

Estimation of Occupational Stress Index Score Among King Abdulaziz University Students

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Abstract: Stress is our body's way of responding to any kind of demand or threat. It can start with simply too much pressure. To estimate the occupational stress index (OSI) score among King Abdul Aziz University international students a simple questionnaire study, with 100% response rate, was conducted. KAU has largest number of students in the Kingdom. The study of stress, OSI score and stressors are accepted important tools for career and personality development and highlighting of students' problems.

The English version of OSI questioner (CHS M278/EHS M270: Work and Health; Winter 2004) used and descriptive research approach selected to calculate OSI score. A t-test performed between OSI score for each individual section and their relevant percentages. P values equal or less than 0.05 considered as significant. For data analysis SPSS and Microsoft Excel version 2013 was used.

Total OSI score estimated was 38.3. Main contributing variables are uneasy lab work (32.6%) and decision-making at work (16.3%). The others are absence of rest areas, research grants unavailability. Less work pressure, low working experience, summer holidays, regular monthly stipend, fewer responsibilities, relaxing exams schedule, less number of days spent weakly are all reason for low OSI score. Physical working conditions contribute little but accident or injury shows no contribution for OSI score.

Low OSI score proved KAU international students are working in relaxing environment and feel little stress. Such studies are needed to be done on regular basis to evaluate the Kingdom's largest university student's problems and challenges they face.

Introduction

Stress is a process in which our work and environment stimuli places undue strain on humans, which directly or indirectly results in psychological and physiological changes that increase risk of diseases (Belkić, *et al.*, 1994). Occupational stress has been regarded as one of the major health hazard of the modern work environment. It accounts family issues, physical harm and substance abuse (Belkić, *et al.*, 1992; Emdad, *et al.*, 2009). Stress and stressful working conditions are directly related with more accidents during work, less productivity, off days from work and less efficiency. According to a study by Moller *et al.*, (2005) in aetiology of heart diseases, physiological stress

plays an important role.

For measuring work stress, occupational stress index (OSI) is an acceptable scale in modern psychological researches. It is widely and effectively used by psychologists and social scientists (Israel, *et al.*, 1996). Work stresses arises are dominant feature of present life having prominent long lasting effects on employees' behaviour, attitude and work productivity. Due to this, systematic studies demand of stress and working environment stressors have risen dramatically. A considerable portion of organization research involves the study of stress relating to job Karasek and Theorell, (2012). For personality development, personal counselling occupational stress assessment is

also very important. The measurement of occupational stress can be done using different methods, but all methods cannot be used for every work environment and every demographics. The literature survey shows that there is dearth of reliable and valid stress measuring instruments (Latif and Sultana, 2009). For job relating stress measurement a number of different scales have developed but these are case specific and cannot be used generally for every type of sample. Socio economic and demographic variables have much more consideration in such social and psychological studies (Latif and Sultana, 2009; Möller, *et al.*, 2005).

KAU has largest number of students in the Kingdom. The study of stress, OSI score and stressors is accepted important tool for carrier counselling, personality development and highlighting student's problems. To increase students productivity and efficiency such studies are keen importance to pin point their problems and solving them. So they can continue and focus upon just studies and research. The study objective was to estimate Occupational Stress Index score among King Abdulaziz University students.

Research Methodology

Total 50 Standard English version questioner (CHS M278/EHS M270: Work and Health; Winter 2004) were distributed among Ph.D. and master international students studying in King Abdulaziz University. All the questionnaire were administered personally to all students by visiting their rooms in hostel and in their class rooms. They were given the time of 3 days to complete it conveniently and with ease. The filled questionnaire then were collected back after 3 days. The response score was 100%. The students mainly have academic and research related activities, they are studying in different semesters. Some are working on research while others are just studying course work. There are local as well as international students from different

countries. Mean score was calculated for all the questions and OSI percentage to each section of the OSI questioner was calculated. A t-test performed between OSI score for each individual section and their relevant percentages. P values equal or less than 0.05 was considered as significant. The data were processed and tabulated, and figures were produced in Microsoft Excel version 2013.

Questioner

The English version of OSI questioner (CHS M278/EHS M270: Work and Health; Winter 2004) used developed by The Centre for Social Epidemiology Marina Del Rey, Los Angeles County, California. The questioner has 12 sections and total 65 questions mentioned in table 1.

