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"A THREATENING RISE IN MELANCHOLIC STAGES AMONG YOUNG GENERATION: IS IT PANDEMIC OR SOMETHING ELSE"

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Abstract:

Background: Depression is a disorder of low mood that comes under category of mental illness caused by sad feelings because of a particular reason. Depressive individuals mostly show a different attitude and they have a different mind-set like they mostly end up the situations or their decisions in pessimism, and suicidal.

Aims: The main aim of the study is to observe the depression in among young generation especially students of our society, with respect current pandemic condition, that how this situation is especially effecting student mind-set along with that also how we can combat with it, through available non-pharmacological options to comprehend with such situation young generations

Methodology: The study comprises two phases. Phase-I was mainly dependent on undertaking a cross-sectional survey study where we observed depression among the younger generation in our community using the HSLC-25 checklist to evaluate the stages of depression with respect to symptoms observed. Phase-II of the study mainly deals with non-pharmacological solution to combat depression.

Result: The result shows that depression is mainly entrenched in our society, especially among the young generation but there are many non-pharmacological solutions which can combat depression and may heal a person of its depressed state. The assessed data depicts a very clear picture of the

significant influence that non-pharmacological treatment has on the management of anxiety and depression.

Conclusion: The study concludes that depression has risen in the study population in this particular span of the pandemic but it can be identified and easily be combatted with non-pharmacological treatments.

Keywords: Depression, Non-pharmacological treatment, Young generation, combat.

Introduction:

Depression is claimed as one of the major health problems, now a days most common in the general population that not only affect each individual but also on the whole society. [1, 2] Depression is symptomized by sad feelings, loss of attention or feeling of happiness, having guilt, anorexia or insomnia, fatigue, and concentration problems. [3] Depression leads to a melancholic condition which can ultimately becoming a lethal elevated suicidal risk, as well as secondary complications such as heart disease, CVD, and other mortality disorders. [4, 5]

Although depression can be categorized in different ways according to different regulations or associations it mainly can be classified into two main types: major depressive disorder (MDD); and depressive episode. MDD can symptomize as having frequent low-mood, interest lost and having no pleasure feeling, and reduced energy. [6] While a depressive episode differs by having sub-categories as mild, moderate, or severe; and dysthymia, a persistent mild depression. The dysthymia has similar symptoms as a depressive episode, but are lesser in severity and persistence. [2]

Previous studies showed that one of the major risk factors for depression is genetic characteristics which lead to functional as well as structural changes in the brain. [6, 7] The factors that contribute the risk for depression involve social, biological and psychological issues such as facing unfavourable situations like job loss, bereavement and trauma, as these can lead a person developing depression. [8, 9]

Young people are more vulnerable to depression and stress because of their increased vulnerability to negative influences and emotional suffering. These conditions have a strong correlation with both the quantity and quality of sleep. [10] A comprehensive evaluation of medical students at every level has disturbingly shown that a high percentage of them have low life quality, which is defined by significant financial, academic, and psychological expectations. [11]

Depression is the major mental disorder in terms of suicide mortality [12]. Various studies over time have determined the lifetime risk of suicide attempts related to depression [12, 13]. It remains unclear whether psychotic features increase the risk of suicidal attempts in MDDs. [14] Depression is a major contributing factor to suicide, which accounts for about 800,000 fatalities globally each year among people under 50. According to statistics from the World Health Organization (WHO), among youths and adolescents aged 15 to 29, suicide ranks as the fourth most common cause of death. The underlying reason of more than one in every 100 deaths (1.3%) in 2019 was suicide. [3, 15]

A significant variance in depression rates, ranging from 1.5% to 19.0% across the analysed populations, was found in a prevalence study of depression encompassing 38,000 individuals across 10 nations. The regions with the highest prevalence rates were the Caribbean, Eastern Europe, Sub-Saharan Africa, the Middle East, and North Africa. On the other hand, East Asia had the lowest shares, followed by Southeast Asia, Australia/New Zealand, and most notably, Japan.[6] In the US, the prevalence of depressive disorder (major) has been reported as 16.2 percent. WHO declared that depression is "invisible burden" for society. [1] According to National Health Interview Surveys of USA, reports of depression in youth have been balanced between 1998 and 2011. In 2011, 4% of youth from age 18–24 years, and 5% from 25 to 29 years reported two or more depressive symptoms. However, in the same year it has been reported that 30% of college students feeling too much depressed. [9]

