

## Stress Factors and Coping Strategies as Perceived by Nursing Students

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### Abstract:

**Background:** Nursing students are becoming under increasing stress levels financial and personal in today's environments. **Aim of the study:** the aim of the current study was to investigate stress factors and coping strategies as perceived by nursing students, Damanhour University. **Subjects and methods: Research design: Subjects:** 330 nursing students were involved in this study selected using a proportional allocation techniques. **Setting:** Faculty of Nursing, Damanhour University in the academic year 2013-2014. **Tools:** three tools were used: Perceived Stress Scale, Physio-Psycho-Social Stress Scale and Copying strategies used by nursing students to cope with stress. In addition to the socio-demographic characteristics. **Results:** A positive intermediate significant correlation was found between perceived stress scale and physio-psycho - social stress. Also, a moderate level was found in perceived stress scale and physio-psycho social stress scale. In perceived stress scale, the highest percentage of stress factor was from the assignment and work load while the highest percentage in physio-psycho -social stress was psychological (emotional) stress. Furthermore, the most common stressful clinical area was medical-surgical and critical care departments. The most coping strategy used by nursing students was transference. **Conclusion:** The most common stress factors among nursing student were stress from the assignment, work load and psychological stress (stressors). Also, the coping strategy utilized by them was transference. In addition to the most common stressful clinical area was medical-surgical and critical care. **Recommendations:** Nurse educators should help nursing students to overcome stress during clinical practice through emotional and social support. Future research should focus on the different coping strategies and stress interventions utilized by nursing student during stress situation.

**Keywords:** Stressors; Coping Strategies; Nursing Students; Perceived Stress Scale; Physio-Psycho-Social Response Scale.

### Introduction:

Stress is an integral part of human life. It is in everything and nothing in life without stress.<sup>(1)</sup> It occurs when a situation is overly complex and demanding to the individual. It has a major impact on his physical, psycho and social health.<sup>(2)</sup>

Stress in nursing is attributed largely to: the physical labor, suffering and emotional demands of patients and families, work hours, work shifts, interpersonal-relationships, professional conflict and other pressures that are central to the work nurses do, workload, competition, lack of knowledge and information sharing with peers and physicians.<sup>(3,4)</sup> Moreover, nursing students are likely to experience stress more than friends and colleagues enrolled in other programs.<sup>(2,5)</sup>

Sources of stress among nursing students can be viewed from six main items namely:<sup>(6)</sup> Stress from lack of professional knowledge and skills: ability and feeling of student to achieve knowledge and skills of teacher's content.<sup>(7)</sup> Stress from assignments and workload: describes feelings of stress in relation to balancing their academic demands with their clinical demands.<sup>(8)</sup> Stress from taking care of patients: in ability of nursing student to care for patients after learning the principles, in addition to fear of making mistake. <sup>(9)</sup> Stress from clinical environment: achieve a set of competencies, integrate the theory to practice, to make decision making which will enhance the critical thinking.<sup>(10)</sup> Stress from teachers and nursing staff: includes stress from the relationships with nursing staff and

nursing teachers which contribute a decrease the confidence level, self-esteem which subsequently facilitate their learning.<sup>(11)</sup> Stress from peers and daily life: forms the major life events and daily hassles and peer externalizing symptoms, which lead to life-threatening circumstances.<sup>(12)</sup>

Furthermore, another sources of stress among nursing students can be viewed from three main items namely: physical stress (stressors), psychological stress (stressors) and social stress (stressors).<sup>(6)</sup>

Physical stress (stressors): exist when the body actually becomes weaker or stronger depending on students mental state.<sup>(13)</sup> Psychological stress (stressors):includes anxiety, and tension, uncontrollable worrying, irritability, distractibility and difficulty in learning and problem in communicating effectively with others.<sup>(14)</sup> Social stress (stressors):refers to the immediate response to a change in social life of an individual either in response to separation or confrontation. <sup>(15)</sup>

Coping strategies play a vital role in the stress adjustment process, lead to lower stress levels and better mental health.<sup>(16)</sup> Four major coping strategies namely: transference, avoidance, problem – solving, and optimistic coping. <sup>(6)</sup>

Transference: "efforts mean to transfer one's attention from the stressful situation to other things". Avoidance: efforts mean to avoid the stressful situation. Problem -solving: efforts mean to manage or change the stress arising out of a stressful situation and optimistic coping: efforts mean to keep a positive attitude toward the stressful situation. <sup>(6)</sup>

