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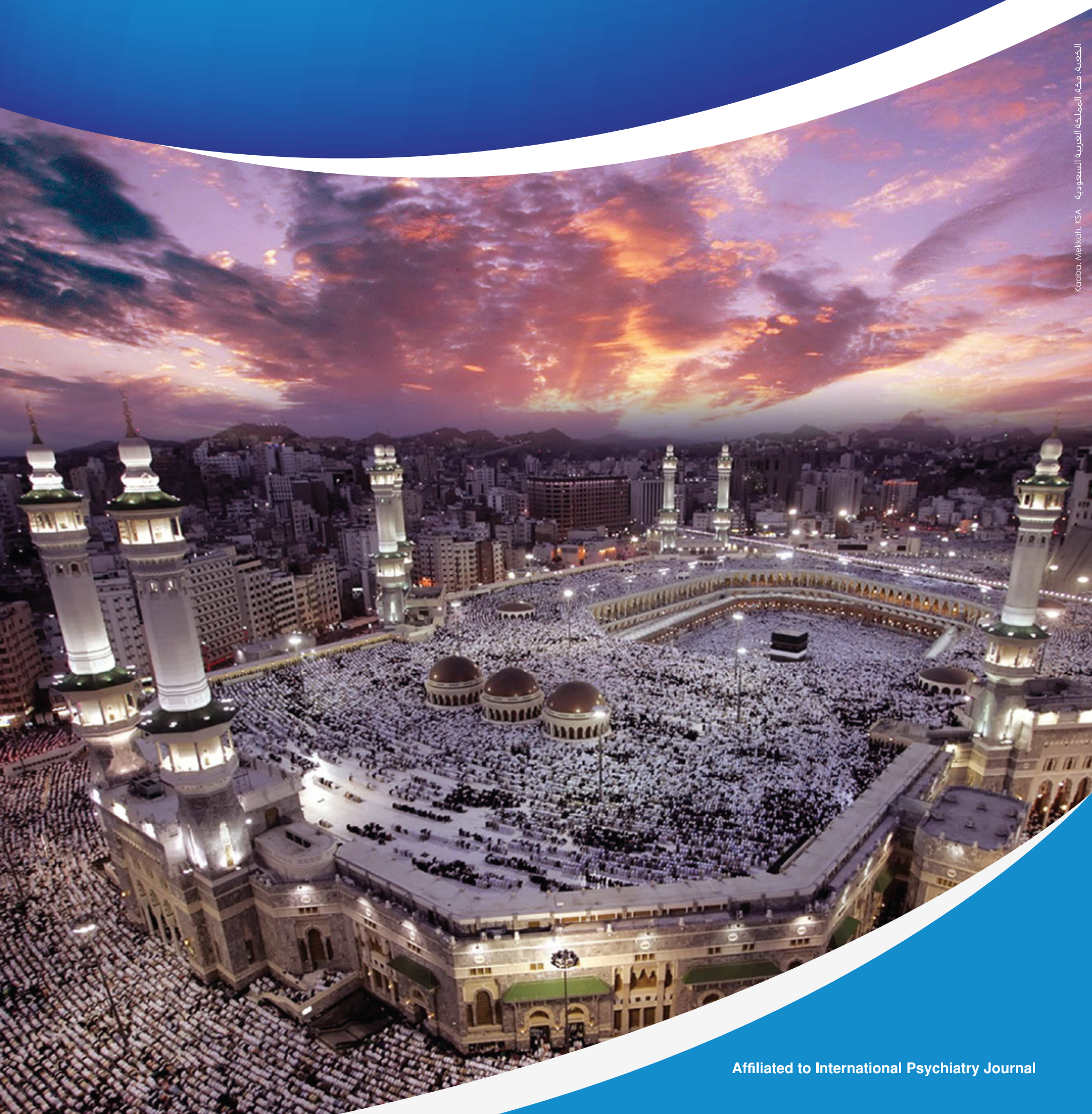

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Editorial Letter

Dear Colleagues

It is my pleaser to address this issue of the AJP, in the last year more good papers are submitted, and I believe the standard is getting better.

I would like to thank the editorial board and referees for their cooperation, special thanks for the editorial office for their efforts.

The Journal should continue to be the platform of Arab psychiatry and may be the next step will be more frequent issues per year.

The journal is no on the new database for the Arab world (Almanhal) in addition to the journal websites.

Walid Sarhan
May 2012

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Refugee and Asylum Seeker Children

Dinesh Bhugra

الأطفال اللاجئين وطالبوا اللجوء

دينش بوغرا

Abstract

There are several million refugees across the globe. Children and adolescent refugees and asylum seekers, especially if they are unaccompanied, have specific needs to ensure that their mental health is preserved. Political reasons, war, religious factors, gender and sexual orientation may all play a role in creating 'push' factors for these individuals to migrate to other countries. They have specific physical and mental health needs. Policy makers need to get the right advice from psychiatrists who are also important in clinical assessment and management of these individuals. Clinicians can play a significant role in caring for such a vulnerable group.

Declaration of interest: None

The mental health of refugees and asylum seekers is one of the most significant issues in the globalized world. Although globalization deals with the inter-connectedness of the world in the context of movement of people and goods, the associated changes in political systems and individual expectations have led to mass migration of people. This movement raises significant issues for the health of individuals who move and also for the health care systems from which they may seek help. The role of the political and social system in welcoming or rejecting refugees and asylum seekers is crucial in how such individuals feel and behave. In this process, often the needs of children and adolescents get forgotten.

Unaccompanied asylum seeking children (UASC) form a special group, and their health care and social care needs must be addressed accordingly. These children are under the age of 18, separated from both parents and are not being cared for by an adult who by law or by custom has the responsibility to do so. In Western European countries, the numbers of UASCs is continuing to rise; and in the UK itself the number has increased tenfold in recent years, though it is not always possible to get accurate data (there are always concerns about age assessment). Because of their susceptible age, UASCs are especially vulnerable to a number of physical and psychological problems, as both physically and psychologically they are in the process of growing up. In this process of forced individuation and hostility which they may face in their new environment, additional factors - such as lack of support, poor environment, excessive or no stimulation and past memories - may influence their adjustment. Past exposure to traumatic events - including conflicts, war, violence to themselves or to others in the family or the kinship, and physical, sexual or emotional abuse - will all influence their adjustment and capability to cope. Separation from parents and family, loss of social support from school, peers and community and a sense of rejection will all increase their vulnerability. The cumulative effect of life events and risk factors will increase the possibility of developing psychological disturbances. These experiences do contribute to the development of mental health problems[1]. Not surprisingly, the rates of mental health among refugee children are high, though often the data are uncertain [2]. The range of experiences related to physical migration, psychological stress and social impact are diverse but additional stress may be related to the process of acculturation. Their legal status and related issues further contribute to stress and may lead to additional stress. Cultural mores and values will further complicate matters, both in help seeking and in acceptance of interventions. Social capital and social support provide a key element in maintaining resilience in dealing with various risk factors.