Table 1.

	Occupational Stress Variables
A	Occupation details
B	Work hours and scheduling
C	Mode of Payment and Evaluation
D	Physical Working Conditions
E	Work Accidents and Injuries
F	Time Pressure at Work
G	Problems at Work
H	Description of your work tasks
I	Decision-making at work
J	Interactions with People and with Machines
K	Recent changes in your working conditions
L	Open ended questions about students research

Osi Questioner Scale

OSI scale based on standard validated questionnaire measures the extent of stress, the occupational group perceives from different stressors during work. There are different types of answering words used in questioner and in random order as well so to put single criteria like "Yes" or "No" based on "1" and "0" digital value is not compatible to deal the questioner results. For questions 1, 3, 5 and 6 which are mainly about the times (years, months or hours) the results were calculated

separately and used collected values but did not use the digital values to elaborate results. All questions, which have answers “No”, “Never”, “None”, “Rarely never” and “Rarely or never”, were assigned “0” values in the calculations. All questions which have answer “Yes” value “1” was assigned. To evaluate OSI score values for questions other than answered yes and No, “Likert scale” was used. For example in section “problems at work” question 29; the information and instructions delegated to you are clear?

- a. No, these are unclear (1)
- b. Yes, (2)
- c. No, sometimes clear some time not (3)

In the answers from a to c the statement is showing the increasing contribution for the development of occupational stress among students so we put values in increasing order as 1, 2 and 3.

As above mentioned that some answer are random means the approach is not in continuous order in the questioner so we assigned decreasing sore values in the calculations. For example, in section, “decision-making at work” question no. 46; the values were assigned as shows below.

46. Do you assess a given situation rapidly or make quick decisions?

- a. Yes, (2)
- b. Occasionally (1)
- c. No, rarely or never. (0)

The last part of questioner is about open-ended questions about your current work; we did not calculate any values due to the diversity of answers by the respondents and made discussions generally.

Results and Discussion

Mean OSI score found 38.3 among students. Working hours, scheduling and work experience results shown in figure 1. Total number of working years and total working experience on current job found near to four averagely. Despite eight hours, working in a working day as standardized but less time at

working site has been spent by students may be due to offsite research activities. The number of days per week spend by workers also less than (mean 4.6) allocated days by university.

Occupational stress variables and their relevant score shown in table 2. Section G about the problems at work contribute for OSI more than any other section. Decisions making at work (I) is another section of occupational stress variables, which contribute more than 5 digit score for OSI score.

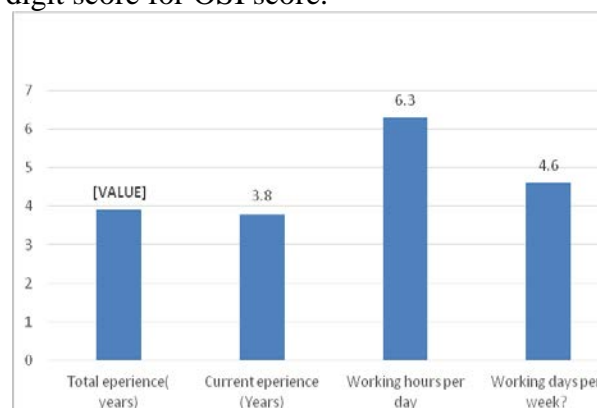


Fig. 1. Working hours, scheduling and work experiences (t-Test 3.5, P value 0.03).

Table 2. Occupational Stress Variables OSI score.

Sections	Occupational Stress Variables	OSI Score
A	Occupation details	0.3
B	Work hours and scheduling	2.8
C	Mode of Payment and Evaluation	2.0
D	Physical Working Conditions	4.0
E	Work Accidents and Injuries	0.0
F	Time Pressure at Work	3.8
G	Problems at Work	12.5
H	Description of your work tasks	2.5
I	Decision-making at work	6.3
J	Interactions with People and with Machines	3.3
K	Recent changes in your working conditions	1.0
L	Open-ended questions about students current work	-

Except these two sections G and I, no other occupational variables sections significantly

contribute in OSI as results shown in terms of percentage to the total OSI score for each questioner section. A result of t-test shows that the distribution of OSI scores in each section of questioner are different (t-stat 3.4 and 9.1, P

value 0.03).