In U.S.A study was conducted by Konstantinos and Christina<sup>(17)</sup> to study factors influencing stress and job satisfaction of nurses working in psychiatric units, reported that strong negative relationship was found between, inter-professional collaboration, stress and job satisfaction. While in China Song, et

al. <sup>(18)</sup> studied depressive symptoms and personality factors in Beijing and Hong Kong college freshmen students concluded that, the higher prevalence of current depressive symptoms in college Freshman in Hon Kong suggests that their mental health is not as satisfactory as that of their counter parts in Beijing. Also, Furnham<sup>(19)</sup> studied, the psychology of behavior at work reported that, student worry about their ability to assist clients without becoming emotionally involved. Moreover, in Saudi Arabia Al-barrk studied sources of stress as perceived by nursing students at King Saud University Campus reported that, nursing students experience a clinical component, which is highly stressful. <sup>(20)</sup>

In Egypt, Amr et al. <sup>(21)</sup> studied stress among Mansoura baccalaureate nursing students reported that, stress management, assertiveness skills, time management and counseling sessions may be effective in reducing stress. Also, Zaghloul <sup>(22)</sup> studied developed and validated a tool to assess nurses stress concluded that, demonstrated a short valid and reliable scale to assess the stressful areas for nurses.

### **Significance of the study:**

It was observed during the experience with the faculty of nursing student that they do not have enough time to complete their assignments due to crowded lecture times, number of hours they spend in the clinical practice setting. In addition to, the transportation problems in the El-Beheria governorate and there is no academic advisors available in their faculty to help them.

So, this study was conducted to investigate the stress factors and coping strategies as perceived by nursing students, Damanhour University. It is hoped that identify these factors will motivate nursing faculty member to help nursing students to cope with them effectively.

**Aim of the study:**

The aim of the current study was to:

Investigate stress factors and coping strategies as perceived by nursing students at the Faculty of Nursing, Damanhour University.

**Research questions:**

1. What are stress factors perceived by nursing students?
2. What are the coping strategies adopted by nursing students?

**Subjects and Method:****Design:**

A descriptive cross sectional design was used.

**Setting:**

The study was conducted at the Faculty of Nursing, Damanhour University at El Beheira governorate. It is located inside Damanhour National Medical Institute. It is composed of three floors. It included nine departments namely: Medical surgical nursing, critical care, obstetrics and gynecology, community health nursing, nursing administration, psychiatric and mental health nursing, paediatrics nursing, geriatrics and nursing education. Each department has different clinical area, nursing student practice in different clinical areas for each department.

**Subjects:**

Target population faculty of nursing students actually attended during the period of data collection. Nursing students in the four academic years (year I, year II, year III, year IV) Total number of students enrolled at the Faculty of Nursing, Damahnour University was 937 at the time of data collection. They were distributed as follows: first year (n = 248), second year (n = 370), third year (n = 182) and the fourth year (n = 137) students at the time of data collection for this study.

330 students were selected using proportional allocation method based on prevalence of serious arguments

(stress) of instructors 8.9% (which is the least frequent stressor), precision (of errors) of 4%,  $\alpha=0.05$ .<sup>(21)</sup>The students were selected as follow: first year (n = 87), second year (n=131), third year (n=64), and the fourth year (n=48) students. The sample size was calculated using EPI-info 7 software (WHO software).

**Tools of data collection:**

Three tools were used in this study:

**Tool (I): Perceived Stress Scale:** It was developed based on Khater,<sup>(6)</sup> Sheu et al.,<sup>(23)</sup> and the review of related literature<sup>(6,23-28)</sup> to determine nursing students perceived stress levels and types of stressors. It consists of 41 sub-items under six main items namely: Stress from lack of professional nursing knowledge and skills (6 sub-items), Stress from assignments and work load (7 sub-items), stress from taking care of patients (7 sub-items), stress from clinical environment (7 sub-items), stress from clinical nursing teachers and nursing staff (8 sub-items), stress from peers and daily life (6 sub-items).

Responses were measured a five – point Likert - scale ranged from 4 “very often to “0” never.

Both total stressors items and nursing students' sub-items discrete scores were summed. The Higher scores indicate higher level of stress; the following scale was categorized into low, Moderate, and high based on score % with cutoff point of: low < 33.3%, moderate 33.3%-66.6% and high > 66.6%.

**Tool (II) :Physio-psycho-social stress scale :** It was developed based on Khater, Zeheya and Shaban<sup>(6)</sup> Sheu ,Lin and Hwang<sup>(23)</sup> and the review of related literature<sup>(6, 24-28)</sup> to identify nursing students physical, psycho (emotional) and social stress (stressor). It consists of 26 sub-items under three main items namely: physical stressors (8 sub-items), psycho stressors (8 sub-items),

and social behavioral stressors (10 sub-items). The overall items were 26.

Responses were measured on a five – point Likert - scale ranged from 4 “very often to “0” never.