Clinicians must be a part of the solution by informing policy, through culturally appropriate and culturally sensitive and accessible interventions. The debate on whether these services should be separate or embedded in core services continues. However, embedded service may make services more acceptable emotionally and may encourage UASCs to seek help early. The challenge is to ensure that clinicians are sensitive to the needs of such a vulnerable group. As part of their training, clinicians must be encouraged to explore not only risk factors but also resilience and explanatory models of their patients, which is simply good practice. Dealing with the assessment of identity and symptoms are at the core of understanding the experiences of people from different cultures [3, 4] and those of refugees and asylum seekers [5]. The interaction of physical and mental health is the cornerstone of any individual's being. Ruiz and Bhugra[6] note that refugees may be forced to leave because of their religious or political beliefs or their

sexual orientation, and thus any assessment and subsequent management will need to be modified accordingly. The treatment goals and potential problems have been described by Kinzie and Kinzie[7]. UASCs need to be assessed in the context of their educational and cultural contexts [8].

Ethical aspects of any planned interventions and policy developments have to be placed in the context of culture. Ethical implications are crucial and clinicians need to be aware of these challenges.

Conclusions

Children and adolescents who are refugees or asylum seekers have special health needs. Traumatic events, separation and loss – along with other psychological factors relevant to individuation and formation of one's personal and individual identity – all can play a significant role in help-seeking and response. In addition, factors related to legal issues and individual countries' policy framework will add to the stress experienced by those seeking help as well as by those providing the same. Educational aspects of individual needs must be taken into account. In a shrinking global world, it is important that clinicians are aware of specific needs.

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الملخص

هناك عدة ملايين من اللاجئين في العالم، ومن بين اللاجئين وطالبي اللجوء هناك أطفال ومراهقين غير مرافقين لأولياء أمورهم، وهذا يعني أن هناك حاجة للمحافظة على صحتهم النفسية، إن الأسباب السياسية والحروب والعوامل الدينية والجنس والتوجه الجنسي قد تلعب كلها أدواراً في إذكاء عوامل دفع الناس للهجرة وطلب اللجوء في دول أخرى، والمهاجرين لهم حاجات أساسية طبية جسدية ونفسية. ولابد لأصحاب القرار أن يأخذوا نصيحة الأطباء النفسيين والذين لهم دور هام في التقييم السريري وتدريب هؤلاء الأفراد، والممارسين السريرين لهم دور مهم في رعاية هذه الفئة المعرضة.

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Prevalence of Social Phobia among Preparatory School Students in Duhok City-Iraq

Nazar M. Mohammad Amin, Perjan Hashem Taha

الرهاب الإجتماعي لدى طلبة المرحلة الإعدادية في مدينة دهوك-العراق

نزار محمد محمد أمين، برجان هاشم طه

Abstract

Background: Social Phobia (SP) is a persistent fear of one or more social or performance situations, associated with anxiety symptoms and the avoidance of these situations. Different prevalence rates were reported in the literature. **Objectives:** This study aims to identify the prevalence of SP among preparatory school students, socio-demographic characters, and individual symptoms of (SP) and to investigate the effect of SP on the students' school performance. **Method:** One thousand five hundred students were selected randomly from 37 preparatory schools in the town of Duhok and its territories. These students were interviewed using the International Diagnostic Checklist for ICD-10 Social Phobia and their school performance was studied too. **Results:** The results showed that the prevalence of SP in the preparatory school students is (14.4%). Female students had higher rates than males with ratio of (1.88:1). Higher rates of SP were found in vocational schools (commercial and industrial) and those with low financial income. Eating or speaking in public appeared to be the most common feared situations avoided by the students with SP. The condition did not affect the scholastic achievement of the students. **Conclusions:** A significant difference was found between the rates of SP and different socio-demographic characters. Social Phobia appeared to have no effect on the students' scholastic performance according to the local school evaluations system.

Key words: Social phobia, anxiety, preparatory schools

Declaration of interest: None

Introduction

Phobia is defined as a persistent, pathological, unrealistic, intense fear of an object or situation; the phobic person may realize that the fear is irrational but, nonetheless, cannot dispel it [1]. The disorder is more obvious in the students inside the class, in school parties and the activities during morning gatherings in the school yards. Children and adolescents with this disorder often have great impairment in their academic performance, social skills, peer relationships and family life [2]. Various studies have reported a life time prevalence ranging from 3-13 percent for Social Phobia[1].Other studies found lifetime prevalence of Social Phobia was (9.8%) among female students and 9.4% among male students in Turkey and Israel. [3, 4]. Parental Social Phobia is associated with offspring risk to develop Social Phobia [5]. Negative parental rearing styles include overprotection, rejection, and/ or lack of emotional warmth. Clinically there is a marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others[6]. Exposure to a feared social situation almost invariably provokes anxiety; somatic symptoms include blushing, trembling, dry mouth, and/or perspiration [7, 8]. The person recognizes that the fear is excessive or unreasonable [6]. Social situations are avoided[9]. In individuals under age of 18 years, the duration is at least 6 months. Avoidance of situations may lead to difficulty in maintaining social/sexual relationship and educational problem (difficulty in interaction with other students and oral presentations) [10]. It is frequently co-morbid with other Anxiety Disorders 41% [11], and Depressive Disorders (35%) [12, 13].Social Phobia needs to be differentiated from normal shyness [1]. It is expected that those patients might resort to drinking or other substances to cope with symptoms [14]. The condition might be complicated by depression with suicidal thinking and other anxiety disorders [15]. The condition might lead to social and academic problems and interfere with the student's ability to work after graduation.

