Psychological Flexibility, Mindfulness and Perceived Social Support as Predictors of Psychological Symptoms among Nursing Faculty Students at Mansoura University

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Abstract
College students are often experience increased stress and anxiety, that increases the risk of depressive symptoms. **Aim:** Investigate the role of psychological flexibility, mindfulness traits, and perceived social support as predictors of psychological symptoms. **Methods:** The current study employed a descriptive cross-sectional approach. The study was done in nursing faculty, Mansoura University. The number of participants in this study was 551.Four tools were used: Depression Anxiety Stress Scales-21, Acceptance and Action Questionnaire-II (AAQ-II), the Multidimensional Scale of Perceived Social Support (MSPSS), and Mindfulness Attention Awareness Scale (MAAS). **Results:** indicates that (18.7%) of nursing students experience mild to severe depressive symptoms. Whereas, (69.9%) of them had high psychological flexibility, (30.1%) had low psychological flexibility and there is a positive significant correlation between psychological flexibility and depressive symptoms. On the other hand, there is a negative correlation between mindfulness and perceived social support and depressive symptoms. **Conclusion:** This study concluded that, psychological flexibility, mindfulness traits, and perceived social support act as predictors of depressive symptoms. **Recommendations:** This work may have important implications for clinical training and practice, college students may benefit from mindfulness-based interventions for enhancing psychological flexibility, consequently decreasing the risk for depressive disorders.

Keywords: Psychological symptoms, Mindfulness, Nursing students, Perceived social support, & Psychological flexibility.

Introduction

University students traditionally are under more pressure and have physical and mental health problems as reported in several studies (**Jeffords et al., 2020**). The main sources of stress are dealing with intimate relationships, financial difficulty, and fulfilling responsibilities and roles (**Yang et al., 2021**). Undoubtedly, nursing students are routinely exposed to a variety of stresses during their education and training (**Shrivastava, 2014**), they are placed in situations that need them to make crucial decisions for patient care, and the resulting timidity and anxiety can lead to depression. They must possess qualities such as a high level of cognitive skills proactive nature and attitudes; they are not only suffering from their academic life, but they also try to share the suffering of other people who are affected with different health problems, which put them at a greater risk for depression than any other students (**Dawood et al., 2017**).

College students are more likely to have depressive symptoms than the overall population or non-college students. According to systematic reviews, around 33% of college students have depressive symptoms. College students' mental problems are expected to worsen, according to experts (**Yu et al., 2021**).

Depressive symptomatology is linked to low academic performance and even dropping out of college among college students. According to the findings, even mild or moderate degrees of depression symptomatology might impede academic functioning and result in poor GPAs in students (**Boyraz et al., 2017**).

Depression is the largest cause of disability in the globe (**Ferrari et al., 2013**). According to studies, most common mental disorders begin before the age of 24.Young individuals aged 18–29 have a significant prevalence of anxiety and mood disorders. Almost 40% of young individuals get their first episode of depression before they're 20, with the typical age of onset being in their mid-twenties. These are crucial years in terms of education, work, and social relationship (**Khan et al., 2021**).

Psychological flexibility **(PF)** originated from acceptance and commitment therapy. It is a process that involves both accepting (vs. avoiding) interior feelings that are unpleasant and engaging in behavior based on what a person perceives as important, i.e., mindfully persisting in values-driven behavior, without avoidance, in the presence of distressing thoughts, emotions, or physical sensations (**Stotts et al., 2019**).

Psychological flexibility consists of six main processes: experiential acceptance; cognitive diffusion; self-as-context; contact with the present moment; values and committed action to achieve one's passions (**Lucas & Moore, 2020**).

Previous studies found that psychological flexibility is linked to a variety of positive benefits, including stress coping, self-regulation, self-determination, goal achievement, and social functioning. On other hand, psychological inflexibility has been linked to depression-related processes. Rumination of unpleasant emotions and related thoughts is an example of psychological inflexibility which has a significant role in the initiation, maintenance, and recurrence of depression (**Østergaard et al., 2020**).

Stotts et al. (2019) reported that in cross-sectional studies**,** psychological inflexibility has been linked to the majority of psychopathology and related disorders, including depression and anxiety, post-traumatic stress disorder, and drug dependence. Furthermore, longitudinal studies imply that psychological rigidity is linked to the formation of mood and anxiety problems.

Mindfulness is defined as paying attention to the present moment in a purposeful and nonjudgmental manner. It can be conceptualized in terms of a state or terms of a trait. A mindfulness state is commonly achieved during the practice of mindfulness meditation. Trait mindfulness, on the other hand, has been described as a disposition of being mindful during activities of everyday life (**Sauder et al., 2021**).