Both total stressors items and nursing students' sub-items discrete scores were summed. The higher score means presence of more and serious stress stressors reported and for lower score Physio – Psycho – Social stress (stressors). To determine the level of stress, the following scale was categorized into: low, moderate, and high based on score % with cutoff point of: low <33.3%, moderate 33.3%-66.6% and high >66.6%.

**Tool (III): Copying strategies:** It was developed by the researchers based on Khater et al.,<sup>(6)</sup> Sheu *et al.*,<sup>(23)</sup> and the review of related literature<sup>(6,25-28)</sup> to attain, facilitate and return nursing student to a balanced state as well as reducing the negative effects of stress. It consists of four main coping strategies used by nursing students to overcome their stress, namely: transference for example (eating large meals, taking a long sleep, watching TV, talking a shower, walking, reading), staying optimistic for example (taking positive attitude in dealing with everything in life, having the confidence to overcome difficulties, crying feeling moody, sad and helpless, getting emotional support from others, criticizing myself), problem-solving for example (listing priorities to solve stressful events, talking with others to solve the problem), avoidance (avoiding teachers, losing one's temper, expecting other to solve the problem). Each student was told to select the coping strategy which is the most used by him /her.

In addition to the socio-demographic characteristics of nursing student containing the gender, age, year level, family monthly income, hours spent for studying, hours of keeping sleeping at night. Responsibility for his/ her family and from his/ her family.

### **Content validity and Reliability:**

The three tools were tested for content validity using five experts' reviewers: three professors from nursing Administration department and two from nursing education department. Accordingly necessary modifications were done. Tool I & tool II were tested for its reliability by measuring the internal consistency of items using Cronbach's alpha. The values were revealed as follow in tool I: I 0.74, II 0.77, III 0.81, IV 0.77, V 0.85, VI 0.70. The values were revealed as follow in tool II: I 0.82, II 0.81, and III 0.84 respectively.

### **Pilot study:**

A pilot study was done on the faculty of nursing students (30 students) of the total study subjects in order to test the clarity of the questionnaire and estimate the time needed to fill it. Faculty of nursing students who were included in the pilot study was excluded from the main study subjects.

### **Field work:**

Data were collected through self-administered questionnaires that were distributed among the four academic year nursing students 2013-2014 at the end of the 2<sup>nd</sup> semester. Each subject took a period around 25 minutes. It took a four weeks period started from 23/4/2014 to 22/5/2014.

### **Administrative and ethical considerations:**

An official permission from the dean of the faculty of nursing was obtained. The purpose of the research was explained to all the faculty nursing students. Confidentiality and anonymity were assured.

### **Statistical analysis:**

Data were collected, coded and fed to statistical software IBM SPSS version 20. All figures were constructed using Microsoft office excel program. Statistical analysis was done using two tailed test and alpha error of 0.05. Regarding scoring for stressors, discrete scores for items

were summed together and the then transferred to score % as mentioned before.

Descriptive statistics as frequency and percent were used for categorical data. Chi-square test was used to test relation between stress levels and sample characteristics but if the expected frequencies were small, Mont Carlo test was used for exact probability. Linear correlation analysis with used to test the strength and nature of relation between psychosocial and perceived stress.

### Results:

**Table (1):** Shows that the total number of 330 nursing students shared in the study approximately three quarter of them were females. Regarding their age, 63.5% of nursing students were ranged from 20 years to less than 22 years old. As regards to nursing students' year level, the highest percentages of them were 39.5% in the year II compared to 14.6% of them in the year IV.

Concerning family monthly income nearly three quarters of them (73.9%) were adequate. In relation to hours spend for studying, 34.7% of nursing students studying four hours to less than six hours compared to 7.9% of them studying 8 hours and more/day. While, hours of sleep/night 42.2% of nursing students were sleeping 8 hours to less than 10 hours compared to 5.9 % of them were sleeping 4 hours to less than six hours. The majority of them (87.2%)

**Table (3):** Illustrates that there were a significant differences in perceived stress level of nursing students and their characteristics in each of the following: the academic year ( $p = 0.000$ ), family monthly income ( $p= 0.005$ ), hours spent for studying ( $p=0.016$ ) and hours of sleeping/ night ( $p=0.001$ ). As regards the academic year, the highest percentages of highly stress was in second year (74.6%). Concerning

were responsible from their families.

**Table (2):** illustrates that the overall level of stress as perceived by nursing students in both items (perceived stress scale items and physio – psycho – social stress) were moderate (60.8%, 65.0%) respectively. Regarding nursing student perceived stress scale sub-items the highest percentage of highly stress was from assignment and work load about three-fourth (79.0%) and the second one of highly stress was stress from peers and daily life (72.7%) and the remaining four sub-items of highly stress could be ranked in descending order as stress from nursing clinical teachers and nursing staff (59.0%), stress from taking care of patients (55.3%) , stress from clinical environment (52.3%), and the last one was stress from lack of professional nursing knowledge and skills (44.1%).

