increases the blood pressure which many people don't even realize it. Notwithstanding, adding salt as a flavour to food is really a social, mental, routine, and thusly conduct matter (C. A. M. Anderson, L. J. Appel, N. Okuda et al, pp. 736–745, 2010). It occurs in two stages: planning food and eating at the table. Consequences of studies have shown different determinants in regards to the expansion of salt while getting ready food or at the table (C. A. Grime, L. J. Riddlle, and C. A. Nowson, pp. 256–260, 2010). In the Eastern Mediterranean locale, hypertension alone records for 26% of deaths, while different confusions like cardiovascular disease and stroke, joined, lead to 31% of death (O. M. N. Khatib and M. S. El-Guindy 2005, World Health Organization (WHO), Geneva, Switzerland, 2009). Hypertension and its inconveniences are among the significant medical issues in numerous social orders especially, creating ones (World Health Organization (WHO), Global Status Report on Non-communicable Diseases 2014, O. M. N. Khatib and M. S. El-Guindy, 2005). Various investigations are demonstrative of high-salt intake among patients with hypertension (I. J. Brown, I. Tzoulaki, V. Candeias, and P. Elliott, pp. 791–813, 2009, M. E. Corne´lio, M. C. B. J. Gallani, G. Godin, R. CM. Rodrigues, W. Nadruz Jr., and R. D. R. Mendez, pp. 334–344, 2012). A 30% decrease in salt admission is a global and a public objective to forestall and to control noncommunicable infection, by the year 2020 (World Health Organization (WHO), Global Action Plan for the Prevention and Control of Non-communicable Diseases 2013–2020).

Sodium which is present in the salt mainly holds the fluid into the tissues or interstitial tissues ,we see fluid retention due to that there is increase in the blood pressure .Now a days, many doctors prefer low salt diet to the hypertensive patients. Excessive salt (sodium) admission isn't just liable for hypertension, cardiovascular disease and strokes yet in addition related straightforwardly with different sicknesses like osteoporosis, nephrolithiasis, and gastric disease (M. R. Joffres, N. R. C. Campbell, B. Manns, and K. Tu, pp. 437–443, 2007, N. R. Cook, J. A. Cutler, E. Obarzanek et al, p. 885, 2007). Thusly, control of salt admission is considered as a critical component for a sound and profoundly qualified life. It is accepted that devouring high-fiber consumes less calories joined with diminished salt admission can assume a basic part in avoidance of hypertension and its lethal cardiovascular problems, just as diminishing clinical expenses (N. J. Aburto, S. Hanson, H. Gutierrez et al, 2013). It is found to be associated with age, education subcategories, alcohol consumption status, and being overweight or obese (S. P. Manimunda, A. P. Sugunan, V. Benegal, N. Balakrishna, M. V. Rao, and K. S. Pesala, pp. 287–293, 2011). The prevalence of hypertension was found to have increased with age among both genders, particularly after the age of 45 years (S. Ghosh, S. Mukhopadhyay, and A. Barik, pp. 201,2010). As the one gets aged, the proportion of hypertensive patients in the different age groups has also been increased.

Even food such as coffee, meat ,bread, cereals which we eat daily contains high amount of salt in it which is harmful for us. There are iodized salt which contain iodine in it which is important for thyroid gland in making hormones and non-iodized salt. Also, there are different types of salts based on extraction like sea salt, rock salt ,etc. Mainly Sea salt is used everywhere which is made by the process of evaporation and contains very small amount of iodine. In many social orders, individuals are not normally mindful of the normally happening salt in supplements, like bread, milk, meat, and furthermore other fabricated items (C. Johnson, S. Mohan, K. Rogers et al, p. 144, 2017). In this manner, they add salt to the food sources which as of now contain adequate measure of salt. The sum is high contrasted with the World Health Organization (WHO) suggestions of day by day salt admission for solid people (<5 g salt, identical to 2 gr sodium) and patients with hypertension (<4 g salt, comparable to 1.5 gr sodium) (US Department of Agriculture and US Department of Health and Human

Services, 2010). Among the profoundly prescient of the sodium consumption factors shows restraint information on supplements containing salt just as their view of ailment (A. Kamran, L. Azadbakht, G. Sharifirad, B. Mahaki, and A. Sharghi, 2014).

Methodology

Our survey included 92 participants . Out of all these respondents, 60 males and 31 females 1 0ther took part in this survey. Most of the participants were from Georgian American University. Age group from 18 years old to 70 years old participated in the survey . We used Webanketa forms to conduct our survey started from April and completed in May, 2022.We in our survey, included close ended questions, multiple choice questions, so that people get more involved and respond to the survey . We thereby had aimed to produce generalize knowledge about who consumed salty food, who have diseases ,who exercised and what do they prefer, do they have any disease (hypertension, cardiac problems, kidney problems) which was our main aim in our research. We used non-probability sampling. We perform cross sectional quantitative study process. Sampling frame was not specific, anyone could take part in the survey, conducted in Webanketa forms pattern. For the survey, we gained access to the participants, by sending the questionnaire on social networking sites, such as WhatsApp, Instagram and Facebook. Before analysis the gathered data was prepared, by using 'outlier labelling rule' the dataset was checked for missing data and outliers. Data analysis is done by using excel sheet. So, this is how we collected our data from different countries with different race, gender , age.

Data Analysis

Among 92 Participants, 3 (3.4%) were 18 years old , 4 (4.5%) were 19 years old, 11 (12.5%) were 21 years old, 6 (6.8%) were 22 years old, 4 (4.5%) were 23 years old, 5 (5.7%) were 25 years old, 1 (1.1%) was 27 years old, 1 (1.1%) was 28 years old, 1 (1.1%) was 29 years old, 1 (1.1%) was 33 years old, 1 (1.1%) was 43 years old, 2 (2.3%) were 45 years old, 2 (2.3%) were 46 years old, 1 (1.1%) was 48 years old, 1 (1.1) was 49 years old, 7 (4.4%) were 50 years old and so on. Ranging from 18 years old to 70 years old participants.

Among 92 participants, there are 65.22% Male participants and 33.7% Female participants who participate in the research (annex, chart 1).

Studies shows that 68.48% population says that food which is made at home is sometimes salty,7.61% population says food is always salty for them and 23.91% of participants says that food is not at all salty (annex, chart 2).

Study says that half of the participants says that they add additional salt in food whereas 19.57%never add salt in food and 5.43% add salt regularly (annex, chart 3).

From chart no.4 , we can say 70.65% participants uses Iodised salt in there food , 22.83 % don't know which salt they use and only 6.52% uses non-iodised salt (annex, chart 4).