Martin et al. (2018) reported that the mindfulness trait is adversely linked with a wide range of depressive illnesses and depressive symptoms and positively correlated with life satisfaction, feeling of autonomy, and positive affect (in both clinical and non-clinical settings). Individuals with trait mindfulness have also been shown to be able to get rid of cognitive perseveration, regulate negative affective states, and disengage attention from cues that perpetuate depressive symptoms.

There has been little study on the effects of various components of dispositional mindfulness in non-treatment-seeking populations. There are a few worth mentioning **Barnes & Lynn (2010)** examined college students' mindfulness abilities and depressive symptoms at the beginning of the semester, as well as throughout midterms and finals. Over the course of the semester, acting with awareness, non-reactivity, and non-judge were inversely associated with depressive symptoms, but the observation was positively associated with depressive symptoms. Describe failed to demonstrate a significant relationship between depressive symptoms during the semester (**Petrocchi & Ottaviani, 2016).**

Perceived social support refers to how individuals perceive friends, family members, and others as sources available to provide material, psychological and overall support during times of need (**Siedlecki et al., 2014**). Researchers distinguish between two forms of social support: perceived and received social support. The perceived availability and sufficiency of social connections are referred to as perceived social support; received social support focuses on the amount and quality of support provided (**Eagle et al., 2019**). Several studies have found that higher levels of social support are inextricably linked to improved mental health outcomes. Perceived social support is a greater predictor of reduced depression in young people (**Ioannou et al., 2019**).

Significance of the Study

Psychological symptoms might cause academic performance to deteriorate. Compared with healthy ones, its negative consequences may last throughout adulthood, with worse job satisfaction and quality of work performance, as well as a higher risk of burnout (**López-López et al., 2021**); (**Khan, Akhtar, Ijaz, & Waqas, 2021**). It is very valuable to identify what variables make persons prone to psychological symptoms (especially depressive symptoms). Therefore, this study aimed to explore the effect of psychological flexibility, mindfulness, and perceived social support as predictors of psychological symptoms.

Aim of the study:

This study aims to explore the effect of psychological flexibility, mindfulness, and perceived social support as predictors of psychological symptoms among Nursing Faculty Students at Mansoura University.

Research Hypothesis:

- The Nursing Students have moderate level of psychological symptoms, psychological flexibility, mindfulness and perceived social support.
- There is a negative relation between psychological flexibility, mindfulness and perceived social support with psychological symptoms among nursing faculty students at Mansoura University.

Research questions:

- What is the level of psychological symptoms among nursing students?
- What is the score of psychological flexibility, mindfulness and perceived social support among nursing students?
- Is there a relation between psychological flexibility and psychological symptoms among nursing students?
- Is there a relation between mindfulness and psychological symptoms among nursing students?
- Is there are relation between perceived social support and psychological symptoms among

university nursing students?

Operational definitions

Psychological Symptoms (psychological problems): Such as depression, anxiety and stress. Stress is a biopsychosocial concept that describes the result of an organism's failure to respond appropriately to mental, emotional, or physical demands. Anxiety is defined by intense feelings of dread that are accompanied by somatic symptoms that indicate a hyperactive autonomic nervous system , whereas depression is defined by a loss of interest or pleasure, sadness, guilt or low self-worth, disturbed sleep or appetite, extreme tiredness, and poor concentration.

Psychological Flexibility is defined as being in contact with the present moment, fully aware of emotions, sensations, and thoughts, welcoming them, including the undesired ones, and moving in a pattern of behavior in the service of chosen values. In simpler words this means accepting our own thoughts and emotions and acting on long-term values rather than short-term impulses, thoughts, and feelings that are often linked to experiential avoidance and a way to control unwanted inner events.

Subjects and Method

Research design:

A descriptive correlational cross-sectional research was conducted.

Research setting:

The research was carried out at Mansoura University, Faculty of Nursing. Mansoura University was established in 1972 as a governmental university with the mission of developing and disseminating information that will help students build their communities and lead their professions in a global society. Psychiatric and Mental Health Nursing, Geriatric Nursing, Nursing Administration, Medical-Surgical Nursing, Community Health Nursing, Pediatric Nursing, Obstetric, and Gynecological Nursing, are the seven academic divisions that make up the Faculty of Nursing.