**Figure (1):** Reveals that more than half of nursing student (57.1%) stated that the most stressful clinical department was medical surgical nursing department followed by critical care department (23.7%).

**In figure (2):** A positive intermediate significant correlation was found between perceived stress and physio-psycho social stress.

**Figure (3):** Indicates the highest percentages of the main strategies adopted by nursing students were ranked in descending order as follow; transferences (43.2%) staying optimistic (23.4%). Problem solving (17.0%) and avoidance (16.4%).

family monthly income, the highest percentages of highly stress (73.3%) was in inadequate income. Meanwhile, the highest percentages of stress level in the hours spent for studying and the hours of sleep/night were (74.4%, 74.1% respectively), having six hours in both of them.

**Table (4):** Reveals that there were significant differences in both of the academic year and the hours of sleeping at night and their physio-psycho-social stress (0.000, 0.004

respectively). The highest percentage of highly stress in both of them was academic year four was (45.8%) and they were sleeping at night for 8 hours and more (46.2%).

#### **Discussion:**

Stress in students is an area of growing concern. It may result in psychological distress, physical complaints, behavior problems, poor academic performance and inability of students to concentrate in their studies.<sup>(29)</sup> This can occur at different time periods during the academic years in a faculty.<sup>(30)</sup>

The current study revealed that the overall total in both stress factors (perceived stress scale and physio-psycho-social stress scale) were moderate. This could be attributed to the fact that, the overall total of stress in both perceived stress scale and physio-psycho-social stress, if reached to the high level of stress may expose them to the mental disorder and maladapted student behaviors. The same were found by Sheu et al.<sup>(23)</sup> Ramesha<sup>(24)</sup> Chan, Winnie and Daniel,<sup>(8)</sup> Singh, Sharma and Sharma,<sup>(29)</sup> and Smith, McGullough and Poll.<sup>(31)</sup>

Also, the results of this study revealed that in perceived stress scale the highest percentages of highly stress was from the assignments and work load followed by stress, from peers and daily life. This could be attributed to the fact that they may be loaded with academic demands as assignments, studying lectures, quizzes, home works, mid-terms exams and they are not able to finish their work on time. This finding goes with Eswi, Radi and Youssri<sup>(32)</sup> who reported that the assignments and workload had the maximum contribution in causing stress. Also, this result go relatively with the results of Khater et al.<sup>(6)</sup> In contrast, Chiang<sup>(33)</sup> and Mohamed and Ahmed<sup>(34)</sup> indicated that the factors ranked one in the major sources of stress was stress from lack of professional knowledge and skills and the last factor ranked was stress from peers and daily life.

Furthermore, the study showed that, the overall total of physio-psycho-

social stress was moderate. This finding may be due to that the highest percentage was the emotional stress than physical and social. This result could be attributed to the nursing students' tendency to feel threatened all the time and when they try to seek social and academic support from their nursing teachers they may not be available at this time, no office hours is scheduled for discussion. Similarly, Lin<sup>(35)</sup> reported that psychological stress (emotional stressors) commonly occurred in response to clinical stress. Also, Chiang<sup>(33)</sup> focused on psychological responses to stress. In contrast the finding of Shue et al.<sup>(23)</sup> concluded that, the most common response to stress was social (stressors).

In addition, the study revealed a significant positive correlation between perceived stress scale and physio-psycho social stress. They may be due to if perceives stress scale increases, spontaneously physio-psycho-social stress also increases. This result was in the same line with Labrague.<sup>(28)</sup> Also, this finding was supports by Lazarus and Richards's model.<sup>(36)</sup>

Moreover, the socio-demographic characteristics of nursing student academic year revealed that there was a significant difference in both perceived stress scale and physio-psycho social stress scale. The highest percentage of highly stress level in the perceived stress scale was found in the second academic year, then third, fourth and first. Also, the most stressful clinical area from different scientific departments was the medical-surgical then the critical care. This result was expected and may be attributed to the fact that nursing student of second academic year are assigned to the clinical area for the first time where they are exposed to patients in the hospital of Damanhour National Medical Institute with a variety of patients with medical-surgical conditions and they are contact and give different nursing care and apply different procedures for these patients. In addition, in the critical care units they may feel of fear and anxiety of making a

mistake, causing harm during caring for these patients. This result consistent with Hart and Rotem and Elliot<sup>(37,38)</sup> they found that the initial clinical experience was the most anxiety and fear producing part of their clinical experience. Moreover, this result consistent with Tully<sup>(39)</sup> who reported that the second-year students presented higher levels of stress than their first-year colleagues. In contrast, Petal, Sudduth and Jakopack<sup>(40)</sup> and Nancy<sup>(41)</sup> reported high levels of stress among nursing students in their first course of the bachelor science nursing program.