Aims of the study

The study aimed to identify cases of social phobia among preparatory school students at Duhok province as a sample representing schools in the Kurdistan Region of Iraq, to determine sociodemographic characteristics of the cases and the effect of social phobia on their scholastic achievements.

Subjects and methods

The ethical committee at the College of Medicine, University of Duhok approved the proposal and the directorates of the schools agreed to conduct the study at their schools. The students consent was taken and they were given the freedom of not declaring their names in

the forms. The study was conducted inside the town of Duhok, which has a population of approximately half a million in the northern part of the Kurdistan Region of Iraq. All the 37 preparatory schools in Duhok were included in the study. 30 were ordinary schools, [3] were vocational schools, [2] were commercial, [1] was industrial and 4 were model preparatory schools. The expected prevalence of Social Phobia is (10-11%), and the worst acceptable is (11.5%). For a confidence level of (95%), the expected sample size required would be 1403. For convenience and for simplicity of calculations, it was approximated to 1500. This is according to EPI info 6 computer statistical program. All preparatory schools' students' names, which totaled 16083, were coded and numbered from 1 to 16083. Then they were entered into the Microsoft Excel computer program to select 1500 students by simple random sampling. This target population size aimed to be representative of all preparatory school students in Duhok supported by the fact that it included students from all stages of preparatory schools. 1500 students were included in the study out of 16083 preparatory school students in the town of Duhok. A semistructured interview questionnaire form was prepared by the authors from the criteria of IDCL International Diagnostic Checklist for ICD-10 [16]. It was translated by the authors to Kurdish and Arabic and the English, Arabic and Kurdish texts were checked by language experts at the University of Duhok. The instrument was administered by author (PHT) for each student separately, and sociodemographic characteristics were studied involving personal and family information. Students who declared having other anxiety disorders, mood disorders, schizophrenia or organic brain diseases were excluded from the study. Sociodemographic characteristics of students with social phobia were compared with a control sample of students who did not have the disorder.

Statistical Analysis

A chi-square test of association with (Yates) continuity correction was used. And when criteria of chi-square were not satisfied, Exact Fisher Test was used instead. Comparing means by one sample t-test was done. Univariate analysis of variance was used for testing of Between-Subjects Effects. P-value recorded lesser than 0.05 was considered to have statistical significance, and if lesser than 0.001 considered to give a highly statistical significance.

Results

The class and sex distribution of the sample appeared in Table (1). Thirteen students refused to continue the questionnaire.

Table (1) Sample Distribution According to Class and Gender.

Class	Gender		Total N (%)
	Female N (%)	Male N (%)	
Class 10th (Formerly 4th)	226 (54.7%)	187 (45.3%)	413 (27.5%)
Class 11th (Formerly 5th)	283 (49.6%)	288 (50.4%)	571 (38.1%)
Class 12th (Formerly 6th)	241 (46.7%)	275 (53.3%)	516 (34.4%)
Total	750	750	1500 (100%)

The prevalence of Social Phobia in the student sample according to ICD-10 checklist was (14.4%).

Table (2) Number and Percentage of Cases of Social Phobia According to the Diagnostic Criteria of ICD-10 Checklist.

SP Diagnosis	N	Percentages
Positive SP	216	14.4%
Negative SP	1284	85.6%
Total	1500	100%

Positive SP: Students fulfilling criteria of diagnosis of Social Phobia according to ICD-10 checklist.
Negative SP: Students not fulfilling criteria of diagnosis of Social Phobia according to ICD-10 checklist.

There was a highly significant gender difference with a higher rate in female students. 141(18.8%) female students were affected in comparison to 75(10%) male students. So the female to male ratio was 1.88:1 with a P value lesser than 0.001. (Figure 1)

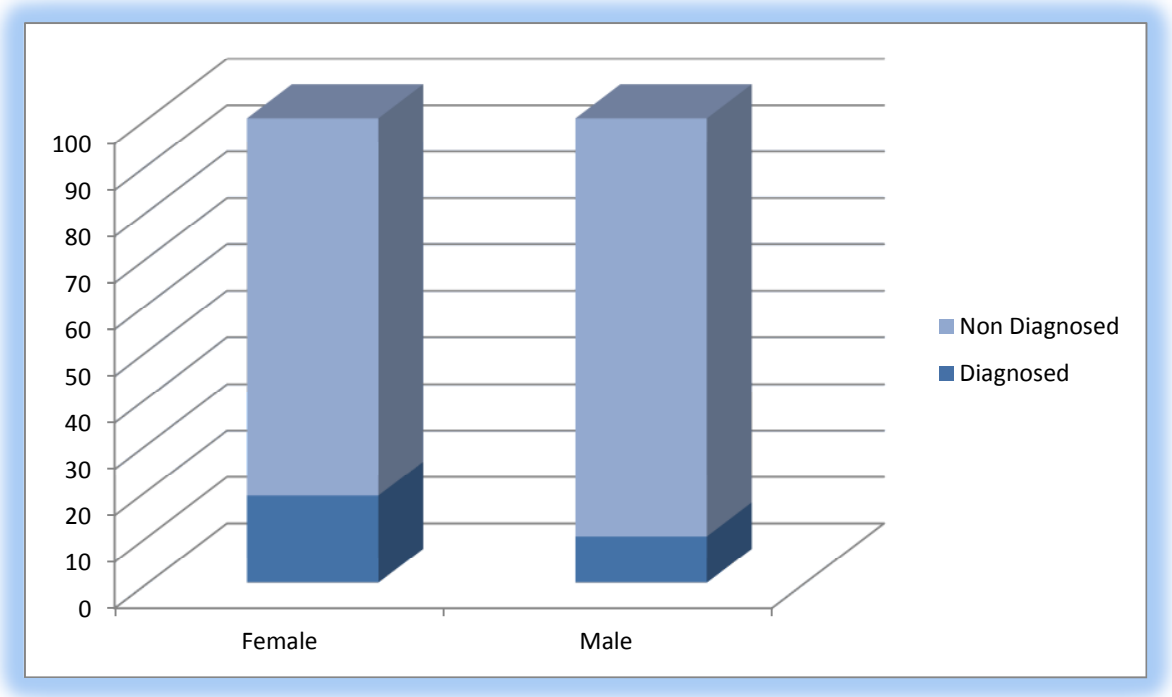
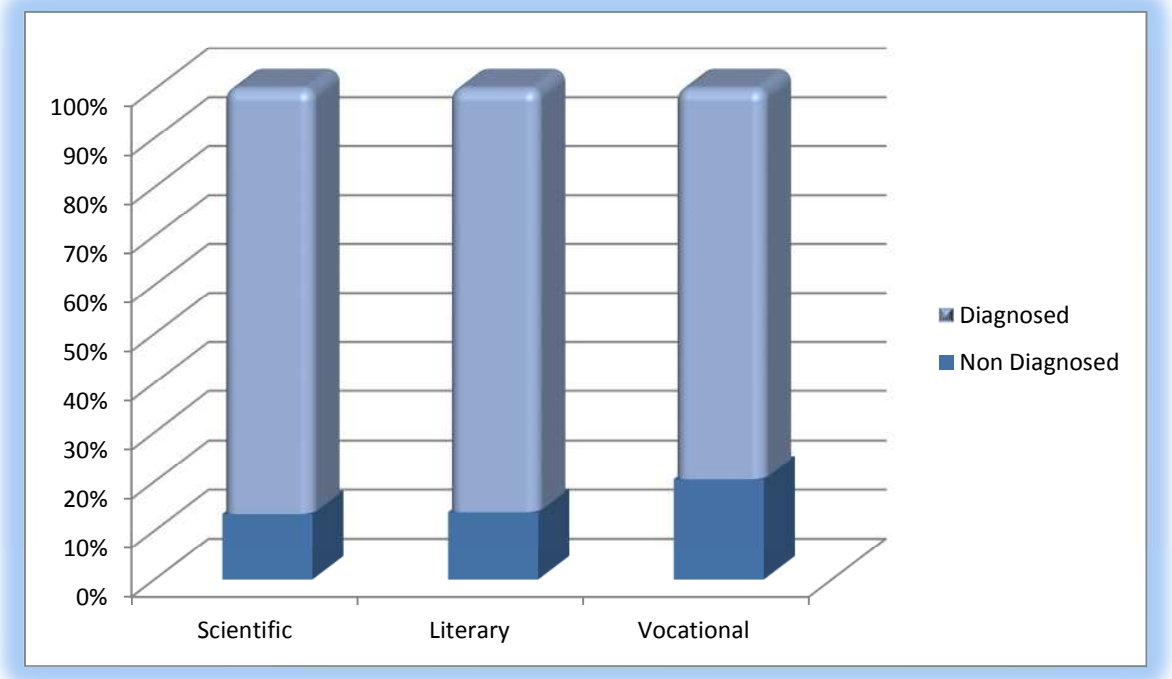