Research Subjects and Sample Size:

The data from a stratified sample of 551 students, which includes all the faculty 4 academic levels. The used inclusion criteria included (1) students' enrollment in faculty of nursing at Mansoura University (2) willing to participate in the study and accept to give voluntary consent. Exclusion criteria included:1) students with serious and persistent mental illness, 2) persistent mood disorders,3) schizophrenia, 4) dissociative disorders, and 5) psychotic or delusional disorders. Sample size calculation followed **(Zakaria & Gheith, 2015)**, formula which calculate the sample size with precision/absolute error of 5% and type 1 error of 5%.

Accordingly, the current study sample size = $[(_{Z1-\alpha/2})^2 . P(1-P)]/^{d2}$, where, $_{Z1-\alpha/2}$ at 5% type 1 error (p<0.05) is 1.96. P is the expected proportion in population and d is the absolute error or precision. Therefore, based on this formula $[(1.96)^{2} . (0.848).(1-0.848)/(0.03)^{2} =550.2$. Thus, the sample size required for this study is 551 nursing students.

Tools for data collection

Four tools were used to collect the study data, these include:

Socio-demographic characteristics:

Such as age, gender, Academic level, grade point average (GPA), marital status, living situation, and family socioeconomic status.

Depression Anxiety Stress Scales-21 (DASS-21):

The DASS-21 developed by **Lovibond & Lovibond (1995)** (English version), it is a self-report scale composed of 21 items that evaluate three subscales of psychological symptoms Depression, anxiety, and stress. Participants rate how they have experienced these symptoms over the past week on a response Likert scale of 4-points, ranging from 0 ("Did not apply to me at all") to 3 ("True most of the time"). The higher score indicated severe depression, anxiety and stress. The Cronbach's Alpha coefficient for the scale in the present study was (0.910).

Acceptance and Action Questionnaire-II (AAQ-II)

The scale was developed by **Bond, Hayes, Baer, Carpenter, et al., (2011)**. The researchers employed an English-language tool. It is a seven-item, comprehensive assessment of psychological flexibility that includes items that target several of the six main processes: Diffusion, acceptance, and committed action (sample item: 'I worry about not being able to control my worries and feelings.' Each item is followed by a seven-category response scale ranging from 1 to 7, with 1 being "Never true" and 7 being "Always true." Higher scores suggest more psychological inflexibility (total score range: 7-49, calculated as the sum of the item responses). The Cronbach's Alpha coefficient for the scale in the present study was (0.892).

The Multidimensional Scale of Perceived Social Support (MSPSS):

The scale was developed **Zimet, Dahlem, Zimet, & Farley et al. (1988).** The researchers employed a tool that was written in English language. It is a self-report of 12 items comprising three factors, namely social support from family, friends, and significant others. The three subscales of family, friend, and significant other perceived social support consist of four items. It is a response 7 -point Likert scale ranged from very strongly disagree (1), to very strongly agree (7).The total score of the three subscales is summed to create the total score of perceived social support with higher scores indicative of higher perceived social support.

The reliability of the perceived social support questionnaire in the present study was (0.887) according to Cronbach's alpha.

Five Facet Mindfulness Questionnaire (FFMQ– Short Form

The scale developed by **Brown & Ryan, (2003)** is a 15-item scale designed to assess receptive awareness of and attention to what is taking place in the present moment, measures five areas: observing, describing, acting with awareness, non-judgment of inner experience, and non-reactivity to inner experience. Participants are asked to rate how frequently they experience what is described in each statement using a response 6-point Likert scale from 1 (almost always) to 6 (almost never), where high scores reflect a more mindful presence. An example of an item includes "I find it difficult to stay focused on what is happening in the present. The mindfulness attention awareness questionnaire had Cronbach's alpha rating of (0.901) for its reliability in the present study.

Methodology

Pilot study:

Pilot study was conducted after the tools were developed and before data collecting began. It was carried out on (10%) of students (56) who were given tools. The piloting was carried out to examine the questionnaire's applicability and clarity, as well as the feasibility of fieldwork, and to identify any potential barriers to data collection that the researcher may encounter. Based on the outcomes of the pilot study, necessary changes were made, such as the omission and alteration of several items, to improve the questionnaire's consistency and clarity. The pilot sample was not included in the main study sample.

Reliability

The Cronbach's alpha value of reliability of the depressive symptom's questionnaire was 0.910, psychological flexibility questionnaire was 0.892, mindfulness attention awareness questionnaire was 0.901 and perceived social support questionnaire was 0.887. A jury of specialist in psychiatric and mental health areas then assessed the questionnaire's validity and reliability.

Ethical considerations:

Following the Faculty of Nursing' Ethical Committee approval (Ref.no.p.0228) as a prerequisite for proceeding with the current study. Official acceptance from the Vice Dean of Education and Students' Affairs, of the Faculty of Nursing, Mansoura University was obtained to collect data from the nursing students.