Regarding the socio-demographic characteristics of nursing students' academic year and the physio-pscho-social stress there was a significant difference. This result was expected which in turn the perceived stress was affected therefore, physio -pscho-social is affected too, that is negatively affecting their own health. The stressful one was psychological (emotional) stress in their fourth year which may be due to the final evaluation process from the teachers they were confused by what they learned in the faculty and what in the reality was expected from them in practice. This finding was supported by Kim<sup>(42)</sup> who reported that, the most stressful and anxiety producing clinical experiences for nursing students before graduation are evaluation process. In contrast, Chiang<sup>(33)</sup> pointed that no significant difference between academic year of nursing students concerning physio-pscho-social status.

Concerning gender and age of nursing students and their perceived stress level and physio-psycho-social stress no significant difference was found. This result may be attributed to the nursing students become more stressed when they become older due to their worries about their unknown future when they graduate from the faculty. This result is consistent with Uwaoma Obi-Nwosu and Aguocha<sup>(43)</sup> However the finding contradicting with Nicolás et al.<sup>(44)</sup> and Rurth.<sup>(45)</sup> They found a statistical significant difference

between stress with age and gender.

Furthermore, a significant difference was found between nursing students perceived stress scale, physio-psycho-social stress and the hours spent for studying. This result is not surprising as nursing students cannot manage their time for academically demanding stuff, rest, sleeping, daily life activities, time spending with their family, transportation time from home to the faculty, and their ability to work in private hospital if they are working. All of these factors may increase feeling of stress in physio-psycho-social. This finding goes with Armando and Dario<sup>(46)</sup> and Johannsen, Bjurshammar and Gustafsson<sup>(47)</sup> In this respect Broscious and Saunders<sup>(48)</sup>, Sprengeland and Job<sup>(49)</sup> stated that clinical teacher consider the time demands of the mentors and work with them to alleviate any issues and that the experience last only one day.

Moreover, a significant difference was found between nursing students perceived stress scale and family monthly income and the highest percentages was in adequate family monthly income. This may be attributed to the fact that, they may live in stress as they have only one source of insufficient income that does not cover all their needs as education, food, clothing, health, bills...etc. Similar results were reported by Gilany, Amr and Hammed<sup>(50)</sup> they found that perceived stress scale generally increase as house-hold income decrease. In this respect, Gilany et al.<sup>(51)</sup> stated that Egyptian students suffer from more stress due to financial difficulties as they need money for fees, cost of books, equipment and sometimes private tuition, in contrary to Saudis that they have a financial support.

In addition, the study finding reveled that there was a significant difference between perceived stress level of nursing students and the hours of sleeping at night, as inadequate sleeping hours, this results may be attributed to that they may have over

load with a role conflict as students in the nursing faculty, demands from university activities, students work in private hospitals due to their poor socioeconomic status all of these multiple roles may put them in stress. This result was in accordance with Rofidah et al.<sup>(52)</sup> They reported that the majority of students do not get enough sleep. In this context, Womble<sup>(53)</sup> concluded that individuals who sleep fewer hours at night may have psychological maladjustment and this increase their anxiety and stress.

In relation to nursing students' responsibility for the family, and from the family, no significant difference was detected in perceived stress and physio-psycho social stress. This may be attributed to the nursing students family is not considered as a stress factor. This result consistent with American Psychological Association.<sup>(54)</sup>

Concerning all stress factors (perceived stress and physio-psycho social stress) facing the nursing students, they used different coping strategies to cope with these stress. The study revealed the most coping strategies used by them was transference followed by staying optimistic. While, the least-used coping strategies were the problem solving and avoidance. This result may be attributed to the system of education in the faculty of nursing does not foster the development of synthesizing, problem solving and creative thinking abilities. These findings are in line with Kaur et al.<sup>(16)</sup> who stated that listening to music, praying to God and sharing and seeking help during stressful situations was on the top most of the coping strategies being used by nursing students. As well as the students were taking social support by sharing and seeking help, telephoning, and staying around people. However, the finding was incongruent with Pagana<sup>(55)</sup> who reported that nursing students used "Problem Focused Coping strategies then the least used avoidance and transference strategies.

Moreover, Gibbons<sup>(56)</sup> reported that nursing students use some effective coping strategies, problem-focused coping methods such as problem solving or seeking social support from peers, families or instructors.