Almost 300 million people globally suffered from depression in 2015; this number is roughly equivalent to the number of people who experience anxiety disorders. However, comorbidity, where

individuals experience both depression and anxiety simultaneously, is common. The World Health Organization (WHO) estimates that 800,000 suicides were reported worldwide in 2015, with 78% of those deaths taking place in low- and middle-income nations. Interestingly, 1.4% of premature deaths globally are caused by suicide. [16]

In 2017, about 7.1% of the adult population in the US had faced a depressive episode at least once in their lifetime. Women suffer with depression almost twice more than men. [17] Teenagers aged 12-17 years old contribute highest rate at approximately 14.4%; youth (18-25 years) approximately 13.8%; and adults aged 50 years or older approximately 4.5%. [18]

A WHO report for 2020 showed that greater than 264 million people have depression worldwide due to different disturbing factor contributions. Likewise, when the current COVID-19 pandemic situation occurred and people were restricted to stay in their homes, this has become the major factor for developing depression such as adults have to avoid social gatherings that contribute to stimulate their minds, children institution holidays restrict them to meet their friends; and online classes made them apathetic and unmotivated; Continuous inactivity raised stress and anxiety levels, which increased the possibility of depression.[19] Holidays seems to be refreshing and mind relaxing days but it has been also reported that majority have been facing sadness throughout the holiday session, which means that holidays are not joyful for everyone and nowadays in this pandemic it is really frustrating to not interact with people and restrict themselves in their homes. And it is clearly seen that COVID-19 patients faced this problem more than anyone else. [20] The clinical burden of depression shows the limited effectiveness of treatments, [3] comparatively to medication and psychotherapy, exercise prevents side effects and has fewer social and financial burdens. It is easy to perform at any time on anywhere, without financial cost and professional therapist guidance. [21, 22] Hopkins Symptoms Checklist (HSCL) [21] is one of the widely known and used screening instrument, for analysis of different psychological distress. The scale is functional from 1950s and was introduced by Parloff, Kelman at John Hopkin's University. Different versions of HSCL are used in different criteria and ranges over different lengths (5-90 items). The Checklist is quite diverse and is used in multiple different types of settings. The scale is very useful in different epidemiological studies and is considered as a very popular and reliable tool for screening of mental health issues. [23, 24]

Methodology:

This research employs a cross-sectional survey methodology [25], involving a student population. Data collection was conducted in two phases. Phase-I involved collecting data from a sample of 228 students from diverse areas of Karachi.

Phase-I Method:

In Phase-I conducted the cross sectional survey on student population over age of 18 years from different institutions of Karachi, for a period of 3 months.

Evaluation criteria:

The evaluation criteria to screen the mental health issues in individuals participating in the study using HSCL-25 which contains 25 questions (10 for anxiety and 15 for depression). The participants of the study were asked to filling the forms, which was presented in both English and Urdu and the response scale from 1-4 was used to evaluate the responses, with cut-off point of 16. [26]

Study design: The form consists of two portions including demographical data of each individual and different questions regarding symptoms of anxiety and depression representing association with age.

For sample sizing: Considering 25 million population of Karachi and estimated prevalence of depression is general population of Pakistan (over 10 million), sample size was identified using z-

score at confidence interval of 90% with margin of error 0.05. The outcome of the sample size was 208.

Equation 1: Z-score for formula for evaluation of sample size in large population.

n = Z^2 * p(1-p) / d^2

Inclusion criteria: The data was collected over vast population but the selected data included for research based on age from 18 to 29, educational level from Matriculation to Graduates from East, West, North, South and Central Karachi.

Exclusion criteria: The study was limited to participants who were between the ages of 18 and 29. Any submissions received from individuals outside this age range were not considered.