Field work:

The researchers sent the Google form link to students via What's App groups on their phones. The researchers explained the purpose of the study as well as the aspects of the questionnaire and there are no correct or incorrect answers. The researcher obtained informed consent from the participants online. Confidentiality was assured to the participants, and we assured them that whether they accept or refuse to participate, this will not affect their academic scores. The questionnaire will take approximately 10-15 minutes to complete. Participation was completely voluntary. Students receive no monetary compensation for their participation. Participants' progress through the survey was tracked by the researchers. Those who completed the questionnaires were thanked after they were submitted. We double-checked the accuracy and completeness of the data. The data's completeness; responses that did not meet the requirements were eliminated. The accuracy of the data was independently verified by two researchers. When selecting our final sample for data management and quality control, we strictly followed the inclusion criteria. To determine inclusion, the following criteria were used: (1) students have no psychotic illness; (2) enrollment in faculty of nursing at Mansoura University; and (3) consent and willing participation in the study. Finally, 551 Undergraduate nursing students from 4 different levels submitted detailed responses that were sufficiently thorough to be included in the study between June and September 2021.

Statistical Analysis

All statistical analyses were performed using SPSS for windows version 20.0 (SPSS, Chicago, IL). All continuous data were normally distributed and were expressed in mean ±standard deviation (SD). Categorical data were expressed in number and percentage. The Student's t test was used for comparison between two for variables with continuous data. One-way analysis of variance (ANOVA) test was used for comparison among more than two for variables with continuous data. Chi-square test was used for comparison of variables with categorical data. Reliability (internal consistency) of the depressive symptom's questionnaire, psychological flexibility questionnaire, mindfulness attention awareness questionnaire and perceived social support questionnaire was calculated. Statistical significance was set at $p < 0.05$.

Results:

Table (1): Distribution of Socio-Demographic Characteristics of Students in the study Sample (N= 551)

Socio-Demographic Characteristics	N	%
Age (years)		
18 –< 20	300	54.4
20 – 25	251	45.6
Mean ±SD	21.3 ±1.7	
Gender		
Male	162	29.4
Female	389	70.6
Marital status		
Married	23	4.2
Single	528	95.8
Academic Level		
First	133	24.1
Second	128	23.2
Third	154	28
Fourth	136	24.7
Grade Point Average (n=418)		
Low	3	0.7
Acceptable	3	0.7
Good	34	8.1
Very Good	216	51.7
Excellent	162	38.8
Income		
Insufficient	174	31.6
Sufficient	377	68.4
Family Member Number		
3 – 5	377	68.4
6 – 8	164	29.8
8 – 10	10	1.8

Notes:133 of participated students (24.1%) do not have GAP

Table (2): Distribution of psychological symptoms (Depression, anxiety and stress subscale) levels among students (N= 551)

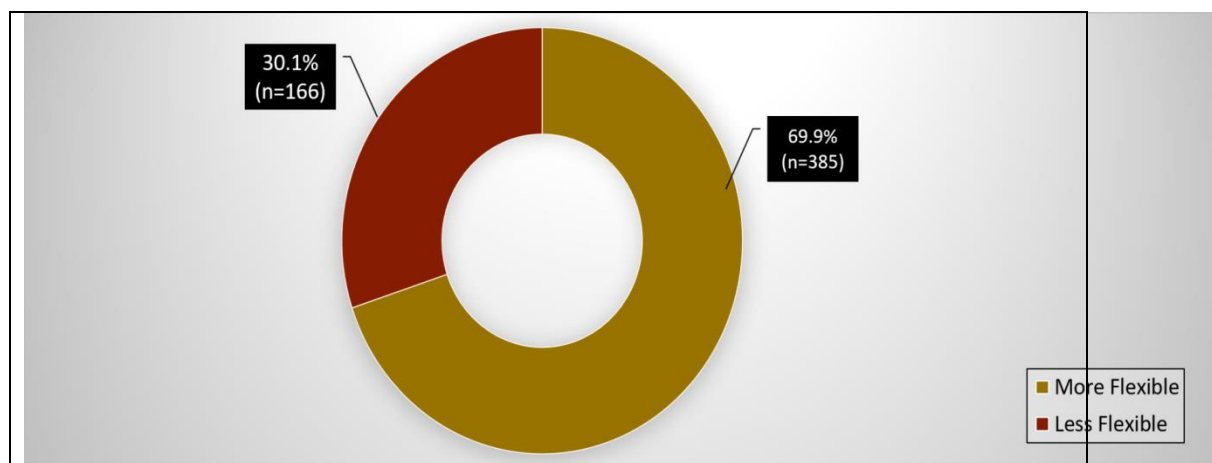|	Psychological symptoms subscale levels								Mean ±SD
	Normal		Mild		Moderate		Severe		
	N	%	N	%	N	%	N	%	
Stress subscale	502	91.1	39	7.1	10	1.8	0	0.0	7.3 ±3.4
Depression subscale	448	81.3	54	9.8	47	8.5	2	0.4	5.2 ±2.1
Anxiety subscale	412	74.8	52	9.4	59	10.7	28	5.1	5.0 ±2.6
Total Psychological Symptoms Score									17.5 ±8.4