From chart no.5, we can say that 45.65% of participants says that outside food is not salty at all , but 17.39% says that food which we brought from outside is salty and others (36.96%) are not sure(annex, chart 5).

According to chart no. 6 , 58.7% participants don't have hypertension whereas 1.09% have and 40.22% don't know whether they have hypertension or not (annex, chart 6).

Out of 100% , 51.09% family of participants doesn't suffer from or have High blood pressure , 41.3% participants family do suffer from or have suffered from hypertension and others don't know

(annex, chart 7). From Chart No. 8, 90.22% participants don't have any cardiac problem ,only 7.61% of participants have and others are not sure. From chart no.9 , we can conclude that 84.78 % of participants don't have kidney problem or kidney stones but 11.96% have kidney stones and others are not about it. We can conclude that 29.35% of participants urinate more than 5 times, 22.83% urinate 5 times, 29.35% urinate 4 times, 11.96% urinate for 3 times (annex, chart 10). From Chart no. 11, we can say that some participants(3.26%) face headache after eating too much salty food and 90.22% participants says that they don't suffer from headache and others are not sure. From chart no. 12, 61% of participants exercise sometimes, 26.09% exercise daily, 13.04% don't exercise. From chart no. 13, 53.26% of participants feel medium sweaty while exercising 32.61% feel high sweaty while exercising 11.96% feel low sweat while exercising 2.17% participants feel no sweat while exercising.

Discussion

In our analysis 65.22% participants were male 33.7% were female, 1.09% participants were suffering from hypertension , 40.22% participants don't know that they are suffering from hypertension or not. 58.7 % participants were not suffering from hypertension. 11.3% were male who were suffering from hypertension and 3.4 % were females suffering from hypertension . As we are comparing individual gender data we can see that in males 17.2% were suffering from hypertension 10% of females were suffering from hypertension . We have also asked about iodised salt and non-iodised salt, we found that 70.65% participants were using iodised salt, while 6.52 % participants were using non iodised salt. While comparing non iodised salt intake with hypertension we seen that 10% people who were using iodised salt were suffering from hypertension. While 37.5% people who were using non iodised salt were suffering from hypertension.

1. High amount of salt intake is main cause of hypertension which further lead to the complications of cardiac problems and kidney failure.
2. Hypertension among male participants was more compared to female participants. Males have more prevalence of hypertension than females
3. Participants who used iodised salt in their diet were having less prevalence as compared to non-iodised salt in their diet. Also the knowledge of the amount of the salt is not known in the participants.
4. Family history of hypertension also increases the prevalence of hypertension in the people.
5. Age also increases the prevalence of the cardiac problems, kidney problems and also hypertension.
6. Frequent urination is seen in the participants who were suffering from hypertension and had more salt intake
7. Headache was also seen if the participants were having more amount of salt in their diet.

Conclusion

Different salt intake pattern were seen in the participants according to the age and gender. Hypertensive patients were taking high amount of salt in their diet, also some of the participants were adding table salt in their food. Also, males have more prevalence of hypertension than females. We can see that due to excessive salt intake ,people face frequent urination, headache ,also cardiac problem , and kidney problems. Those who are aged i.e. above 50 years old are mainly hypertensive with cardiac problems. From the research , we can conclude that it is necessary to provide education about

salt intake and minimum salt use in diet. People should be educated about minimum usage of dietary salt intake and tell them about the risk factors of high dietary salt intake and adding table salt in the food. To prevent risk factors we should recommend to exercise daily which can also help to reduce the risk factors such as hypertension, cardiac diseases and kidney relate problems . Iodised salt should be suggested in the diet. Plenty amount of water should be intake daily which removes toxic fluid and excessive salt from the body.

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Annexure 1

Questionnaire

AGE:

GENDER

- Female
- Male
- Other
- Prefer not to say

1. At home, does your food taste salty?

- Always
- Sometimes
- Never

2. How often do you add salt in food at the table?

- Always
- Sometimes
- Never
- Don’t know

3. Which salt do you use in cooking ?

- Iodised Salt
- Non Iodised salt
- Don’t know

4. Does the food you eat outside (hotels, street food) is salty?

- Yes
- No
- Maybe

5. Do you suffer from or have suffered from: High blood pressure ?

- Yes
- No
- Don’t know

6. Does anyone from your family suffer from or have suffered from: High blood pressure ?

- Yes
- No
- Don’t know

7. Do you suffer from or have suffered from: Heart(Cardiac) Problems?

- Yes
- No
- Don’t know

8. Do you suffer from or have suffered from: Kidney Stones?

- Yes
- No
- Don’t know

9. How frequently do you urinate in a day?

- 1 time
- 2 times
- 3 times
- 4 times
- 5 times
- More than 5 times

10. Do you suffer from Headache after eating salty food?

- Yes
- No
- Don’t know

11. Do you Exercise?

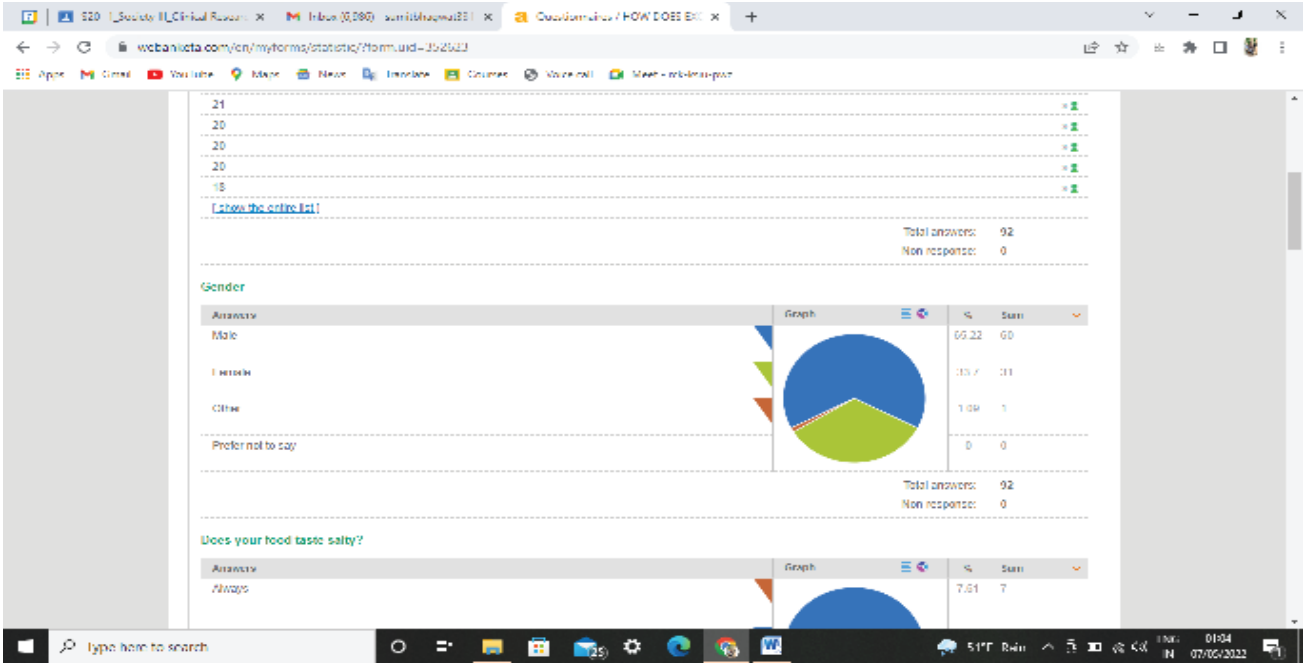
- Daily
- Sometimes
- Never

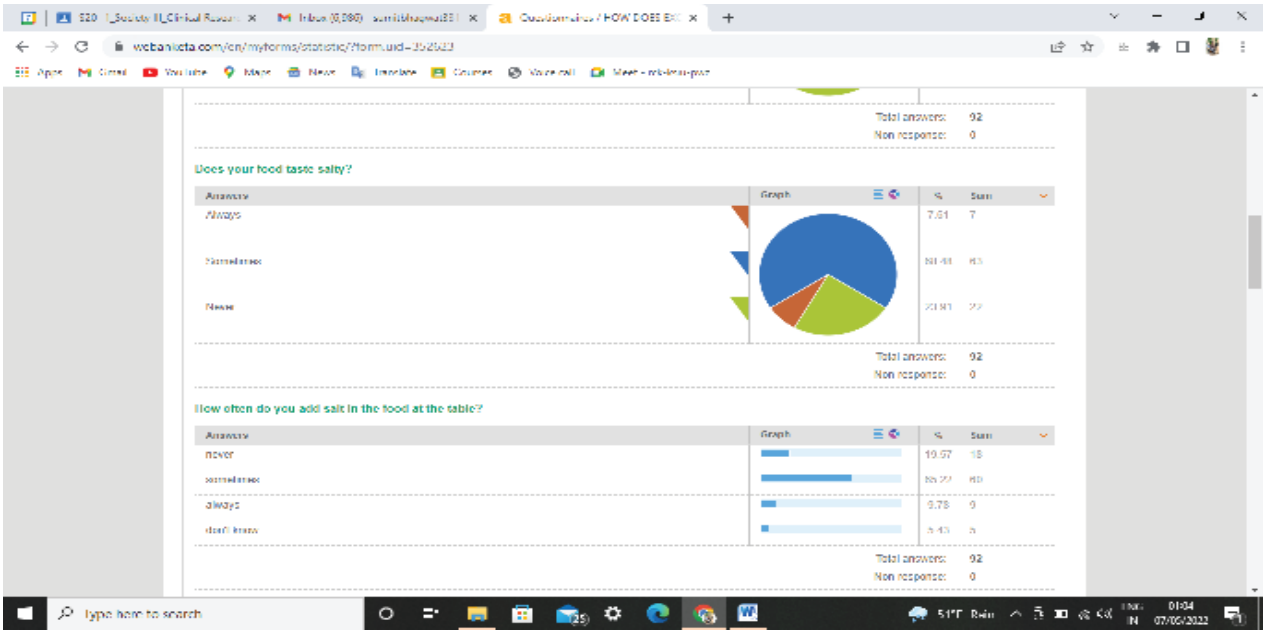
12. How sweaty do you feel while exercising?

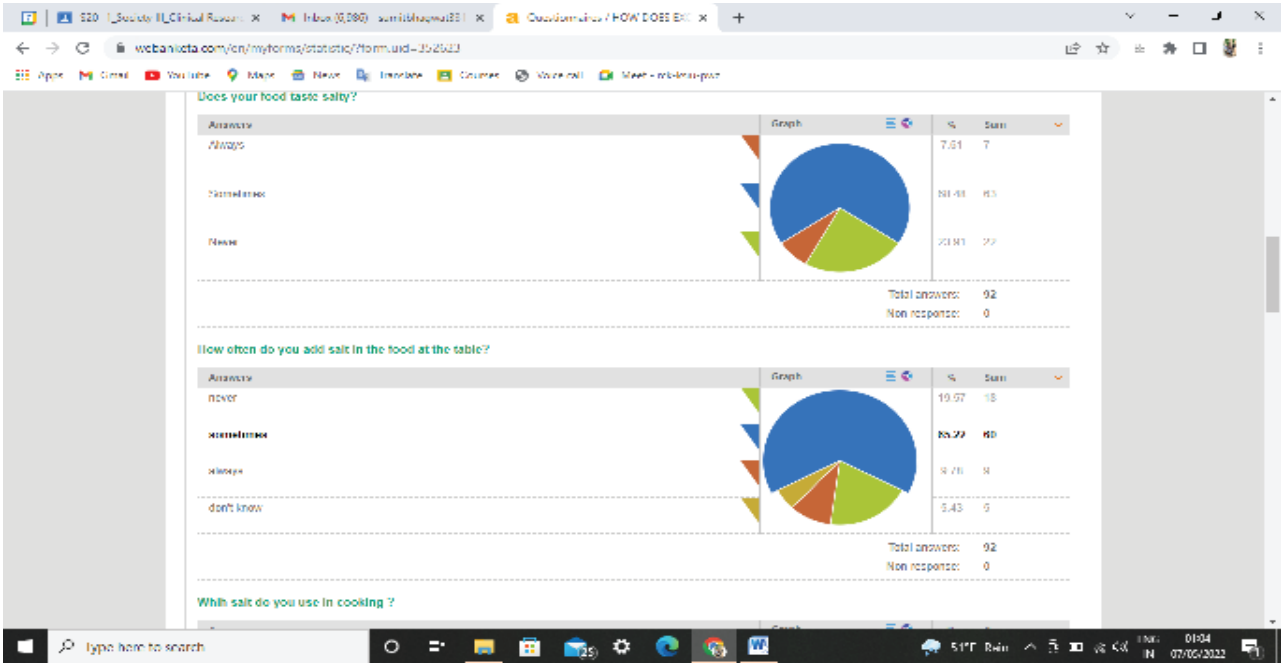
- High
- Medium
- Low
- No sweat.