Conduction of HSCL-25 test:

Questionnaire Design:

The HSCL-25 questionnaire was used to assess depression symptoms in Phase I. We designed the questionnaire according to HSCL-25 guidelines and ensured it was translated and culturally adapted for non-native English speakers. Accessibility considerations were made for individuals with disabilities.

Data Collection Methods:

Two data collection methods were employed:

- Paper-based questionnaire: This traditional method facilitated anonymous participation and wider reach, but required manual data entry and analysis.
- In-person interviews: These provided personalized interaction, allowed for clarification of questions, and yielded richer data, but were time-consuming and required trained personnel.

Phase-II Method:

Choosing individuals who were suspected of having depression based on their Phase I responses was the focus of Phase II of our study. Of the initial 228 participants, 120 were determined to have varied degrees of depression based on the HSCL-25 scale. Higher scores indicated an increased likelihood of depression, with a cut-off point of 16. This stage sought to determine the most effective method of treatment and assess how well non-pharmacological therapies managed depression. [27, 28]. Four groups were made by random selection with 40 individuals in each category designed according to the four factors that commonly help in behavioural changes in humans. These include: diet, physical activity, mental therapy, and communication. Before starting the therapy, we evaluated each individual that on what stage of depression he/she lies through a questionnaire session [29, 30]. Each category is monitored accordingly by an investigator (researcher specialized in mental health), then after 15 days of the designed non-pharmacological therapy, each therapy was properly evaluated and validated by clinical psychologist and mental health practitioners [28, 31], and were evaluated for their specific therapy through Hopkins scale 10 [32, 33], in continuation of 12 months.

Consent and Ethical Considerations:

All participants provided informed consent via a pre-designed form, indicating their willingness to participate in the research. We ensured data confidentiality and anonymity throughout the study. While adhering to research principles, including the Declaration of Helsinki, no formal ethics approval was required for this study.

Result:

The findings presented in this report are based on a comprehensive two-phase research survey conducted on a carefully selected sample of the Karachi population

Phase-I

Table 1: Demographic features of participants				
FEATURE		N	TOTAL	%
Age	18-21	140	228	67.31
	22-25	48		23.08
	26-29	40		9.62
Zonal division of Karachi	Central	72	228	34.62
	North	50		24.04
	South	35		12.02
	East	36		17.31
	West	35		12.02
Qualifications	Matriculation	16	228	5.29
	Intermediate	144		69.23
	Graduate	42		17.79
	Postgraduate	26		7.69
Employment status of Students	Employed	65	228	21.63
	Unemployed	163		78.37

The targeted population consist of following criteria divided into categories like age, Karachi zones as location, qualification, and employment status as mentioned in Table 1.

Table 2: Depression related features of participants

Features	%age	N
HSCL-25 evaluation for depression		
Individual showed signs of depression	77%	176
Individual did not showed any signs of depression	23%	52
Intensity of depression		
Mild (cut-off point 16-24)	45%	102
Moderate (cut-off point 25-33)	20%	46
Severe (cut-off point 34-40)	12%	28
Age in which depression was identified		
18-21	89%	125
22-25	65%	31
26-29	50%	20
Utilization of alcohol or medicine to overcome depression		
Never	89%	157
Bi-weekly	8%	14
Alternate days in a week	1%	2
Every day	2%	4

Figure 1 represents the symptomatic assessment over depression by HSLC-25 responses for evaluation of depression in participants.