Some open-ended questions about student’s current work:

The OSI score of different occupational variables is represented by graph as below.

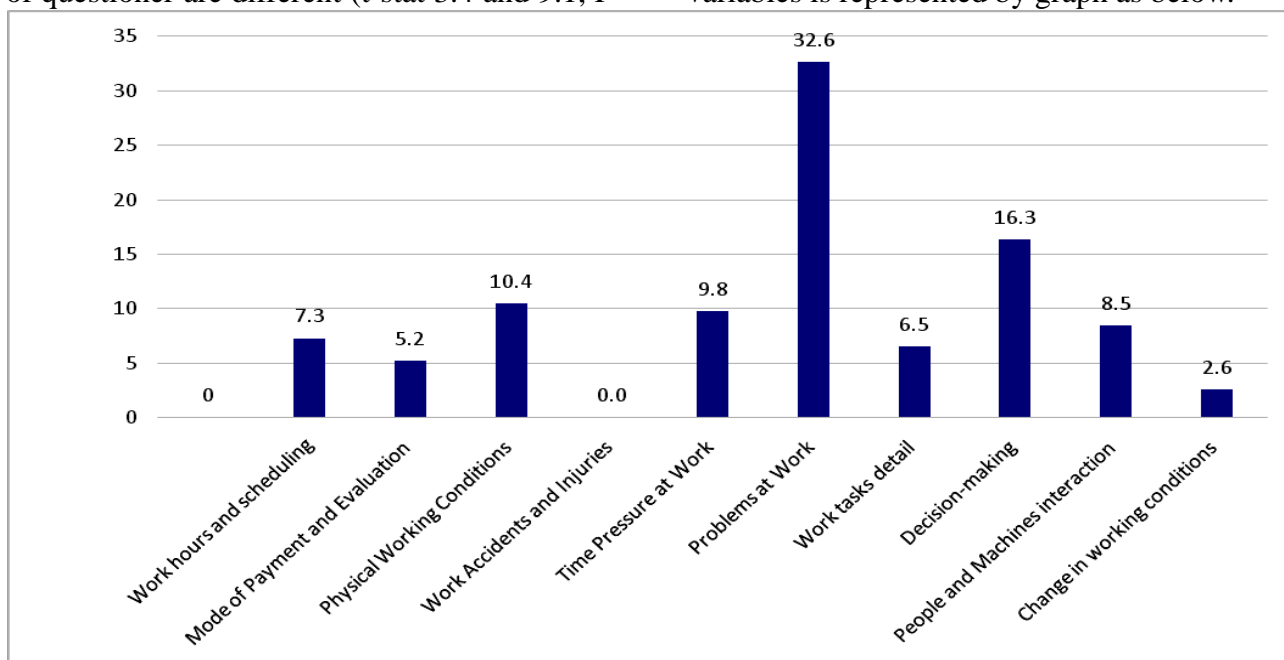


Fig. 2. OSI score of Occupational variables (t-Test 9.1, P value 0.03).

Table 3.

Q. No.	Open ended questions about students current work	Answers
59	How to improve your working environment, suggest?	<ul style="list-style-type: none"> • Involvement in decisions • Overcome language barriers • Systematic approach to work • Access to chemicals • Project money
60	Among all above which suggestion do you consider the most important?	<ul style="list-style-type: none"> • Promotion with pay raise • Uniform Language • Research grants
61	What is your jobs most difficult aspect?	<ul style="list-style-type: none"> • No • Absence of chemicals or instruments • Official communication
62	How that difficult aspect can be make easy?	<ul style="list-style-type: none"> • Most responded unanswered • Language training course
63	Which part of your job do you like most?	<ul style="list-style-type: none"> • Relaxing job • Easy work conditions • Absence of official pressure • Absence of strictness
64	What part of your job you would like to be continued in	<ul style="list-style-type: none"> • Yes • Unanswered • No specific suggestions

	the improved working conditions?	
65	Other comments	<ul style="list-style-type: none"> • Mostly unanswered • Less duration of program can be a problem which need to be address administratively

This study found 38.3 OSI score among students in King Abdul Aziz University. Less work pressure, low working experience, summer holidays, regular monthly stipend, fewer responsibilities, relaxing exams schedule, less number of days spent weakly are all reason for low OSI score.