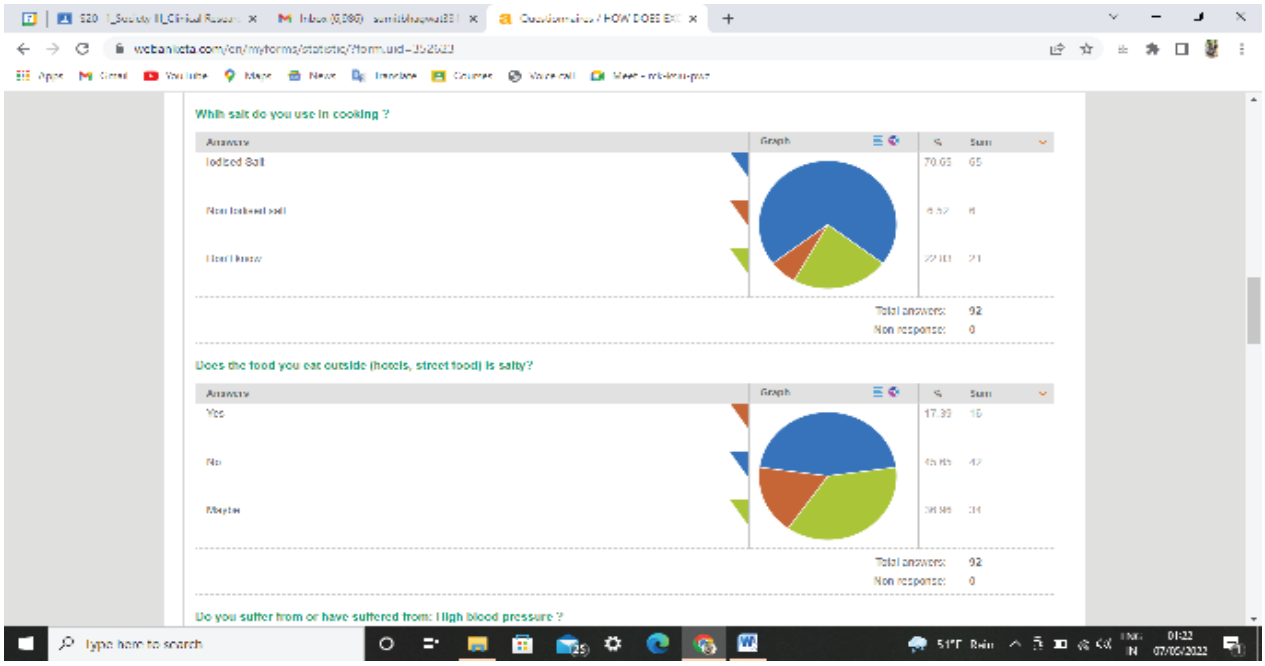
Annex 2

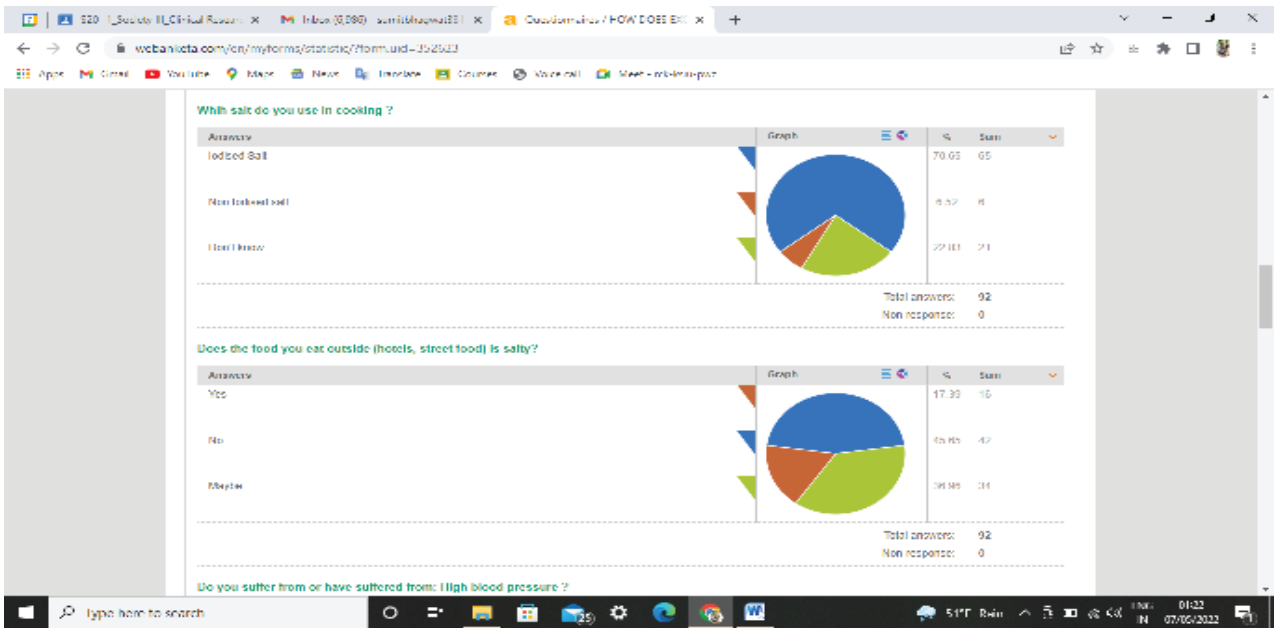
Graphs

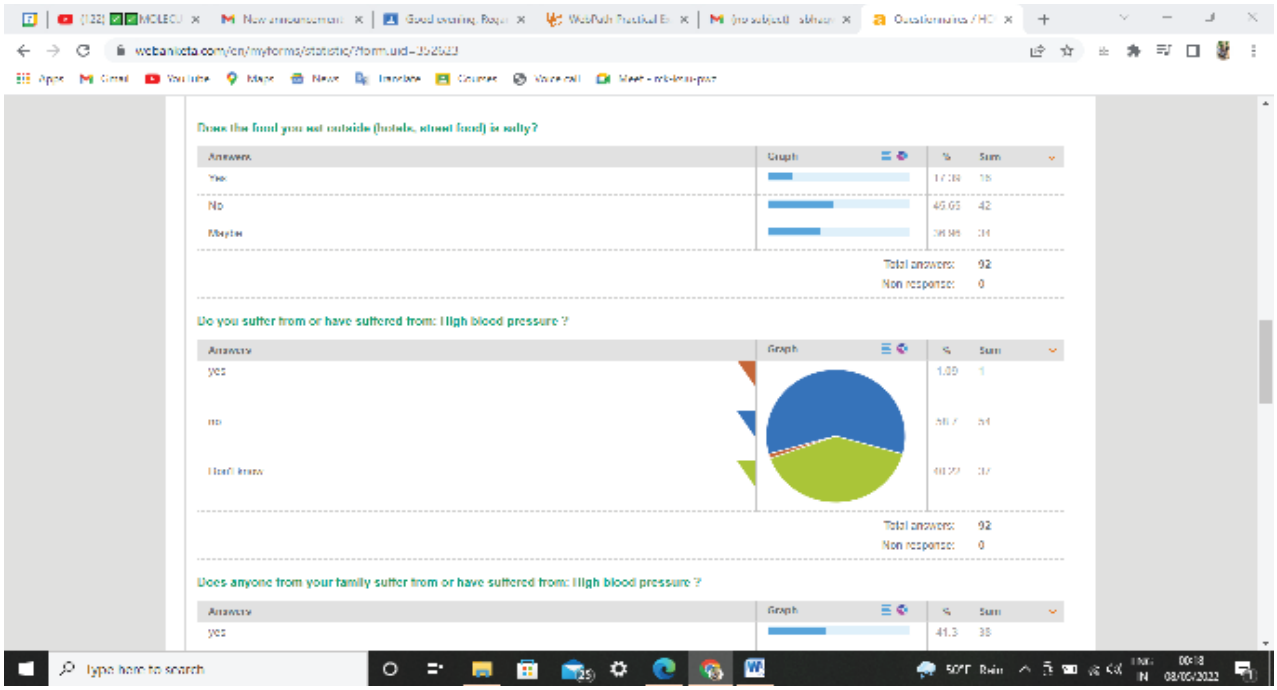


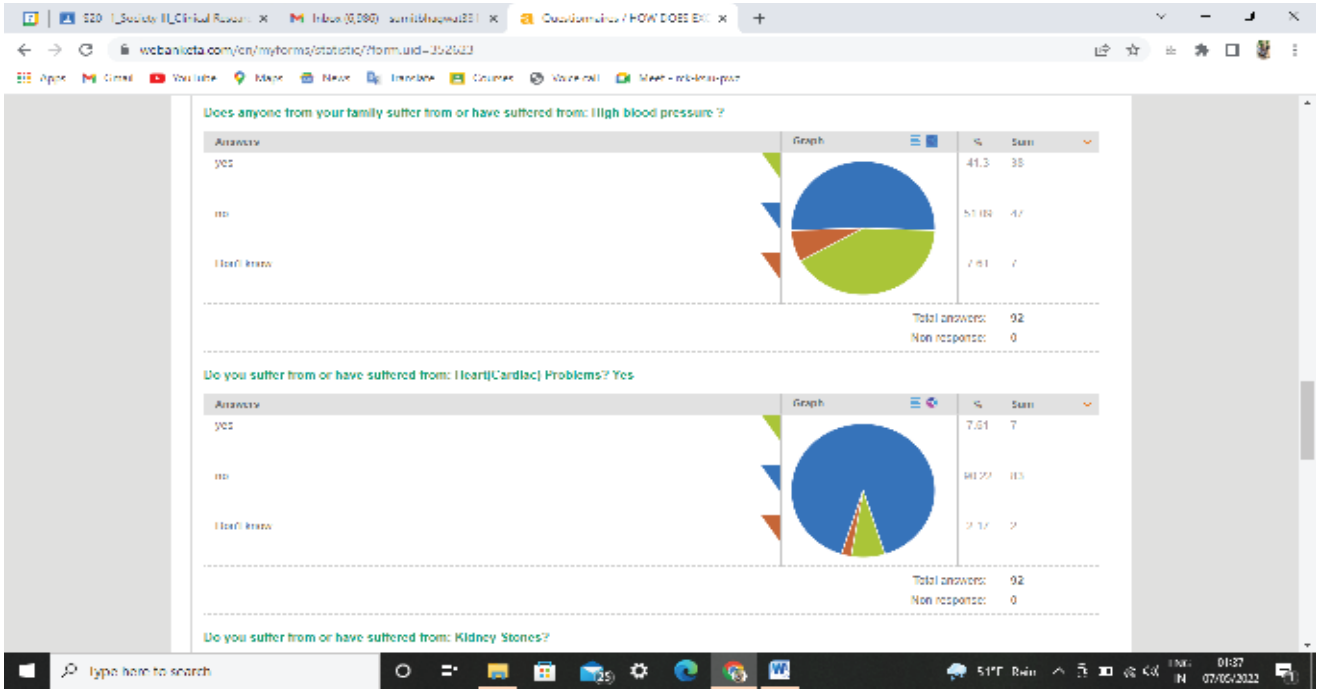


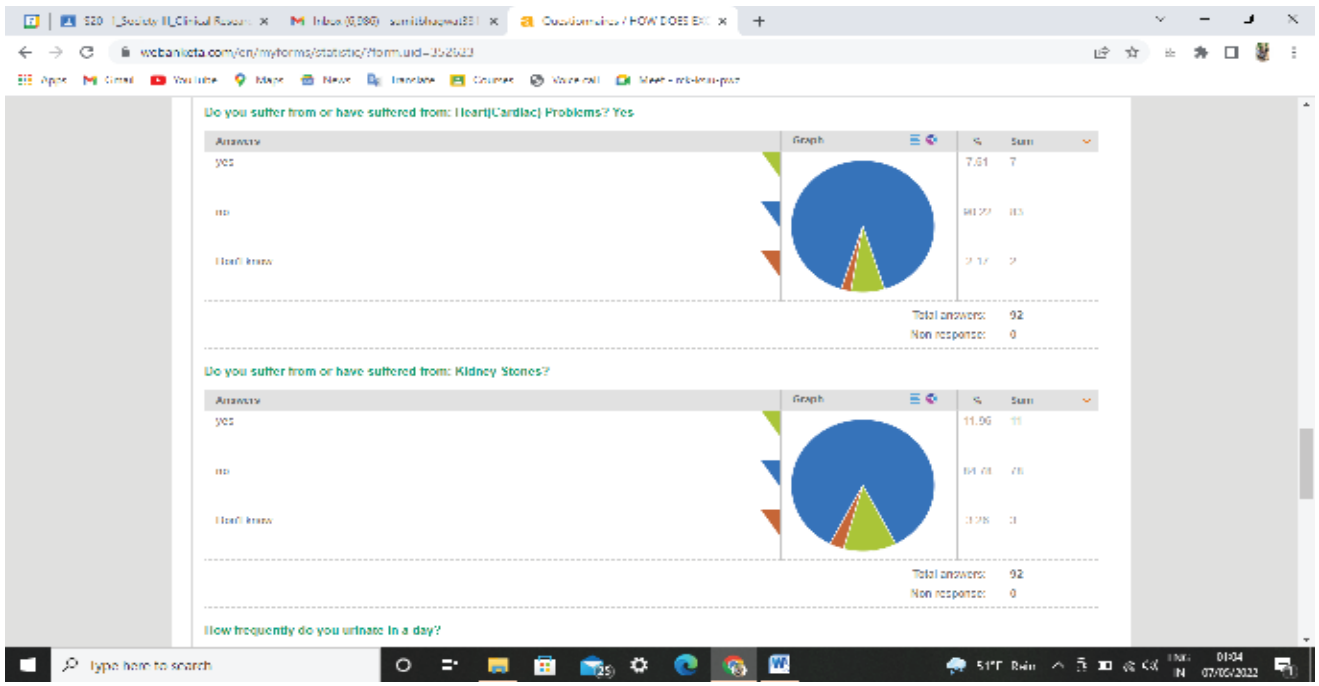

Does your food taste salty?
Answers
Graph
Sum
Always
Sometimes
Never
Total answers: 92
Non response: 0
How often do you add salt in the food at the table?
Answers
Graph
Sum
never
sometimes
always
don't know
Total answers: 92
Non response: 0
Whih salt do you use in cooking ?