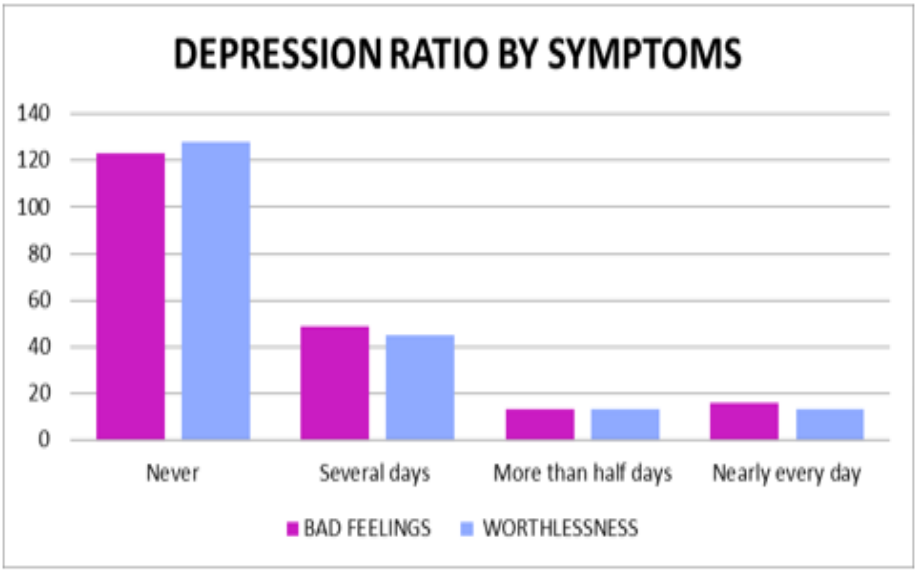

Figure 1: Depression symptoms shown in sample population

Table 3: General reasons of depression in study population		
S. No.	**Reasons for depression**	**%age**
1	Financial problem	13.07
2	Medical issues increase during pandemic phase	1.14
3	Employment issues	9.09
4	Martial problems/ relationship problems	14.20
5	Death of any loved ones	7.39
6	Trauma faced in past	9.66
7	Educational issue	17.05
8	Fear regarding future	6.82
9	Suffering from any disease (yourself or any of your loved ones)	3.41
10	Pandemic	8.52
11	Depressing news broadcasted daily	3.41
12	Discrimination or racism	3.41
13	No reason	2.84

The most often stated causes of depression among participants are shown in Table 3. Although there are many different factors causing depression, but in many situations, specific factor is a leading cause of depression.

Table 4: Age specified reason for depression				
Age (years)	**Reasons for depression**	**Total individual**	**N**	**%age**
18-21	Financial problem	125	12	10%
	Medical issues increase during pandemic phase		0	0%
	Employment issues		10	8%
	Martial problems/ relationship problems		18	14%
	Death of any loved ones		8	6%
	Trauma faced in past		11	9%
	Educational issue		27	22%
	Fear regarding future		8	6%
	Suffering from any disease (yourself or any of your loved ones)		5	4%

Table 4: Age specified reason for depression				
Age (years)	**Reasons for depression**	**Total individual**	**N**	**%age**
	Pandemic		12	10%
	Depressing news broadcasted daily		5	4%
	Discrimination or racism		5	4%
	No reason		4	3%
22-25	Financial problem	31	7	23%
	Medical issues increase during pandemic phase		0	0%
	Employment issues		3	10%
	Martial problems		4	13%
	Death of any loved ones		3	10%
	Trauma faced in past		4	13%
	Educational issue		3	10%
	Fear regarding future		2	6%
	Suffering from any disease (yourself or any of your loved ones)		0	0%
	Pandemic		2	6%
	Depressing news broadcasted daily		1	3%
	Discrimination or racism		1	3%
	No reason		1	3%
26-29	Financial problem	20	4	20%
	Medical issues increase during pandemic phase		2	10%
	Employment issues		3	15%
	Martial problems		3	15%
	Death of any loved ones		2	10%
	Trauma faced in past		2	10%
	Educational issue		0	0%
	Fear regarding future		2	10%
	Suffering from any disease (yourself or any of your loved ones)		1	5%
	Pandemic		1	5%
	Depressing news broadcasted daily		0	0%
	Discrimination or racism		0	0%
	No reason		0	0%

Table 4 represents the percentage difference of reasons for depression in individuals of different age groups. As it has been observed that the most affected population in study are students' between18-21, they face issues related to education mainly, while individuals in age groups 22-25 and 26-29 mainly are stressed regarding their financial issues.

Phase I - Prevalence and Causes of Depression:

- High prevalence of depression: 80% of participants showed symptoms of depression, indicating a significant burden of this mental health disorder in the young adult population of Karachi.
- Predominant reasons for depression: Educational issues (17.05%), marital/relationship problems (14.20%), and financial problems (13.07%) were identified as the most common factors contributing to depression.
- Age-specific reasons: Educational issues were the primary concern for younger participants (18-21), while financial and marital issues were more prevalent among older participants (22-29).