#### **Conclusion:**

The most common stress factors among nursing student were stress from the assignment, work load and psychological stress (stressors). Also, the coping strategy utilized by them was transference. In addition, to the most common stressful clinical area was medical-surgical and critical care.

#### **Recommendations:**

Nurses as educators play a vital roles in assisting nursing students in clinical education to relieve feelings of stress, therefore it is recommended that:

- Develop an orientation programs conducted to the novice students and stress management information should be provided.
- Teaching staff should orient nursing student to the patients in each academic year before assigning them to the clinical areas in different scientific departments.
- Teaching staff should conduct daily meeting with nursing students after clinical experiences to discuss patients and students problems.
- Teaching staff should give frequent feedback for the student's performance.
- Stress and time management technique should involve in nursing curriculum to promote student mentally and physically well-being.
- Support system from friends, peers should be provided for nursing students to cope with stressors as well as support from seniors.
- Exercises and sports should be encouraged to practice regularly combining with extra-activities in the faculty.

#### **Recommendations for further studies:**

- Conduct the same study in other faculties of nursing in Egypt.



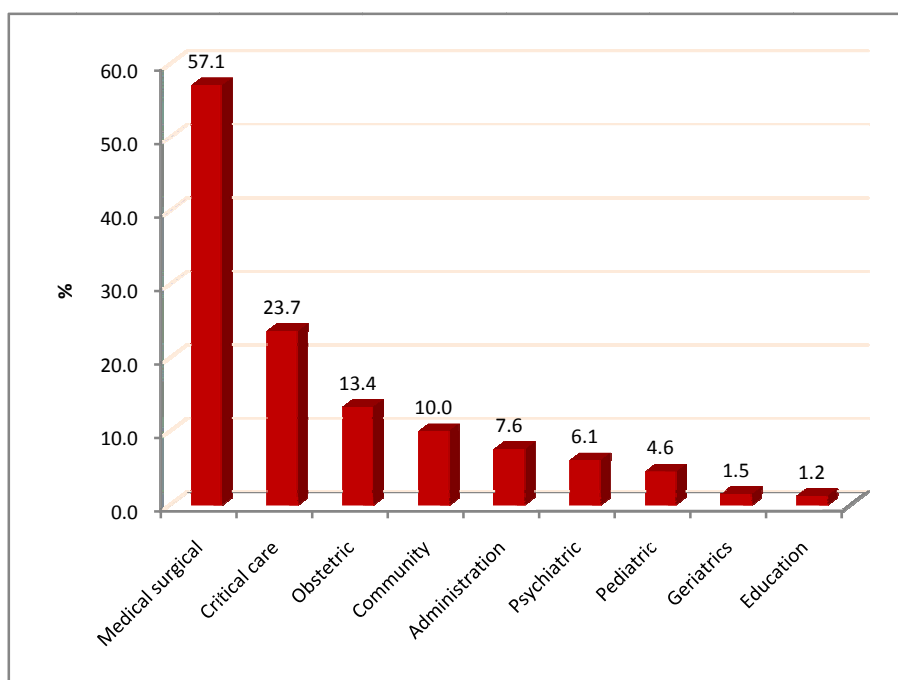
- Different coping strategies should be developed and implemented to nursing students to increase the contact between teaching staff and nursing students.

**Table (1): Nursing student socio-demographic characteristics at the Faculty of Nursing, Damanhour University (n= 330)**

<b>Socio-demographic characteristics</b>	<b>No</b>	<b>%</b>
<b>Gender</b>		
▪ Female	237	71.7
▪ Male	93	28.3
<b>Age in years</b>		
▪ 18-	37	11.3
▪ 20-	210	63.5
▪ 22-	80	24.3
▪ 24+	3	0.9
<b>Academic Year</b>		
▪ Year one	87	26.4
▪ Year two	131	39.5
▪ Year three	64	19.5
▪ Year four	48	14.6
<b>Family monthly income</b>		
▪ Adequate	244	73.9
▪ Inadequate	86	26.1
<b>Hours spent for studying</b>		
▪ 2-	111	33.7
▪ 4-	115	34.7
▪ 6-	78	23.7
▪ 8+	26	7.9
<b>Hours of sleep/ night</b>		
▪ 4-	19	5.9
▪ 6-	112	34.0
▪ 8-	140	42.2
▪ 10+	59	17.9
<b>The student is responsible for his family</b>		
▪ Yes	57	17.3
▪ No	273	82.7
<b>The student is responsible from his family</b>		
▪ Yes	288	87.2
▪ No	42	12.8