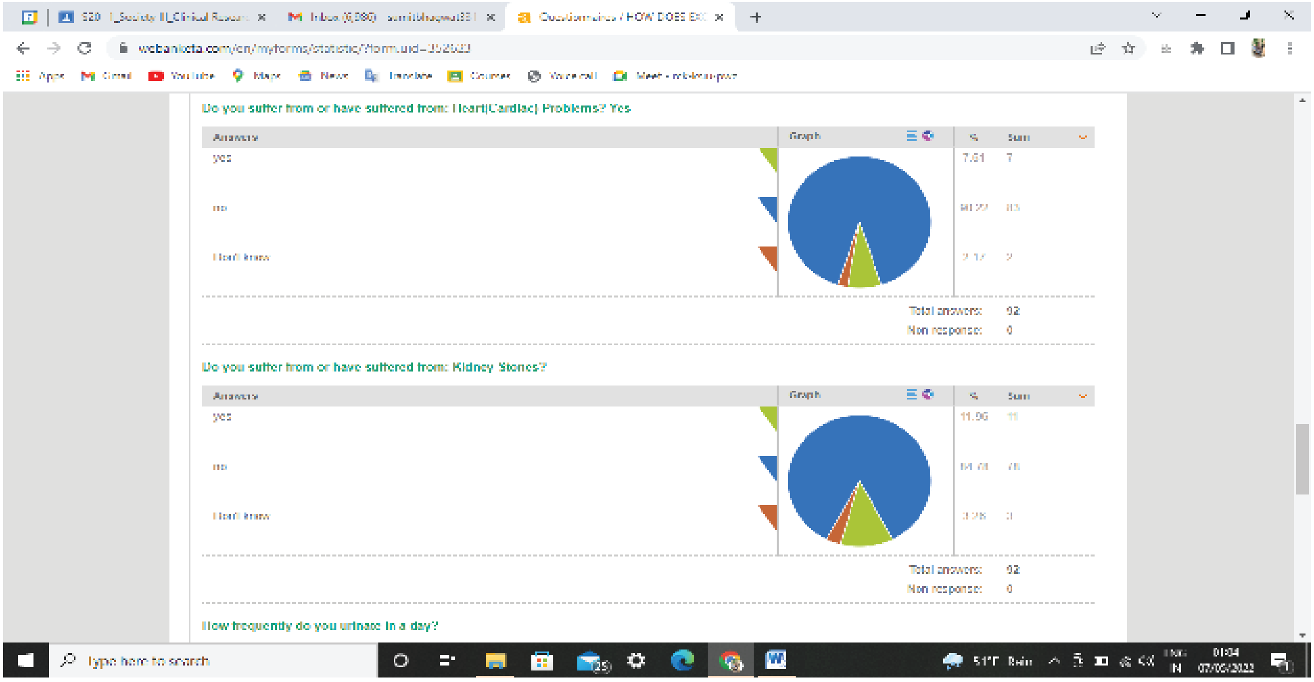

Whih salt do you use in cooking ?
Answers
Graph
Sum
Iodized Salt
Non Iodized salt
I Don't Know
Total answers: 92
Non response: 0
Does the food you eat outside (hotels, street food) is salty?
Answers
Graph
Sum
Yes
No
Maybe
Total answers: 92
Non response: 0
Do you suffer from or have suffered from: High blood pressure ?

