STRESS AND IT IS IMPACT AMONG MEDICAL STUDENTS IN HAIL UNIVERSITY.KSA.

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Background: Medical education is perceived as being stressful, and a high level of stress may have a negative effect on cognitive functioning and learning of students in a medical school. This study was conducted to assess the perceived stress among medical undergraduate students and find an association of perceived stress with academic characteristics and various stressors. A cross-sectional study was conducted among medical undergraduate students in colleges of medicine, dentistry and pharmacology in Hail University, KSA. A total of 312 medical students from 2nd year to 6th year in the 3 colleges were invited to participate in the study. Self-administered questionnaire was used to collect data regarding sociodemographic profile, perceived stress, academic, psychosocial and environmental stressors and spss was used to analyze the data. The study found that, 95.5% of participants were suffering from stress during their academic year. Vastness of academic curriculum and fear of poor performance in examination were important determinants of perceived stress. The perceived stress was higher among higher age group and final year medical students. Academic, psychosocial, and environmental stressors are associated with perceived stress. Reframing the academic curriculum and examination patterns, incorporating recreational activities in the institution is needed.

Introduction:-
Stress and its effects are inherent in human life and are a major source of concern in the modern day society. Stress in individuals is defined as anything that disrupts the normal person’s physical or mental wellbeing. It arises due to the inability of an individual to meet the demands made on him. A mild form of stress may manifest as a bad mood while an extreme one may lead to an act of violence, burnout or suicide. (1) Medical education is perceived as being stressful, as it is characterized by many psychological changes in students. Studies have shown that medical students experience a high level of stress during their undergraduate course. High level of stress may have a negative effect on cognitive functioning and learning of students in the medical school. In many medical schools, the environment itself is an all prevailing pressure situation, providing an authoritarian and rigid system, one that encourages competition rather than cooperation between learners .It is not just the undergraduate study period which brings stress but it may continue during the internship, postgraduate study period, and later into physician's practical life. The stress may also reach burnout levels. (2) A student’s life is subjected to different kinds of stressors, such as the

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pressure of academics with an obligation of success, uncertain future and difficulties envisaged for integration into the system. These students face social, emotional, physical, and family problems, which may affect their learning ability and academic performance. It is noteworthy that stress on medical students need to be recognized, and strategies developed to improve it should be focused on both individual and situational factors. (3) Poor academic performance and poor attendance is often indicative of difficulties in adjusting to new environment. On one hand, studies have reported that stress can be inversely related to academic performance, on the other hand, studies failed to detect an association between stress and academic performance. Interestingly, perceived stress and coping may be influenced by stress as well. (4) The present study was, therefore, carried out to determine the prevalence of self-perceived stress among medical students and to observe any possible association between the levels of stress and medical education process. (5)

Methods and Materials:-
Study design:-
This is a cross sectional study of medical students stress and its impact that was carried out to cover the prevalence and factors of it in Hail, KSA in the period between October 2017 and April 2018.

Study strategies:-
A standardized questionnaire was distributed to all students of medicine, dentistry and pharmacology colleges.

Study sampling:-
A total of 312 medical students from faculty of medicine, dentistry and pharmacology participated in this study.

Data collection:-
Data was collected by using standardized questionnaire via email and hard copies.

Analysis of data:-
Data was analyzed using Statistical Package for Social Sciences (SPSS) program.

Ethical consideration:-
Informed Consent was addressed during this study

Results:-
Regarding participant profile, the study finding showed that 59% from participants were from Medicine College, 22.1% from dentistry, and 18.9% from Pharmacology College. It observed that most of students were single (98.1%), and only 1.9% were married. Most of respondents were females (81.7%), with 18.3% for males. lastly, residency of students were mostly at home (83.3%), and only 16.7% in a hostel. (Table 1)

| Table 1: Participants profile |
|-----------------------------|
| Parameter                | Count | %   |
| College                  | Medicine | 184 | 59.0% |
|                          | Dentistry | 69  | 22.1% |
|                          | Pharmacology | 59 | 18.9% |
| Marital status           | Single | 306 | 98.1% |
|                          | Married | 6  | 1.9% |
| Gender                   | Male | 57  | 18.3% |
|                          | Female | 255 | 81.7% |
| Residence                | At home | 260 | 83.3% |
|                          | In a hostel | 52 | 16.7% |

The study found that, 95.5% of participants were suffer from stress during their academic year. Level of stress was classified into 3 categories, where highest percentage for sever level with 45.3%, 42.3% for moderate, and only 12.4% for mild level. The most important factor that affecting student’s outcome was academic factor with 65.8%, next factor was psychological factor with 24.4%, and only 6.4% factor related to family issues and 3.4% for social reasons.
Participants expressed their actions to relieve stress via some activities, where sleep was highest percentage with 33.4%, communication with others (19.8%), meditation (13%), shopping (11.9%), exercise (10.6%). Other minor activities such eating, crying, TV, Movies, games, Music, Drawing, Dancing, Time management, and never go out were used to relieve stress. (Table 2)