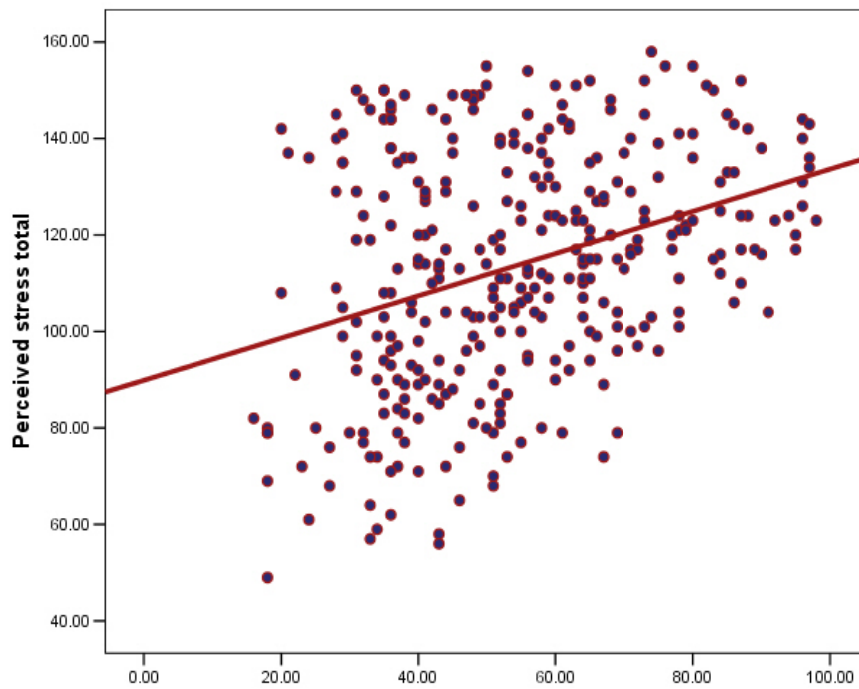
**Table (2): Levels of stress as perceived by Nursing students at Faculty of Nursing – Damanhour University (n= 330)**

Stress items	Low		Moderate		High	
	No	%	No	%	No	%
<b>Perceived stress scale items</b>						
▪ Stress from lack of professional nursing knowledge and skills	23	7.0	162	48.9	145	44.1
▪ Stress from assignments and workload	0	0.0	69	21.0	261	79.0
▪ Stress from taking care of patients	15	4.6	132	40.1	183	55.3
▪ Stress from clinical environment	7	2.1	150	45.6	173	52.3
▪ Stress from clinical teachers and nursing staff	27	8.2	108	32.8	195	59.0
▪ Stress from peers and daily life	8	2.4	82	24.9	240	72.7
▪ Overall total of perceived stress	51	15.5	201	60.8	78	23.7
<b>Physio-psycho-social stress items</b>						
▪ Physical symptoms	96	29.2	158	47.7	76	23.1
▪ Emotional symptoms	37	11.2	173	52.3	120	36.5
▪ Social behavioral symptoms	51	15.5	201	60.8	78	23.7
▪ Overall total of Physio-psycho-social stress	45	13.7	215	65.0	70	21.3

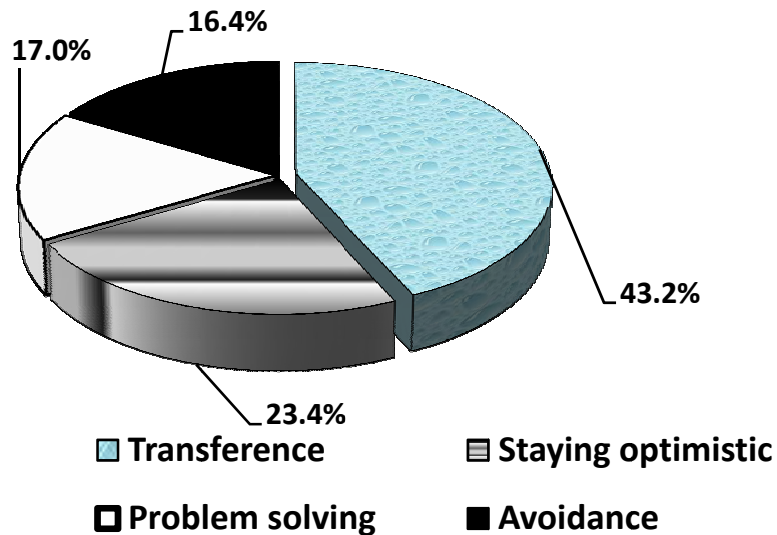


**Most stressful clinical area**

**Figure (1): Comparison between nursing student (Faculty of Nursing, Damanhour University) of different clinical area (n = 330)**



**Figure (2): Correlation between perceived stress scale and physio-psycho social stress**



**Figure (3): Different coping strategies adopted by nursing students (Faculty of Nursing, Damanhour University) (n = 330)**