Figure (1): Distribution of Cases According to the Gender in Percentages.

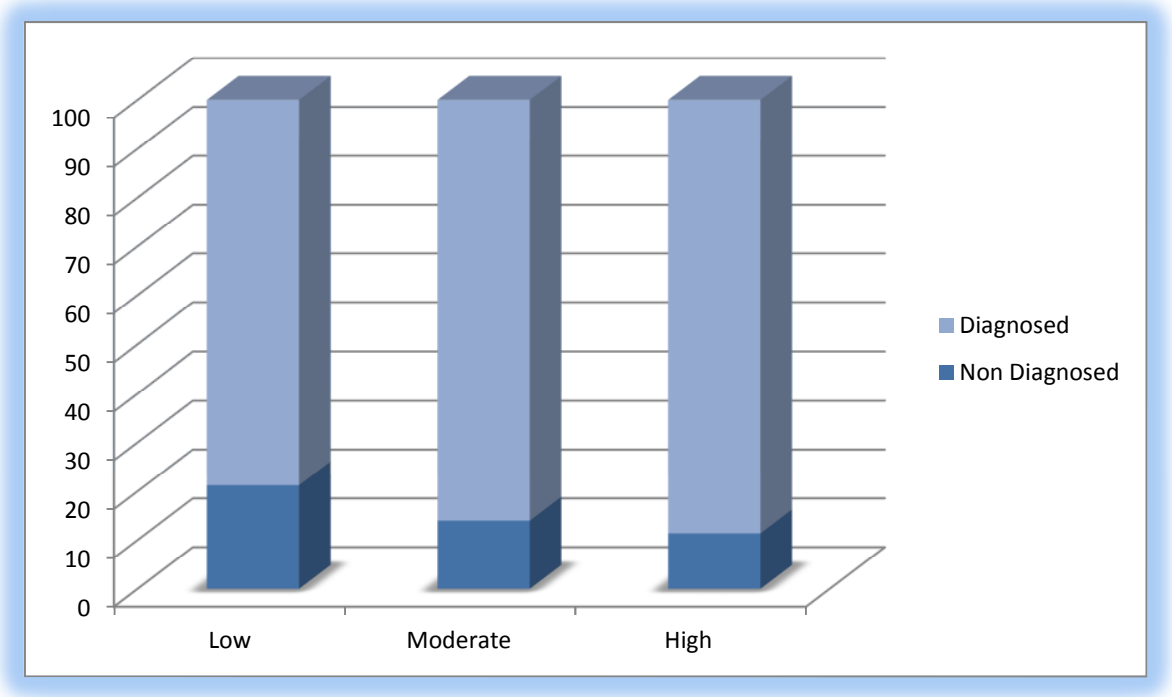
Vocational studies (commercial and industrial schools) had higher rate of Social Phobia 38(20.43%) among their students in comparison to scientific and literary branches which appeared to be statistically significant (P value was lesser than 0.05). (Figure 2)



Chi-Square = 8.33 df = 3 P value = 0.04

Figure (2) Distribution According to Branches in Percentages.