Figure (1). Distribution of psychological Flexibility scores

Table (3): Distribution of Perceived Social Support Subscale Scores

	Range	Mean ±SD
Significant Other	4 – 28	19.0 ±7.4
Family	4 – 28	19.8 ±6.9
Friends	4 – 28	17.1 ±6.8
Total Perceived Social Support Score	12 – 84	55.9 ±18.1

Table (4): Distribution of Mindfulness Awareness and Attention Domain Scores

Mindfulness Attention Awareness Domain	Range	Mean ±SD
Observing Domain	3 – 15	10.1 ±3.4
Describe Domain	3 – 15	9.0 ±2.2
Awareness Domain	3 – 15	11.3 ±3.0
Non judging Domain	3 – 15	10.2 ±3.2
Non reactivity Domain	3 – 15	8.4 ±2.8
Total Mindfulness Score	26 – 71	48.9 ±6.9

Table (5): Correlation between Socio-Demographic Characteristics and Total Psychological Symptoms Scores

Socio-Demographic Characteristics	Total Psychological symptoms Scores or Depression, Anxiety and Stress Symptoms Scores				
	Mean ±SD	Student T-test		ANOVA Test	
		T	P	F	P
Age (Years)					
18 – >20	16.8 ±8.6				
20 – 25	18.0 ±9.1	1.579	0.115		
Gender					
Male	15.7 ±6.7				
Female	16.9 ±8.8	1.557	0.12		
Marital Status					
Married	14.6 ±6.4				
Single	16.6 ±8.4	1.127	0.260		
Academic Level					
First	15.8 ±7.2				
Second	18.3±8.1				
Third	18.5 ±8.8				
Fourth	17.7 ±8.4			3.092	0.027

Socio-Demographic Characteristics	Total Psychological symptoms Scores or Depression, Anxiety and Stress Symptoms Scores				
	Mean ±SD	Student T-test		ANOVA Test	
		T	P	F	P
GPA (n=418)					
Low	20.0 ±9.1				
Acceptable	15.0 ±7.2				
Good	16.0 ±7.5				
Very Good	17.9 ±8.4				
Excellent	25.3 ±11.1			16.594	<0.001**
Income					
Insufficient	15.7 ±7.2				
Sufficient	21.5 ±9.6	7.099	<0.001**		
Family Member Number					
3 – 5	16.4 ±8.0				
6 – 8	18.1 ±8.7				
8 – 10	16.9 ±7.0			2.456	0.087

* Significant statistic <0.005   *** Highly significant <0.001*

Table (6): Correlation between Socio-Demographic Characteristics and Psychological Flexibility Scores

Socio-Demographic Characteristics	Psychological Flexibility Scores				
	Mean ±SD	Student T-test		ANOVA Test	
		T	P	F	P
Age (years)					
18 – >20	21.6 ±11.1				
20 – 25	21.9 ±11.3	0.328	0.742		
Gender					
Male	20.3 ±9.9				
Female	21.1 ±10.5	0.828	0.408		
Marital Status					
Married	17.7 ±7.7				
Single	20.9 ±10.3	1.471	0.142		
Academic Level					
First	20.1 ±10.8	133			
Second	21.1 ±10.9	128			
Third	22.8 ±11.2	154			
Fourth	22.4 ±11.1	136		1.775	0.155
GPA (n=418)					
Low	19.3 ±9.8				
Acceptable	20.3 ±8.7				
Good	20.4 ±10.3				
Very Good	22.3 ±11.5				
Excellent	22.2 ±10.5			3.577	0.007*
Income					
Insufficient	20.2 ±11.3				
Sufficient	25.0 ±10.9	4.452	<0.001**		
Family Member Number					
3 – 5	20.9 ±11.2				
6 – 8	23.3 ±11.5				
8 – 10	24.1 ±9.3			2.799	0.062

* Significant statistic <0.005   *** Highly significant <0.001*

Table (7): Correlation between Socio-Demographic Characteristics and Mindfulness Attention Awareness Scale Scores