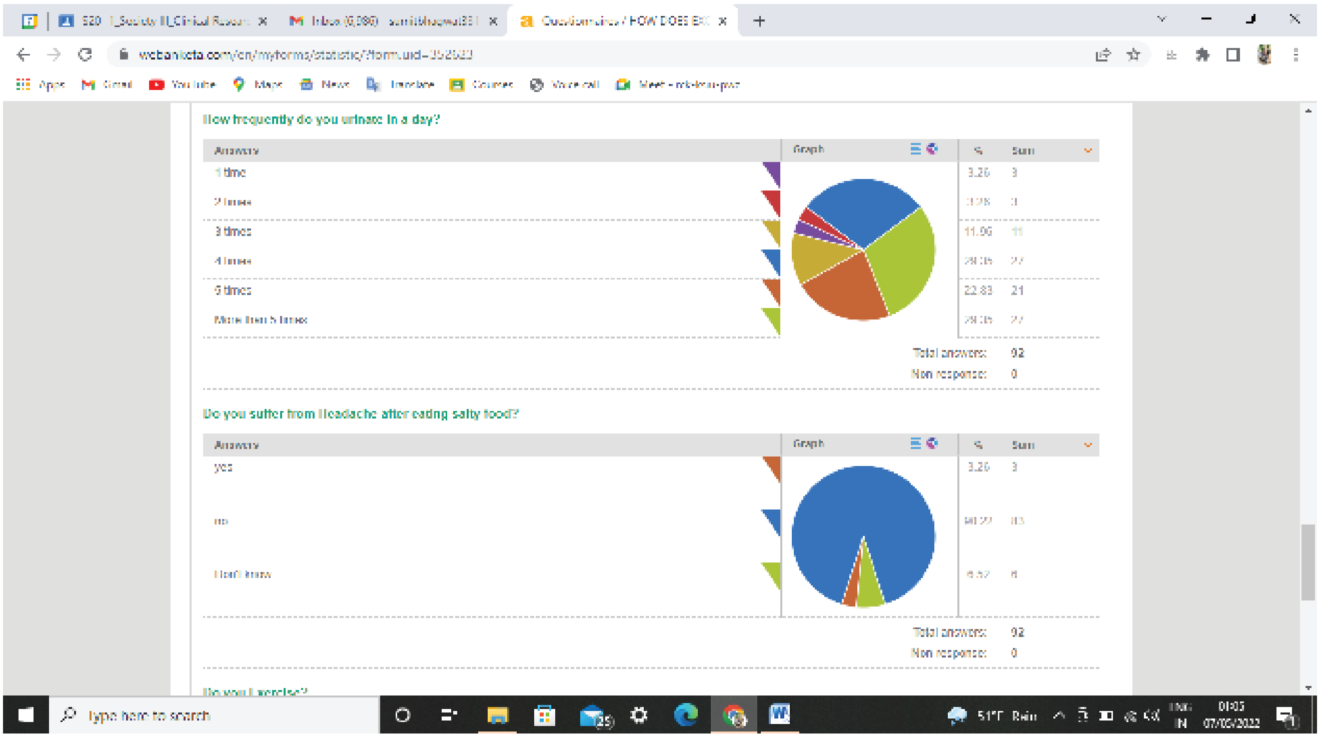

Which salt do you use in cooking ?
Answers
Graph
%
Sum
Iodized Salt
70.65
65
Non Iodized salt
6.52
6
I Don't know
22.83
21
Total answers: 92
Non response: 0
Does the food you eat outside (hotels, street food) is salty?
Answers
Graph
%
Sum
Yes
17.39
16
No
45.65
42
Maybe
36.96
34
Total answers: 92
Non response: 0
Do you suffer from or have suffered from: High blood pressure ?

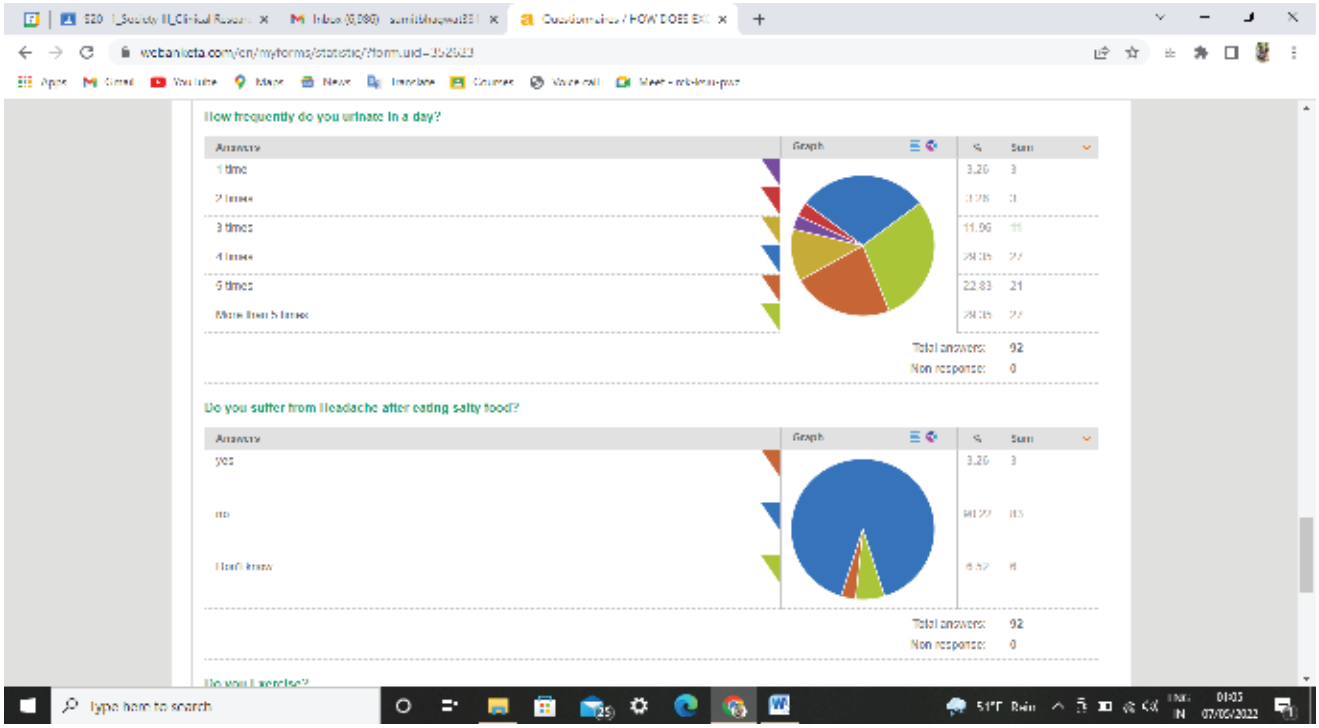

Does the food you eat outside (hotels, street food) is salty?
Answers
Graph
%
Sum
Yes
17.39
16
No
45.65
42
Maybe
36.96
34
Total answers: 92
Non response: 0
Do you suffer from or have suffered from: High blood pressure ?
Answers
Graph
%
Sum
yes
1.09
1
no
58.7
54
I Don't know
40.22
37
Total answers: 92
Non response: 0
Does anyone from your family suffer from or have suffered from: High blood pressure ?
Answers
Graph
%
Sum
yes
41.3
38