The percentage of Social Phobia in students having low financial income was (21.23%) which was higher than those having moderate financial income (13.97%) and in turn was higher than those having high financial income (11.37%). These differences were significant in which P value was lesser than 0.05. (Figure 3)



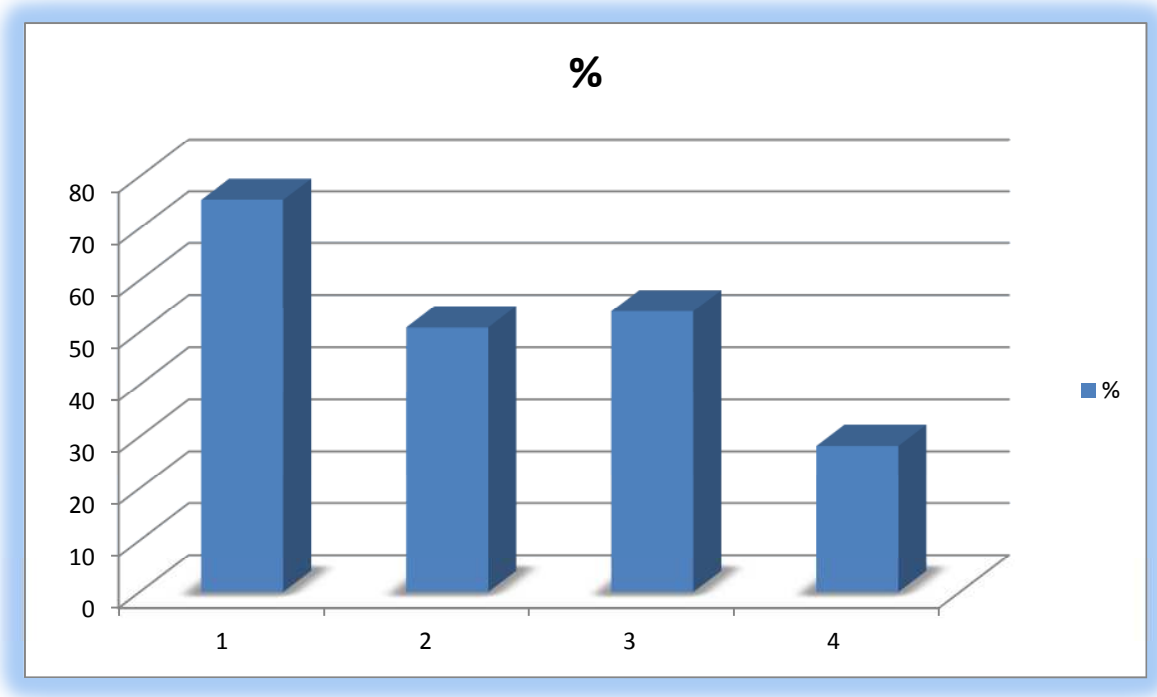
Chi-Square = 10.71 df = 2 P value = 0.005

Low Income: the income of the student and his/her family is not sufficient for his/her daily requirement.
Moderate Income: the income of the student and his/her family is sufficient for his/her daily requirement.
High Income: the income of the student and his/her family is sufficient for his/her daily requirement and for extra needs.

Figure (3) Distribution According to the Financial Income in Percentages.

There was no difference in social phobia among students who passed last year's exams compared to those who failed the exams. The difference in social phobia among those who passed the exams in the first trial last year compared to those who passed in the second trial was not significant too. Besides no significant difference could be found between the average marks of the students fulfilling criteria of Social Phobia according to ICD-10 checklist in comparison to those who do not fulfill these criteria. P value was greater than 0.05.

The social situations which were feared or avoided by the students who fulfill the criteria of diagnosis of Social Phobia according to ICD-10 checklist in order were: eating or speaking in public answered by (75.5%) was the most common feared situation, followed by entering or enduring small group situations by (54.2%), then encountering known individuals in public by (50.9%), and lastly other situations like (writing in front of others, playing music in front of others, girls embarrassment when boys watching them) by (28.2%). (Figure 4)



1. Eating or Speaking in Public
2. Encountering Known Individuals in Public
3. Entering or Enduring Small Group Situations (e.g. Parties, meetings…etc.)
4. Others

Figure (4) Social Situations for Fears or Avoidance Behavior in Percentages.

Discussion

This study explored the prevalence of Social Phobia in the students' sample according to the ICD-10 checklist which was (14.4%). (Table 2) This rate was found to be relevant in comparison with other studies from Iraq and other countries. (Table 3)

Table (3) Comparisons of Rates of Social Phobia among Different Studies.

Study Area	Sample	Sample Size	Prevalence Rates	References
Current Study	14-24 yr. old Preparatory School Students	1500 in 37 schools	14.4%	Current Study
Iraq-Sulaimani	University Students	942	9.1%	17
Qatar	Secondary School Students	2200 in 30 schools	14.9%	18
Sweden	Adults	2000	15.6%	19
Sweden	University Students	523	16.1%	20
Germany	14-24 yr. old Adolescents	3021	11%	21
USA	General Population	43 Studies	7-13%	22
Nigeria	University Students	1 University	9.4%	23

Our result was very close to the result of a similar study done in the state of Qatar on a similar age group population using similar means of identification of cases. The differences in other results compared to the present study could be due to different criteria for the diagnosis, different age populations of the study samples, different means of identification of the cases and different cultural background of the study populations. The female to male ratio of 1.88/1 was similar to Hassan and Amin's study in 2006 conducted in Iraq [17], Ranta et al study 2007 [11],

Van Oort et al study 2009[24], and Gren-Landell et al study 2008 [25].Vocational study schools (commercial and industrial) had higher rates of Social Phobia (20.43%) in comparison to ordinary schools. This might be due to the effect of the number of students who participated in the study from the vocational schools, which was not large when compared to others (only 186 students from a total of 1500 students). Alternatively, the high rate might be actual and consistent with the studies of Weber and Lederer in 2006[26].

The significantly high prevalence of Social Phobia in those with low financial income (Figure3) is supported by the findings of other studies, which confirmed that the low socioeconomic status and low income increases the risk of Social Phobia as in the study of Grant et al 2005, and Acarturk et al study 2008 [27, 28]. The effect of social phobia on the scholastic achievement was not statistically significant in this study compared to the study by Khalid et al in USA in 2007 who found that children and adolescents with this disorder often have great impairment in their academic performance [2] and the Furmak et al study in Sweden, which suggested an association between Social Phobia and low educational attainment [19]. This could be due to different educational and examination systems in the region of the study compared to other countries, the fact that the exams are mostly written rather than oral and less stressful beside the fact that the assessment in the present study was done after the relaxation of the summer holidays. The Ministry of Education in the Regional Government realized the problems of the educational system and the matter was discussed in a conference on education after comparing the system with many other systems throughout the Middle East and Europe.