Mindfulness Awareness Attention Scores					
Socio-Demographic Characteristics		Student T-test		ANOVA Test	
	Mean ±SD	T	P	F	P
Age (Years)					
18 – >20	49.3 ±7.3				
20 – 25	48.5 ±6.4	1.357	0.175		
Gender					
Male	48.6 ±6.5				
Female	49.1 ±7.1	0.688	0.492		
Marital Status					
Married	50.0 ±6.2				
Single	48.9 ±6.9	0.706	0.481		
Academic Level					
First	50.8 ±7.3				
Second	47.9 ±7.0				
Third	48.9 ±6.4				
Fourth	48.2 ±6.6			5.072	0.002*
GPA (n=418)					
Low	44.7 ±12.1				
Acceptable	49.0 ±6.1				
Good	49.4 ±7.6				
Very Good	48.1 ±7.0				
Excellent	51.7 ±5.9			7.148	<0.001**
Income					
Insufficient	47.4 ±7.2				
Sufficient	50.2 ±6.8	4.409	<0.001**		
Family Member Number					
3 – 5	49.3 ±6.9				
6 – 8	48.5 ±6.9				
8 – 10	46.0 ±5.3			1.682	0.187

* Significant statistic <0.005   ** Highly significant <0.001

Table (8): Correlation between Socio-Demographic Characteristics and Perceived Social Support Scores

Socio-Demographic Characteristics	Perceived Social Support Scores				
		Student T-test		ANOVA Test	
	Mean ±SD	T	P	F	P
Age (years)					
18 – >20	55.2 ±18.5				
20 - 25	56.8 ±17.6	1.027	0.305		
Gender					
Male	57.2 ±17.3				
Female	55.4 ±18.4	1.078	0.282		
Marital Status					
Married	61.0 ±18.8				
Single	55.7 ±18.1	1.370	0.171		
Academic Level					
First	56.7 ±18.8				
Second	53.0 ±18.7				
Third	55.2 ±18.0				
Fourth	58.5 ±16.9			2.166	0.091

Socio-Demographic Characteristics	Perceived Social Support Scores				
		Student T-test		ANOVA Test	
	Mean ±SD	T	P	F	P
Academic Score (n=418)					
Low	48.3 ±15.6				
Acceptable	51.2 ±21.3				
Good	50.8 ±18.8				
Very Good	56.1 ±16.6				
Excellent	59.7 ±20.7			2.185	0.070
Income					
Insufficient	52.3 ±17.7				
Sufficient	57.5 ±18.1	3.189	0.002*		
Family Member Number					
3 – 5	57.0 ±18.1				
6 – 8	53.2 ±18.3				
8 – 10	58.5 ±11.2			2.591	0.076