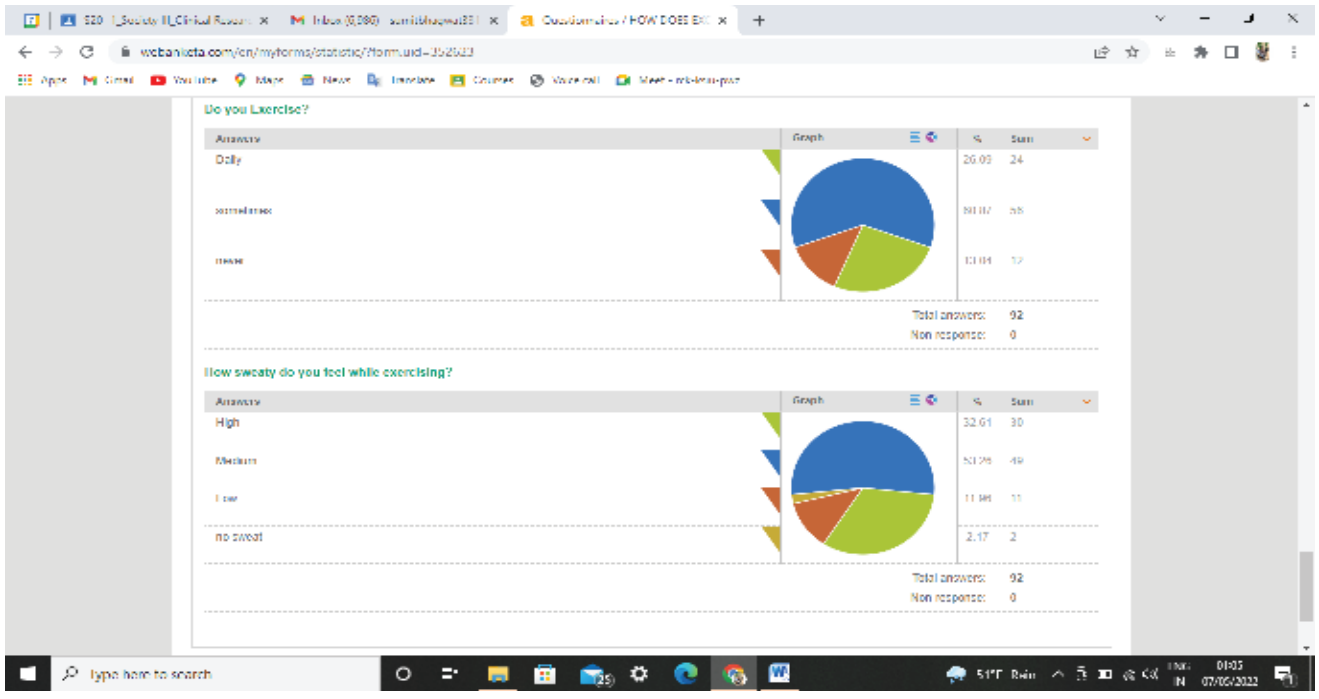

Does anyone from your family suffer from or have suffered from: High blood pressure ?
Answers
Graph
Sum
yes
41.3
38
no
51.09
47
I Don't Know
7.61
7
Total answers: 92
Non response: 0
Do you suffer from or have suffered from: Heart(Cardiac) Problems? Yes
Answers
Graph
Sum
yes
7.61
7
no
I Don't Know
Total answers: 92
Non response: 0
Do you suffer from or have suffered from: Kidney Stones?

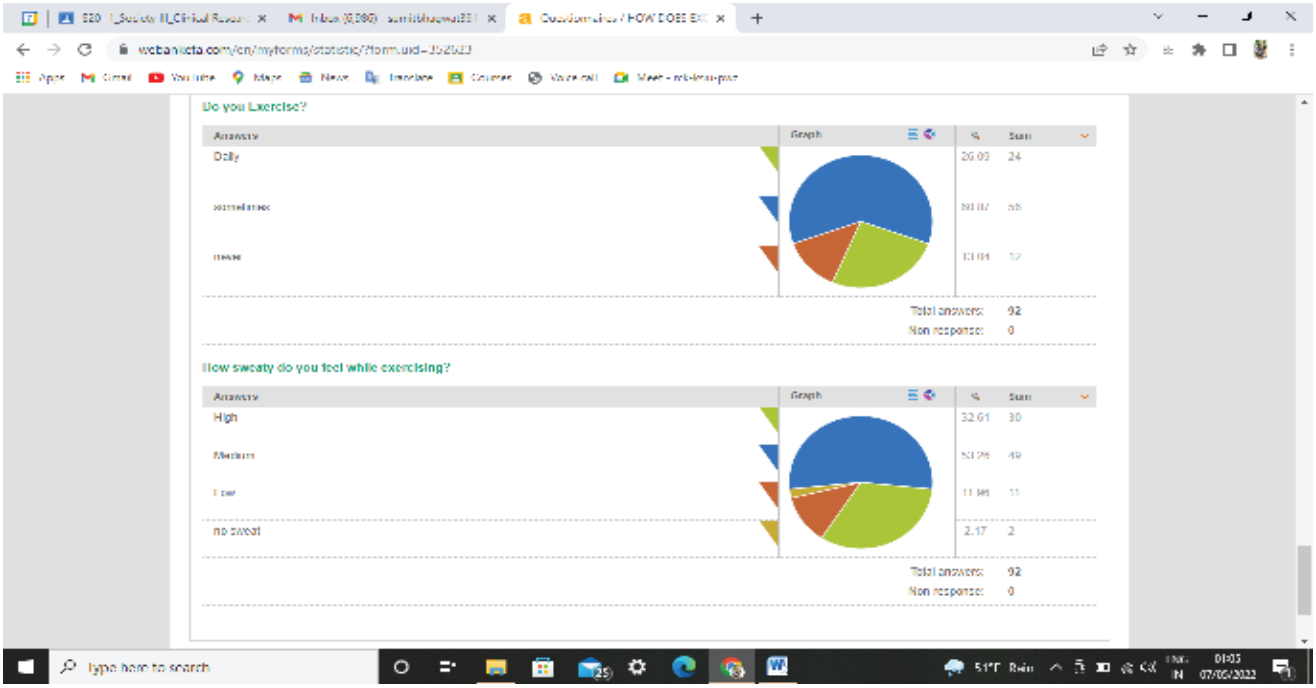

Do you suffer from or have suffered from: Heart(Cardiac) Problems? Yes
Answers
Graph
Sum
yes
7.61
7
no
I Don't Know
Total answers: 92
Non response: 0
Do you suffer from or have suffered from: Kidney Stones?
Answers
Graph
Sum
yes
11.96
11
no
I Don't Know
Total answers: 92
Non response: 0
How frequently do you urinate in a day?


Do you suffer from or have suffered from: Heart(Cardiac) Problems? Yes
Answers
Graph
Sum
yes
7.61
7
no
I don't know
Total answers:
92
Non response:
0
Do you suffer from or have suffered from: Kidney Stones?
Answers
Graph
Sum
yes
11.96
no
I don't know
Total answers:
92
Non response:
0
How frequently do you urinate in a day?
Type here to search


How frequently do you urinate in a day?
Answers
Graph
Sum
1 time
3.26
3
2 times
3 times
11.96
4 times
5 times
22.83
21
More than 5 times
Total answers:
92
Non response:
0
Do you suffer from Headache after eating salty food?
Answers
Graph
Sum
yes
3.26
3
no
I don't know
Total answers:
92
Non response:
0
Type here to search


How frequently do you urinate in a day?
Answers
Graph
Sum
1 time
3 times
5 times
3.26
11.96
22.83
21
Total answers: 92
Non response: 0
Do you suffer from Headache after eating salty food?
yes
no
Don't know
3.26
3
Total answers: 92
Non response: 0
Do you Exercise?


Do you Exercise?
Answers
Graph
Sum
Daily
26.09
24
Total answers: 92
Non response: 0
How sweaty do you feel while exercising?
High
Medium
Low
no sweat
32.61
30
2.17
2
Total answers: 92
Non response: 0


Do you Exercise?
Answers
Graph
Sum
Daily
24
Total answers: 92
Non response: 0
How sweaty do you feel while exercising?
Answers
Graph
Sum
High
30
no sweat
2.17
2
Total answers: 92
Non response: 0