Problems at work and decision making at work variables were the main contributor for OSI score. Problems at work related questions mainly discuss about the work related information and decision at work questions is related to responded involvement in the

decisions making.

For open-ended questions about student's current work, the answers are shown in table 3 as follows.

Physical working conditions were not contributing much in OSI. Only the absence of fixed position due to involvement in lab work is the main contributor factor. As academic occupation, there is no accident or injury contribution for OSI score. There is no certain changes found in the work recently as a continuous and similar routine just 2.6% OSI score found in total OSI score. The limited number of sample size and inclusion of only international students are the limitations of this study.

Conclusion

This study reveals low Occupational Stress Index score (OSI) among international students. This low OSI score can be attributed toward low work pressure, good working environment and good facilities in university. Main stressors are problems at work, language barrier, and scarcity of funding for PhD research. This study will contribute in highlight the main stress factors among students. By virtue of it, scientific community will get insight into university students stress factors. Also for university management it will helpful in managing students problems so that they can take part in academic, research activities with zeal and zest and can prove themselves as productive researchers.

Limitations

As sample was only international students,

which seems to be a small sample size and cannot be considered as a representative sample for all students. So there is a ground for estimating occupational stress score for all students with large sample size. Other parameters like occupational stress indicator can also be added. The same study should also be conducted for academic and non-academic staff of the university.

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تقدير درجة مؤشر الإجهاد المهني بين الطلاب الدوليين بجامعة الملك عبدالعزيز

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المستخلص: الإجهاد هو طريق الجسم للاستجابة لأي نوع من الطلب أو التهديد. ويمكن أن يبدأ ببساطة عند التعرض لضغوط أكثر من اللازم. لتقدير درجة مؤشر الإجهاد المهني (OSI) بين الطلاب الدوليين جامعة الملك عبدالعزيز، أجريت دراسة استبيان بسيطة، مع معدل استجابة مقداره ١٠٠٪. جامعة الملك عبد العزيز لديها أكبر عدد من الطلاب في المملكة. وتعتبر دراسة الإجهاد، ودرجة OSI وعوامل الإجهاد أدوات مهمة للتنمية المهنية والشخصية وتسهيل الضوء على مشاكل الطلاب.

تم استخدام إصدار اللغة الإنجليزية من استبانة الـ OSI (منشوري البيئة والأمان البشرية والكيميائي CHS M278/EHS M270: العمل والصحة، شتاء ٢٠٠٤م)، كما تم اختيار منهج البحث الوصفي لحساب نتيجة OSI. وأجري اختبار (ت) t-test بين درجة OSI لكل قسم فردي والنسب ذات الصلة. وتعتبر القيم P التي تساوي أو أقل من ٠,٠٥ ذات تأثير معنوي. تم استخدام نسخة عام ٢٠١٣م من SPSS وMicrosoft Excel لتحليل البيانات.

كان مجموع نقاط OSI المقدرة ٣٨,٣. المتغيرات المساهمة الرئيسية هي العمل المختبري غير المستقر (٣٢,٦٪) وصنع القرار في العمل (١٦,٣٪). والبعض الآخر عدم وجود استراحات، وعدم إتاحة المنح البحثية. وضغوط العمل الأقل، وانخفاض الخبرة في العمل، والإجازات الصيفية، وانتظام الراتب الشهري، والمسؤوليات الأقل، والجدول الزمني لاختبارات الاسترخاء، وعدد أقل من أيام العمل تعتبر من أسباب انخفاض درجة OSI. تساهم ظروف العمل المادية قليلا ولكن حدوث الحوادث أو الإصابات لا تظهر أي مساهمة بالنسبة لدرجة OSI.

أثبتت درجة OSI المنخفضة لطلاب جامعة الملك عبدالعزيز الدوليين أنهم يعملون في بيئة مريحة ويشعرون بضغط أقل. وهناك حاجة إلى إجراء مثل هذه الدراسات على أساس منتظم لتقييم مشاكل طلاب أكبر جامعة في المملكة والتحديات التي يواجهونها.