Of the social situations which are feared or avoided by the cases, eating or speaking in public was the most common, presenting in (75.5%) of cases (Figure 4). Similar findings were seen in Hassan and Amin's study, (77.7%) which is close to the findings of the present study [17]. Furmark et al in 1999 and Tsai et al in 2009 found that public speaking was the most common social fear 18,[19, 20,21,22,23 29]. Kessler et al found that speaking fears were the most common and present in one-third of people with life time Social Phobia [30]. Their ratio was lesser than the percentage in the present study, which could be because they studied speaking fears alone while, in the present study, both speaking and eating fears were put in one group. Situations like entering or enduring small groups like parties, or meetings etc. were less frequent. About (28.2%) of cases specified many other situations in the free space given in the question (other situations :------). These situations could be grouped into: writing in front of others, playing music in front of others, and girls' embarrassment when boys were looking at them.

The strengths of the current study includes: obtaining a randomly selected community population, large sample size, and using a semi-structured diagnostic instrument (face to face interviews) by author (PHT) individually based on the ICD-10 checklist. The interviewer used the translated version to Kurdish for Kurdish students and to Arabic for Arabic students in order to make questions uniform and to decrease the bias of immediate translation. In addition to that, only students were interviewed, neither teachers, nor family members reported on symptoms or attended the interview process.

The translation of the checklist items was carefully done, however the interviewer had some difficulty in explaining the items to the students because of the poor linguistic skills of some students and the fact that certain words were not familiar at that age in this culture such as hallucinations, delusions, psychosis etc.

The researchers at the end of their analysis of the results felt that the questions were not enough to make a thorough assessment of scholastic achievement. The space for conducting the interview was limited in the schools because the schools in the Kurdistan Region, like the rest of Iraq, are all crowded. The cultural background of the students prevented the students from declaring their symptoms and they had to be encouraged to do so. The instrument used depended on ICD-10 so we had to exclude students having other psychiatric disorders and this is regarded by the author as a limitation in this study because of the fact that social phobia is usually co-morbid with other psychiatric disorders at this age.

Conclusions

This study revealed that social phobia is present among Preparatory school students in Duhok of Kurdistan Region of Iraq, more among females and in vocational schools. The condition did not appear to affect scholastic achievement among those having social phobia.

Eating or speaking in public is the most commonly feared social situation. It is necessary to find the cases at those schools early enough and intervene with social skills training in order to help them in their life at the university or their working life in the future. Further studies are needed specifically for vocational schools. Future studies are needed to include SP as co-morbid with other psychiatric disorders.

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الملخص

الرهاب الإجتماعي هو احد أنواع القلق النفسي ويظهر بإعراض مختلفة قد تؤثر على التصرفات و المستوى العلمي للطلبة. يهدف هذا البحث إلى دراسة شيوع هذه الحالة بين طلبة المرحلة الإعدادية في مدينة دهوك في إقليم كوردستان العراق. كما يهدف البحث إلى دراسة أعراض المرض والخصائص الإجتماعية والديموغرافية لدي المصابين. تم اختيار 1500 طالبا و طالبة في 37 مدرسة إعدادية ضمن مدينة دهوك و ضواحيها القريبة وتمت مقابلة الطلبة بأستخدام أداة معدة من التصنيف العالمي للأمراض لغرض تحديد الحالات وكذلك تحديد الأعراض. أظهرت النتائج وجود هذا المرض لدى 14.4% من الطلبة ولدى الإناث أكثر من الذكور وكذلك بنسبة أعلى في المدارس المهنية والطلبة من العائلات ذوي الدخل المتدني. الأكل آو التكلم أمام الآخرين كانت من الأعراض الأكثر شيوعاً غير أن هذا المرض لم يثبت تأثيره على أداء الطلبة في المدرسة .

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Appendix

The semi-structured psychiatric interview schedule for the diagnosis of Social Phobia based on ICD-10 (Diagnostic criteria for research 1993)-Arabic Version

المقابلة الطبية الشبه منظمة لتشخيص إضطراب الرهاب الإجتماعي المستند إلى(ICD-10)

أ- خوف واضح عندما تصبح مركز إهتمام أو خوف من التصرف بشكل محرج أو تجتنب من أن تصبح مركز إهتمام أوتجتنب المواقف التي تخاف فيها منالتصرف بطريقة محرجة. كلا ..... من المحتمل ..... نعم..... توقف

حدد المواقف الإجتماعية للمخاوف أعلاه أو لسلوك الاجتناب:

الأكل أو التكلم في الأماكن العامة	نعم ..... من المحتمل.....
مقابلة أشخاص معروفين في المجتمع	نعم ..... من المحتمل.....
الإنضمام إلى مجاميع صغيرة (مثل الحفلات أو الإجتماعات)	نعم ..... من المحتمل.....
أخرى (حدد: .....)	نعم ..... من المحتمل.....

ب- أي الأعراض توجد في المواقف التي تخاف منها	**نعم**	**من المحتمل**
أعراض اليقضة الذاتية		
1. خفقان أو زيادة ضربات القلب	.....	.....
2. تعرق كثير (بشرط أن لا يكون بسبب حرارة الجو)	.....	.....
3. إرتجاف أو إرتعاش	.....	.....
4. جفاف الفم (ليس بسبب دواء أو جفاف مرض عضوي)	.....	.....
الأعراض التي تتضمن الصدر و البطن		
5. صعوبة في التنفس	.....	.....
6. شعور بالإختناق	.....	.....
7. ألم أو عدم الإرتياح في الصدر	.....	.....
8. غثيان أو إضطراب في البطن (إختضاض المعدة)	.....	.....
الأعراض المتضمنة للحالة العقلية		
9. شعور بالدوار (الدوخة) أو فقدان التوازنأو عدم الإستقرار	.....	.....
10. شعور بأن الأشياء غير واقعية أي إختلاف في محيطك الخارجي (إنعدام الواقعية) أو الشعور ببعد الذات " غير واقعية هنا " (إنعدام الشخصية)	.....	.....
11.خوف من فقدان السيطرة " الجنون "	.....	.....
12.خوف من الموت	.....	.....
أعراض أخرى		
13.نوبات من توهج حار أوشعور بالبرد	.....	.....
14.خدر أو إحساس بتوخز	.....	.....
15. خجل	.....	.....
16. خوف من التقيؤ	.....	.....
17. خوف من التبول أو التغوط الطاريء	.....	.....