- Low usage of medication for depression: A majority of participants (89%) did not use alcohol or medication to cope with depression.

Phase-II:

Participants:

Individuals suffering from depression were evaluated for their symptoms and asked various questions to confirm their diagnosis. After obtaining informed consent, they were randomly divided into four groups. Each group consisted of 40 individuals (approximately 25% of the total participants), representing the targeted non-pharmacological factors influencing mood: diet modification, mental therapy, physical activity, and communication.

Intervention:

The therapy period for each group lasted one month. Participants were allowed to withdraw at any time if they were dissatisfied. Daily follow-ups were conducted, including recording individual responses and comparing them to baseline conditions. After the therapy period, the Hopkins Scale Checklist-10 (HSCL-10) was used to assess the full impact of each therapy on depression symptoms.

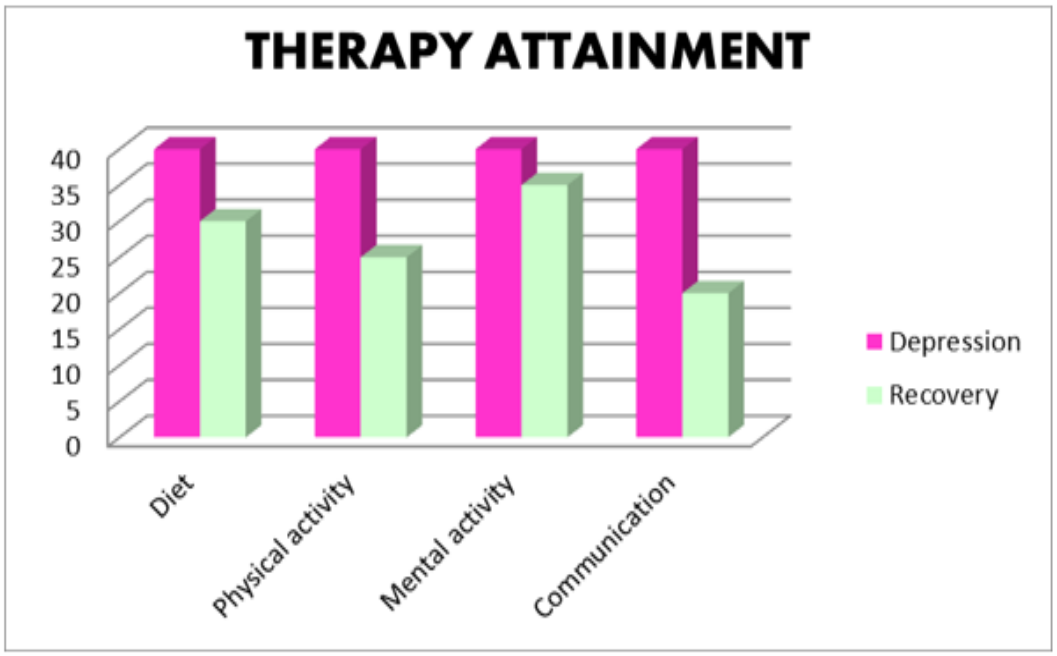

Figure 2: Non pharmacological therapy effects

Phase II - Effectiveness of Non-Pharmacological Interventions:

- Mental therapy was the most effective intervention: 87.5% of participants showed improvement in their depression symptoms after one month of therapy.
- Diet therapy showed significant improvement: 75% of participants experienced improvement in their depression symptoms after one month of dietary modification.
- Physical therapy resulted in moderate improvement: 62.5% of participants showed improvement in their depression symptoms after one month of physical activity.
- Communication therapy showed the least improvement: 50% of participants experienced improvement in their depression symptoms after one month of communication-based therapy.