    * Significant statistic <0.005   *** Highly significant <0.001*
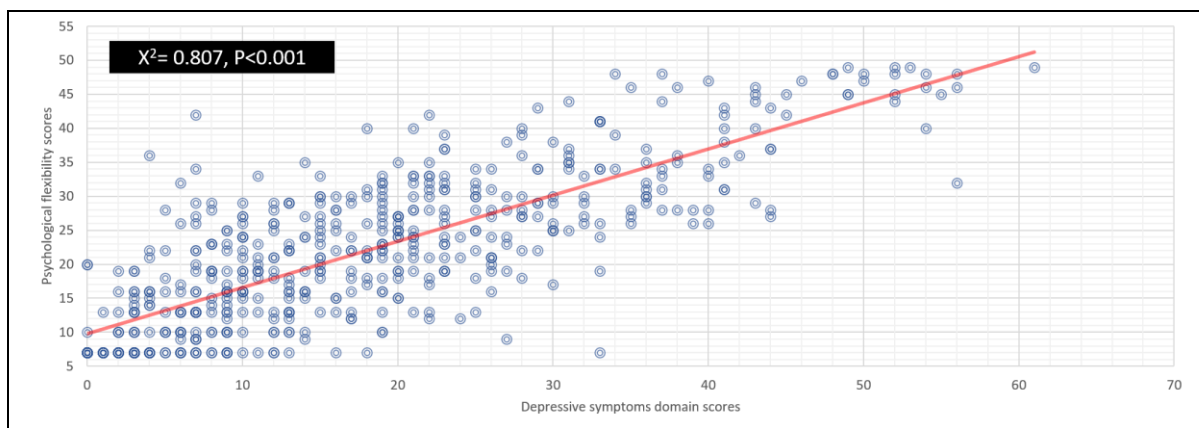
Figure (2): Correlation between Psychological Flexibility and Psychological symptoms(Depressive, anxiety, stress Symptoms) Scores.
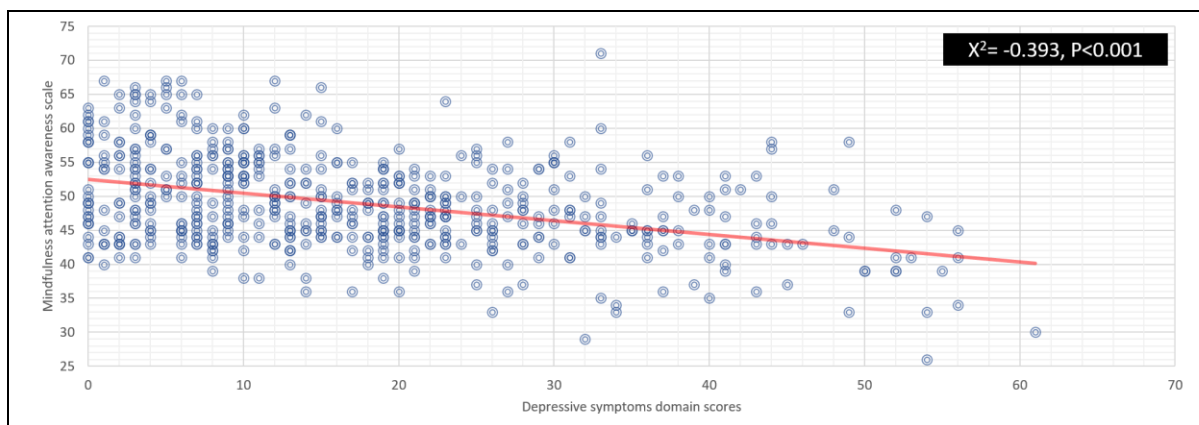
Figure (3): Correlation between Mindfulness Awareness Attentionand Psychological symptoms (Depressive, anxiety, stress Symptoms) Scores
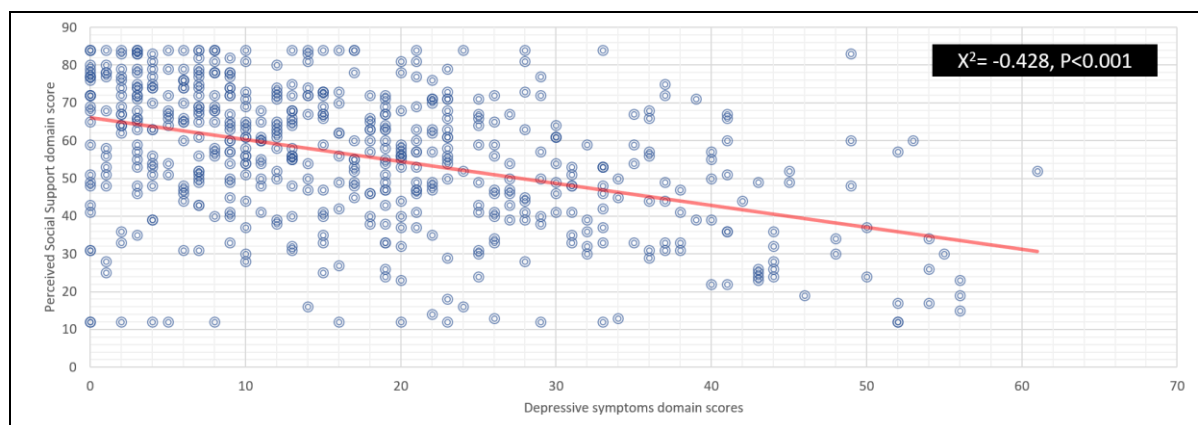
Figure (4): Correlation between Perceived Social Support and Psychological symptoms (Depressive, anxiety, stress Symptoms) Scores.

Table (1): Illustrates that the studied sample size was 551 college studentsincluding (24.1%) of them were first academic level without GPA, with mean age ± SD of 21.3 ±1.7 years. Less than three quarter of the students (70.6%) was female, and the majority of the sample (95.8%) was single. The sample size was for each academic study level ranges from (23.2%) to (28.3%). More than half of the students (51.7%) got a very good grade, and more than a quarter got an excellent academic grade. Over half of them (68.6%) their family members were 3-5 members and had sufficient monthly income.

Table (2): Represents that the majority of the students in the study had a normal stress level (91.1 %). More than three-quarters (81.3%) had a normal level of depression, whereas (9.8%, 8.5%, and 0.4%) respectively, had mild, moderate, and severe depression. Nearly three-quarters (74.8%) had a normal level of anxiety, while (9.4%, 10.7%, and 5.1%) had mild, moderate, and severe anxiety, respectively.