على الأقل أثنين من الأعراض المتضمنة من رقم (1) إلى (14) في مناسبة واحدة على الأقل بالإضافة إلى واحد من الإعراض بين (1) إلى (4) زائدا واحد من الأعراض بين (15) إلى (17). كلا ..... من المحتمل ..... نعم ..... توقف

حدد هل كانت الأعراض المذكورة موجودة حاليا أو في الماضي:	**نعم**	**من المحتمل**
حاليا: الأعراض موجودة حاليا للمرة الأولى	.....	.....
حاليا و في الماضي: الأعراض موجودة حاليا و في الماضي	.....	.....
في الماضي: الأعراض موجودة في الماضي (حدد.....)	.....	.....

ج- شدة عاطفية سببتها الأعراض أو الإجتناب مع إن الفرد يميز بأنها شديدة أو غير منطقية.

توقف ← كلا ..... من المحتمل ..... نعم.....

ء- الأعراض محددة ب، أو تسود في، المواقف المذكورة التي تخاف منها، أو عند التأملفي تلك المواقف.

توقف ← كلا ..... من المحتمل ..... نعم.....

ه- الأعراض الواردة في الخاصية (أ) و (ب) هي نتيجة الأوهام، الهلاوس، أو الإضطرابات الأخرى كالإضطرابات العقلية العضوية، أو مرض الفصام والإضطرابات المتعلقة، أو الإضطرابات المزاجية، أو إضطراب الوسواس القهري، أو هي ثانوية لمعتقدات المجتمع.

توقف ← نعم ..... من المحتمل ..... كلا .....

إذاتوافقت الخصائص من (أ) إلى (ه) فالتشخيص هوالرهاب الإجتماعي.

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Predictors of Psychiatric Early Readmission in Two Arab Hospitals

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العوامل المنبئة لإعادة إيداع المرضى النفسيين المبكر بعد خروجهم في اثنين من المستشفيات العربية

السيد صالح، محمد عادل الحديدي

Summary

Objectives: the aims of this study were to (1) examine factors contributing to early psychiatric readmissions in one hospital in Egypt and another in Saudi Arabia, (2) correlate and predict factors affecting readmission in both hospitals. **Methods:** 100 subjects from an Egyptian hospital (MUH) and a similar number of patients from a Saudi one (TMH), who were readmitted within three months after being discharged, were randomly selected. Control groups consisted of 50 Egyptian patients and a similar number of Saudi patients, who were admitted only once during the last two years, were also selected randomly. All patients were diagnosed according to DSM-IV-TR criteria. Multidimensional Scale of Perceived Social Support and Medication Adherence Rating Scale were used to assess social support and drug compliance. **Results:** The study found that most of the factors playing a role in early readmission in psychiatric hospitals were nearly the same in both studied hospitals. Male patients who were unemployed, unmarried, primary educated, who were diagnosed as mood disorders or schizophrenia, living in rural areas, and who were discharged without completing their treatment were associated more with early readmission in both studied hospitals. Number of previous admissions was directly correlated with duration of illness, low medication adherence and indirectly correlated to duration of last hospital admission and degree of perceived social support in both hospitals. **Conclusions and recommendations:** Many factors may play a role and considered as predictors of early re-hospitalization. So, early detection and management of these factors may help to decrease the cost and time expander.

Key words: Readmission, Predictors, Medication adherence, Social support.
Declaration of interest: None

Introduction

The new policy of deinstitutionalization in Arab countries and the provision of community care may reduce the number of psychiatric inpatients, but will not solve the problem.[1] Aftercare services are still limited and community care in the form of hostels, day centers, rehabilitation centers and health visitors is only available in major cities; otherwise it is provided by the family.[2,3]

Readmission is associated with several factors that vary across different health care systems.[4] These factors include the clients themselves[5,6]; social and family support[7,8]; disease[6,9]; drug compliance and regularity on follow up[10,11]; and hospital related issues[12,13,14]. The literature on factors affecting early psychiatric readmission in comparison to that studying readmission in general is limited. Naji et al[15] and Durbin et al[16] found that risk of early readmission is greatest in the 30-day period immediately after discharge while Caton et al[17] and Boydell et al[18] reported that 26%-28% of the patients were re-hospitalized within three months of discharge (respectively). Every readmissions lead to expenditure of both time and money for patients and hospital.[19]One way to contain hospital costs is to reduce the number of readmissions.[20]

Re-hospitalization also reflects effectiveness of inpatient psychiatric treatment[21] and the availability and utilization of effective community-based aftercare services.[22,23] In Arab countries, the role of community-based aftercare services in helping mental health patients still limited, unavailable, and poorly understood by most of people.[2,3] Moreover, despite the available resources that exist in the Arab countries and the presence of many important socioeconomic differences between these countries, collaborative multi-national cross-sectional studies have not been produced.[23]

Egypt and Saudi Arabia are two of the Middle East countries both enjoy very distinguished status and huge potential on the Arab, Muslim and international levels. People in the two countries have many common life profiles, including language and religion, but are different in regard to cultural, historical and financial aspects of life. Thus, there is good reason to hypothesize that there would be a significant difference between the two samples in readmission predictors. According to the above issues, this study was designed to: (1) examine factors contributing to early psychiatric readmissions in one of the Egyptian hospitals and another one from Saudi Arabia, (2) correlate and predict some factors that affected readmission in both hospitals.

Material and methods

Location of the study: This study was conducted in Taif Mental Hospital (TMH), which is the first and biggest psychiatric hospital in Saudi Arabia and thought to provide one of the best mental health services in KSA.[24] The second hospital is Mansoura University Hospital (MUH), Psychiatric department, Egypt. This hospital provides mental health service to large scale of patients in the Nile Delta region, Egypt. As a university hospital it is thought to provide the standard mental health services to patients. Both hospitals are public hospitals in which patients have not to pay any fees for their stay in the hospital and after discharge patients could receive free medication from outpatient clinic in each follow up.

The study design: This is a clinical multinational, cross-sectional randomized controlled study. The research protocol for this study was approved by the ethics committee in both hospitals and written informed consents was obtained from all participants before the start of the study.

Participants

100 subjects from MUH (group A) and a similar number of patients from TMH (group B) were selected randomly by their order of contact with the hospitals for early readmission (first 100 patients coming to outpatient clinic for readmission who were discharged not more than 3 months ago). Another 50 patients from MUH (group C) and a similar number of patients from TMH (group D); were also randomly selected (by their order to contact to outpatient clinic for follow up) as a control group. Patients in the control group had been admitted only once in the last two years. The exclusion criteria were patients transferred from another hospital, co-morbid medical conditions and patient readmitted within one week of discharge.