**Table 2:** Stress characteristics profile among medical students

| Parameter | Count | %  |
|-----------|-------|----|
| Do you suffer from any stress during your academic year? | Yes | 298 | 95.5% |
| | No | 14 | 4.5% |
| If yes, what is the level of your stress? (n=298) | Mild | 37 | 12.4% |
| | Moderate | 126 | 42.3% |
| | Sever | 135 | 45.3% |
| What is the most important factor that affects your outcome? | Academic | 194 | 65.8% |
| | Social | 10 | 3.4% |
| | Family | 19 | 6.4% |
| | Psychological | 72 | 24.4% |
| How can you relieve your stress? | Exercise | 31 | 10.6% |
| | Communication with others | 58 | 19.8% |
| | Shopping | 35 | 11.9% |
| | Meditation | 38 | 13.0% |
| | Sleeping | 98 | 33.4% |
| | Eating | 5 | 1.7% |
| | Crying | 5 | 1.7% |
| | TV, Movies, and Games | 5 | 1.7% |
| | Music, Drawing and Dancing | 6 | 2.0% |
| | Time management | 4 | 1.4% |
| | Never go out | 8 | 2.7% |

Regarding factors that cause stress, students perceived agreement that academic factors are causing stress, as compressed studying, and high expectation from teachers or self. However, they tend to disagree in regards to learning skills difficulty as one factor that causing them stress.

Less agreement perceived regards competitive and complicated environment as social factor that cause stress. On the other hand, 70.5% from students disagreed in regards lack of support as family factor that cause stress, while they tend to agree that high expectation from parents was one of the family factor that cause them stress.

Lastly, feeling not confident about self, feeling lonely, and anxious and having no one to turn to and understand are psychological factors that causing stress for 51%, 46.8%, and only 39.5% from participants, respectively. (Table 3)

**Table 3:** Sources of stress Factors

| Dimension          | Parameter                          | Cause stress | Agree | Disagree |
|--------------------|------------------------------------|--------------|-------|----------|
|                    |                                    | Count        | %     | Count    | %     |
| Academic factors   | Compressed studying                | 282          | 95.6% | 13       | 4.4%  |
|                    | High expectation from teachers or self | 234         | 79.9% | 59       | 20.1% |
|                    | Learning skills difficulty (Computer, Language) | 126         | 42.7% | 169      | 57.3% |
| Social factors     | Competitive environment             | 164          | 55.6% | 131      | 44.4% |
|                    | Complicated environment             | 161          | 54.6% | 134      | 45.4% |
| Family factors     | Lack of support                     | 87           | 29.5% | 208      | 70.5% |
|                    | High expectation from parents       | 166          | 56.3% | 129      | 43.7% |
| Psychological factors | Feeling not confident about yourself | 150         | 51.0% | 144      | 49.0% |
|                    | Feeling lonely                      | 138          | 46.8% | 157      | 53.2% |
|                    | Anxious and having no one to turn to and understand | 116 | 39.5% | 178 | 60.5% |
The study found out there no relationship between college and prevalence of stress during academic year, (P-value more than 0.05), as all medical line study cause stress. (Table 4)

**Table 4:** Relationship Between College And If Suffer From Any Stress During Academic Year Or Not

| College   | Do you suffer from any stress during your academic year? | Total | P-value |
|-----------|---------------------------------------------------------|-------|---------|
|           | Yes | No |                  |       |
| Medicine  | 173 | 11 | 184               | .296  |
| % within suffer from any stress | 58.1% | 78.6% | 59.0% |
| Dentistry | 67  | 2  | 69                |
| % within suffer from any stress | 22.5% | 14.3% | 22.1% |
| Pharmacology | 58  | 1  | 59                |
| % within suffer from any stress | 19.5% | 7.1% | 18.9% |

Regarding relationship between college and level of stress, table 5 showed that there is a relationship between them (P-value less than 0.05), where medicine students were higher than other students in other colleges affecting on stress, with 81.1% from who have mild stress were from medicine college, 66.7% from who have moderate stress were from medicine college, and finally 43.7% from who have sever stress were from medicine college also.