Discussion:

Introduction:

Depression is a prevalent mental disorder with increasing rates worldwide, posing a significant threat to global health. [2] Its impact extends beyond mental well-being, contributing to suicidal ideation and hindering daily functioning. [5] Depression is mainly classified into two main categories: major

depressive disorder (MDD); and depressive episode. [13] The risk factors that involve increasing depression cases includes: social, biological and psychological issues that provide an unfavourable situation for a person to maintain their mental health. [10] . This study investigates the prevalence of depression among young individuals in Karachi, Pakistan, and evaluates the effectiveness of non-pharmacological interventions in mitigating its symptoms.

Melancholic state/ depression become the common factor for suicidal burden in our society. It is not only affects the mentality of a person but also affect the daily living-style. Student population is currently becoming the most prominent population group suffering from depression. [11] In this current situation of COVID-19 pandemic, depression is found more commonly in the society as this pandemic reserved the person in particular boundaries, no interaction with others, feeling alone leads to be a depressed person. Students as the most suffering population are forced to get education online rather than physical interaction. It has made a burden to students to cope up with learning difficulties and to produce a better result in this situation. Although many institutions were unable to manage the online education so student have faced the situation of a year back and graduated later as committed. Previous research suggests that 15-85% of students' experience depression [34], with a higher prevalence in women (25%) compared to men (12%) [35]. This study specifically focuses on youth, with a focus on students, who are considered a particularly vulnerable population.

The research comprises two phases:

Phase I: This phase assesses the prevalence of depression among the participants. Using the Hopkins Scale Checklist-25 (HSCL-25), 80% of the 228 participants were identified as suffering from depression to varying degrees. Most individuals (77%) experienced some form of depression, while 12% exhibited severe symptoms requiring medical intervention.

The study further analyzed the causes of depression according to age groups. Educational issues were the primary concern for younger participants (18-21), whereas financial and marital problems were more prevalent among older participants (22-29 and 26-29).

Phase II: This phase evaluated the effectiveness of non-pharmacological interventions in treating depression. Participants were divided into four groups: diet therapy, physical therapy, mental therapy, and communication therapy. Each group consisted of 40 individuals.

Mental therapy emerged as the most effective intervention, with 87.5% (35 out of 40) individuals demonstrating significant improvement. Diet therapy followed closely, showing positive effects in 75% (30 out of 40) of participants. Physical therapy and communication therapy also yielded promising results, with 62.5% (25 out of 40) and 50% (20 out of 40) improvement rates, respectively.

This study's findings highlight several key points:

High prevalence of depression: The observed 80% prevalence rate aligns with previous studies, emphasizing the need for greater awareness and accessible mental health services.

Effectiveness of non-pharmacological interventions: Mental and diet therapy demonstrated remarkable effectiveness, supporting growing evidence advocating for their use in treating depression.

Promising results for other interventions: While physical and communication therapies require further optimization, their initial success suggests their potential as valuable tools in the fight against depression.

Benefits of non-pharmacological approaches: Compared to pharmacological interventions, non-pharmacological approaches offer safer and potentially more sustainable treatment options, potentially preventing relapse and promoting long-term well-being.

This study underscores the significant burden of depression among young individuals in Karachi, Pakistan. It also provides promising evidence for the effectiveness of non-pharmacological interventions, particularly mental therapy and diet therapy. Further research is needed to optimize the delivery of these interventions and explore their long-term impact. By promoting accessible and effective non-pharmacological approaches, we can significantly improve the mental health outcomes for young individuals worldwide.

Conclusion:
The prevalence and treatment of depression, particularly among students, have been elucidated by this two-phase study. Phase-I data showed an alarmingly high prevalence of depression, underscoring the necessity of effective therapies. Phase-II investigated the effectiveness of non-pharmacological treatments, showing that mental therapy, modifications to diet, incorporating physical activity, and proper communication with depressed individuals are all useful in management of depression. These results highlight the value of treating depression holistically, using both conventional pharmaceutical methods and non-pharmacological therapies.

Conflicts of interest:
There are no conflicts of interest between authors or any other.

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Criteria of inclusion:
1. Members who participated in designing of Concept and study or
2. Members who participated in acquisition of data
3. Members who participated in analysis and interpretation of data;
4. Members who participated in drafting the article, revising it and correcting it.

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