**Table (3): Relationships between perceived stress level and nursing student socio-demographic characteristics Faculty of Nursing – Damanhour University (N = 330)**

Socio demographic characteristics	Perceived stress						MCP
	Low		Moderate		High		
	No	%	No	%	No	%	
<b>Gender</b>							
▪ Female	0	0.0	96	40.3	141	59.7	0.218
▪ Male	1	1.1	41	44.1	51	54.8	
<b>Age in years</b>							
▪ 18-	0	0.0	22	59.5	15	40.5	0.111
▪ 20-	1	0.5	74	35.4	135	64.1	
▪ 22-	0	0.0	39	48.8	41	51.3	
▪ 24+	0	0.0	1	33.3	2	66.7	
<b>Academic year</b>							
▪ Year one	1	1.1	51	58.6	35	40.2	0.000*
▪ Year two	0	0.0	33	25.4	98	74.6	
▪ Year three	0	0.0	24	37.5	40	62.5	
▪ Year four	0	0.0	28	58.3	20	41.7	
<b>Family monthly income</b>							
▪ Adequate	1	0.4	113	46.5	130	53.1	0.005*
▪ Inadequate	0	0.0	23	26.7	63	73.3	
<b>Hours spent for studying</b>							
▪ 2-	0	0.0	55	49.5	56	50.5	0.016*
▪ 4-	1	0.9	53	46.5	60	52.6	
▪ 6-	0	0.0	20	25.6	59	74.4	
▪ 8+	0	0.0	8	30.8	18	69.2	
<b>Hours of sleep/ night</b>							
▪ 4-	0	0.0	6	31.6	13	68.4	0.001*
▪ 6-	0	0.0	29	25.9	84	74.1	
▪ 8-	1	0.7	74	53.2	64	46.0	
▪ 10+	0	0.0	27	45.8	32	54.2	
<b>The student is responsible for his family</b>							
▪ Yes	0	0.0	21	36.8	36	63.2	0.664
▪ No	1	0.4	115	42.3	157	57.4	
<b>The student is responsible from his family</b>							
▪ Yes	1	0.3	115	40.1	172	59.6	0.450
▪ No	0	0.0	21	50.0	21	50.0	

MCP: *p* value based on Mont Carlo exact probability\*  $P < 0.05$  (significant)

**Table (4): Relationship between physio-psycho-social stress level and nursing student socio-demographic characteristics Faculty of Nursing, Damanhour University (N = 330)**

Socio-demographic characteristics of nursing students	Physio-psycho-social stress						MCP
	Low		Moderate		High		
	No	%	No	%	No	%	
<b>Gender</b>							
▪ Female	31	13.1	152	64.0	54	22.9	0.513
▪ Male	14	15.1	63	67.7	16	17.2	
<b>Age in years</b>							
▪ 18-	4	10.8	30	81.1	3	8.1	0.155
▪ 20-	30	14.4	138	65.6	42	20.1	
▪ 22-	11	13.8	45	56.3	24	30.0	
▪ 24+	0	0.0	2	66.7	1	33.3	
<b>Academic year</b>							
▪ Year one	18	20.7	65	74.7	4	4.6	0.000*
▪ Year two	15	11.5	91	70.0	24	18.5	
▪ Year three	7	10.9	37	57.8	20	31.3	
▪ Year four	6	10.4	21	43.8	22	45.8	
<b>Family monthly income</b>							
▪ Adequate	36	14.8	156	64.2	51	21.0	0.601
▪ Inadequate	9	10.5	58	67.4	20	22.1	
<b>Hours spent for studying</b>							
▪ 2-	11	9.9	76	68.5	24	21.6	0.004*
▪ 4-	21	18.4	71	61.4	23	20.2	
▪ 6-	8	10.3	59	75.6	11	14.1	
▪ 8+	5	19.2	9	34.6	12	46.2	
<b>Hours of sleep/ night</b>							
▪ 4-	0	0.0	12	63.2	7	36.8	0.114
▪ 6-	18	16.1	72	64.3	22	19.6	
▪ 8-	20	14.4	97	69.1	23	16.5	
▪ 10+	7	11.9	34	57.6	18	30.5	
<b>The student is responsible for his family</b>							
▪ Yes	7	12.3	32	56.1	18	31.6	0.112
▪ No	38	14.0	183	66.9	52	19.1	
<b>The student is responsible from his family</b>							
▪ Yes	38	13.2	193	66.9	57	19.9	0.164
▪ No	7	16.7	22	52.4	13	31.0	

MCP: p value based on Mont Carlo exact probability \* P < 0.05 (significant)

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