Table (3): Reveals that students of the studied sample perceived social support from their families and significant others more than from their friends.

Table (4): Reveals that mean of awareness were slightly increased than other domains.

Table (5): Show that there is a positive significant correlation between student excellent gardening, family monthly income, and psychological symptoms scores.

Table (6): Show that there is a positive significant correlation between student excellent gardening, family monthly income, and psychological flexibility scores.

Table (7): Show that there is a positive statistically significant correlation between student academic level, excellent grading, family monthly income, and mindfulness attention awareness scores.

Table (8): Illustrates that there is a positive

significant correlation between family monthly income and perceived social support.

Figure (1): Represents over half of the participants (69.9%) had more flexible psychologically, while nearly a third (30.1%) had less flexible psychologically.

Figure (2): Displays there is a positive significant correlation between psychological flexibility and psychological symptoms scores.

Figure (3): Represents that there is a negative significant correlation between mindfulness and psychological symptoms score.

Figure (4): Show that there is a negative significant correlation between perceived social support and psychological symptoms scores.

Discussion

Psychological disorder (especially depressive disorder) are a significant clinical issue due to the economic, interpersonal, and societal effects associated with low quality of life, high rates of co-morbidity, and high rates of relapse. As a result, knowing what variables predispose people to depressive symptoms, as well as associated etiological pathways and potential protective factors, has piqued researchers' attention. Therefore, our study aimed to explore psychological flexibility, mindfulness, and perceived social support as predictors of depressive symptoms.

Our findings revealed that all students experience certain forms of stress, anxiety, and depressive symptoms. Most of the studied sample experience normal levels of stress, anxiety, and depressive symptoms. Less than one quarter of them experienced mild to moderate levels of depression. In **Yu et al. (2021)** study of 1681 college students, they discovered that the prevalence of depressive symptoms was (56.8%). The general incidence among Chinese college students is 23.8 percent (**Gao et al.,**

2020) and Systematic reviews have found that the prevalence of depressive symptoms among college students is around 33% (**Sarokhani et al., 2013**).

Concerning psychological flexibility, in the current study, nearly one-third of participant students had low psychological flexibility and the result showed a significant positive correlation between psychological flexibility and psychological symptoms. Similarly, **Kato's (2016)** study of 633 Japanese university students found that higher levels of depressive symptoms were found to be associated with psychological inflexibility. **Bonilla-Sierra et al**. (**2021**) investigate anxiety and depression burden in symptomatology in 191 undergraduate and graduate healthcare students enrolled in clinical practice. They discovered that low levels of these symptoms, as well as psychological inflexibility, were associated with depressive symptomatology.

Regarding, the relationship between socio-demographic characteristics with psychological symptoms and psychological flexibility, our results indicated that there is a significant correlation between students' Grade Point Average (GPA), family monthly income and depressive symptoms, and psychological flexibility. Similarly, Awadalla, Davies, and Glazebrook (2020) suggested that depressive symptoms have an impact on academic performance.

Our results revealed that there is a negative significant correlation between both perceived social support with psychological symptoms and mindfulness attention awareness. This result is consistent with, **Grey et al., (2020)** found that individuals who reported high levels of social support had a 63 percent lower likelihood of developing depressive symptoms than individuals who reported low levels of social support. **Parmentier et al., (2019)** informed that mindfulness was found to reduce depression and anxiety by enhancing reappraisal (which is inversely associated with depression and anxiety) and reducing worry, rumination, and suppression (negatively associated with depression and, expect for suppression, with anxiety). The current study indicated that students with a high (GPA), sufficient family monthly income had high mindfulness attention awareness scores. This result is consistent with **Ahmadi et al., (2014)** studying 273 undergraduate students studying in the first semester. According to them, the respondents' average degree of mindfulness is 3.77, and there was no significant relationship between mindfulness and age, gender, religion, race, family, or educational background. In contrast to our findings, McBride and Greeson (2021) found no link between mindfulness traits and GPA.

Conclusion:

Based on the study findings, it can be concluded that; there is a statistically significant positive correlation between psychological flexibility and psychological (especially depressive symptoms) symptoms. There is a negative correlation between perceived social support and mindfulness and depressive symptoms. Psychological flexibility perceived social support and mindfulness may act as protectors against depressive symptoms.

Recommendations:

Based on the current study findings, the following recommendations are suggested: intervention focusing of mindfulness and psychological flexibility may help students with psychological symptoms (especially depressive symptoms).

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