**Table 5:** Relationship between college and level of stress

| College   | If yes, what is the level of your stress? | Total | P-value |
|-----------|------------------------------------------|-------|---------|
|            | Mild | Moderate | Sever |       |
| Medicine   | 30  | 84        | 59    | 173   | .000 |
| % within level of your stress? | 81.1% | 66.7% | 43.7% | 58.1% |
| Dentistry  | 3   | 25        | 39    | 67    |
| % within level of your stress? | 8.1% | 19.8% | 28.9% | 22.5% |
| Pharmacology | 4   | 17        | 37    | 58    |
| % within level of your stress? | 10.8% | 13.5% | 27.4% | 19.5% |

The study showed that there is no relationship between college and most important factor that affects outcome (P-value more than 0.05). (Table 6)

**Table 6:** Relationship between College and most important factor that affects outcome

| College   | What is the most important factor that affects your outcome? | Total | P-value |
|-----------|-------------------------------------------------------------|-------|---------|
|            | Acad. | Social | Family | Psycho |       |
| Medicine   | 106   | 7      | 15     | 43     | 171   | .127  |
| % within factor affects outcome | 54.6% | 70.0% | 78.9% | 59.7% | 58.0% |
| Dentistry  | 42    | 1      | 4      | 19     | 66    |
| % within factor affects outcome | 21.6% | 10.0% | 21.1% | 26.4% | 22.4% |
| Pharmacology | 46   | 2      | 0      | 10     | 58    |
| % within factor affects outcome | 23.7% | 20.0% | 0.0%  | 13.9% | 19.7% |

**Discussion:**

The elite college students are the national capital in the academic field. In accordance with the findings of the present study, the prevalence of stress in this study was (81.7%) among female students and (18.3%) among male students. In comparison to Jazan study, stress was (76.9%) for females and (63.7%) for males. Also in Tikrit University study stress was higher among female students (69.9%) than their counterpart males (42.9%). (6) The overall prevalence of stress in the this study was (95.5%) which is almost similar to Aga Khan University study (>90%) (6), but higher than king Saud university study (63.7%)(1), and jazan university study (71.9%)(7).
The Level of the stress was classified into 3 categories, where the highest percentage is for the sever level with 45.3%, 42.3% for moderate, and only 12.4% for mild.

This is different than Tikrit study, where the highest percentage is for the mild level 30%, 14.4% for moderate, and only 12.8% for the severe level. (8) this is maybe due to individual’s variations.

An interesting finding of the present study was that the level of stress decreased as the 5th year is reached. This is different than Tikrit study where the severity was more in fifth and sixth stages (16.7% suffered from severe stress). (8)

The most important factor that is affecting students outcome was the academic factor with 65.8%, then the psychological factor with 24.4%, and only 6.4% for the factor that is related to family issues and 3.4% for social reasons. This is almost similar to Tikrit study which shows that the main source of stress among medical students is due to academic factors. Exams account for (73%) followed by the load of study (49.5%), and the lowest rate was the family problems. (8)

Participants expressed their actions to relieve stress via different activities, sleep was the highest one with (33.4%), communication with others (19.8%), meditation (13%), shopping (11.9%), exercise (10.6%). Other minor activities are eating, crying, tv, movies, playing games, listening to music, drawing, dancing, time management. This is different than Tikrit study which shows that students prefer spending time with friends as the main coping strategy (43.9%) followed by sleeping (43.3%) (8).

Results in table 3 observed the detailed factors that cause stress. Students perceived agreement that the academic factors are really causing stress as compressed studding, and high expectation from teachers or self. However, they tend to disagree regarding the learning skills difficulties as one of the factors. This is different than Umm Alqura University study which shows that English language skills were rated as the second greatest factor facing them. (mean rank 3.95). (9)

Not highly agreement perceived regarding to competitive and complicated environment as a social factor that causes them to stress. In a compression to Umm Alqura University study the majority of the students considered peer competition to be the greatest difficulty facing them in the first year. (9)

On the other hand, 70.5% from students disagreed in regards lack of support as family factor that cause stress. While they tend to agree that high expectation from parents was one of the family factors that cause them stress. This is almost similar to Nepal study which shows that high parental expectations was the second most common source of stress to the students. (10)

Conclusion:-
In conclusion the results of this study are suggestive as to the necessary components of a stress management program specific to the needs of college students. Regarding the detrimental effects of stress on health and academic performance, college administrators should consider incorporating stress management training in orientation activities. Abetter approach may be the use of a stress management workshop, specifically geared to the stressors encountered by college students. Certainly, stress in the college setting cannot be eliminated but we can and should do a better job preparing students to manage it.

Recommendation:-
For college administrators.
1. Identify student’s stress as soon as possible and provide adequate support.
2. Incorporate career development programs in to formal curricula.
3. Design general curriculum on stress and stress coping strategies.
4. Pay attention to students’ stress in learning.

For students:-
1. Make use of family support and release stress-reduced emotions.
2. Effectively manage emotions and develop an optimistic view of life.
3. Get involved with campus activities.

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