Methods

For the purpose of this study, a specially designed sheet was used. It included following items: age, sex, occupation (skilled worker, unskilled worker and unemployed), marital status, educational level (illiterate, primary school, preparatory or secondary school, faculty education and post graduate education), residence, number of previous admissions, duration of illness in years, period between admissions in months, duration of last hospital admission in days, type of discharge from hospital (normal or abnormal i.e. escape from hospital or discharge against medical advice). All patients were diagnosed according to DSM-IV-TR criteria[25]. The diagnosis was further confirmed by two other psychiatric consultants. Multidimensional Scale of Perceived Social Support (MSPSS)[26] and Medication Adherence Rating Scale (MARS)[27] were used to assess social support and drug compliance. MSPSS reliability, validity, and factor structure have been demonstrated across a number of different samples [28] including Arab immigrant youth [29] and the Arabic version was used and validated in an Egyptian study by Fawzi et al.[30] MARS questionnaire was translated into Arabic by the authors and the translation was further presented to three professors of psychiatry in Mansoura faculty of medicine and three Saudi senior consultants. They were asked to evaluate the clarity of the items and its suitability for measuring the concept within the Egyptian and Saudi culture. Then it was presented to a small (n=25) sample of patients in each country. Item-total correlations for the scale ranged from 0.192 to 0.695, (Cronbach's $\alpha = 0.932$) for Egyptian sample and inter-item correlations ranged from 0.110 to 0.763, (Cronbach's $\alpha = 0.926$) in Saudi sample, all very highly significant. Same test have been recently validated and used in an Egyptian study by Fawziaet al.[31] In MSPSS, the maximum score is 84, which indicates very good social support and the least score is 12, which means no social support. In MARS the score ranges from 0-10, the higher the score the lower is the medication adherence.

Statistical analysis

Parametric data were summarized as means and standard deviations; and the association differences were compared using *t*-test. Nonparametric data were described as number and percentage; and the associated differences were compared using Chi-square test. The main findings were presented as proportions with 95% confidence intervals (CIs). Correlation was tested by Pearson moment correlation equation and multiple liner regression analysis applied for prediction of the number of readmissions. The results were computed on an IBM compatible personal computer using the Statistical Software Package for Social scientists (SPSS) for windows 15.

Results

As shown in Table (1), male gender, unemployment, unmarried, primary education, mood or schizophrenia disorders, living in rural areas and abnormal discharge were found to be more prevalent in patients with early readmission than those with single admission with statistically significant difference in both studied hospitals. In TMH group but not in the MUH one, illiteracy and substance use were more prevalent in

patients with early readmission than those with single admission with statistically significant difference. The only two statistically significant differences between the two readmission groups were in being illiterate and substance use patients (more in the Saudi group).

Table (2) demonstrates that age was of no statistically significant difference between all studied groups in both hospitals. Duration of illness and scores on MARS were high in the two early readmission groups than the two single admission groups with a statistically significant difference. On the other hand, scores on MSPSS and duration of last hospital admission were lower in the two early readmission groups than the two single admission groups with statistically significant difference. Patients in Mansoura early readmission group were elder; of longer illness duration; longer duration of last hospital admission; longer period between admissions and of higher scores on MSPSS than patients in Taif early readmission group. On the other hand, number of admission and scores on MARS were higher in Taif early readmission group than Mansoura early readmission group.

Number of previous admissions in patients with early readmission from the two studied hospitals was directly correlated to duration of illness and scores on MARS and indirectly correlated to duration of last hospital admission, period between admissions, scores on MSPSS (Table 3). Also, multiple liner regression between number of previous admissions and scores on MARS; MSPSS and duration of last hospital admission were statistically significant (Table 4).

Table (1): Compares the four studied groups according to some socio-demographic and clinical factors.

	Mansoura University Hospital		**Taif Mental Hospital**		$X^{2\,a}$	$X^{2\,b}$	$X^{2\,c}$
	Early readmission	Single admission	Early readmission	Single admission			
Sex							
Male	70	27	75	20	3.73*	17.58***	0.627
Female	30	23	25	30			
Occupation							
Skilled worker	12	32	11	24	43.48***	25.5***	0.049
Unskilled worker	27	12	21	17	0.156	2.97	0.987
Unemployed	61	6	68	9	32.38***	22.35***	1.07
Marital status							
Unmarried	77	8	85	8	50.5***	67.36***	2.06
Married	23	42	15	42			
Education level							
Faculty	19	18	10	14	5.18*	8.03**	3.267
Illiterate	20	7	37	10	.813	4.47*	7.09**
Post graduate	4	4	1	2	1.05	1.53	1.846
Preparatory secondary	19	12	18	15	0.508	2.79	0.33
Primary	38	9	34	9	6.19**	4.17*	0.347
Residence							
Rural	83	33	74	24	5.49*	9.94**	2.4
Urban	17	17	26	26			
Diagnosis							
Dementia	6	3	3	3	0.00	.781	1.04
Depression	8	11	4	13	5.90*	16.05***	1.41
Bipolar disorders	35	10	28	6	3.57*	4.86*	1.13
Adjustment	6	8	1	7	3.93*	11.15**	3.7

Personality	2	1	7	9	0.000	4.23*	2.9
Schizophrenia	31	7	29	7	5.093*	4.112*	0.095
Substance use disorder	12	10	28	6	1.705	4.86*	8.0**
Type of discharge							
Abnormal	35	4	40	4	12.6***	16.46***	0.533
Normal	65	46	60	46			

X2 a chi-square between single admission and early readmission groups in Mansoura University hospital; X2 b chi-square between single admission and early readmission groups in Taif Mental Hospital; X2 c chi-square between the two early readmission groups from both hospitals. * P value significant at level = 0.05; ** P value significant at level =0.01 *** P value significant al level <0.001

Table (2): Demonstrates age, duration of illness, duration of last hospital admission, Medication Adherence Rating Scale and Multidimensional Scale of Perceived Social Support in the four studied groups.

	Mansoura University Hospital		**Taif Mental Hospital**		**t [a]**	**t [b]**	**t [c]**
	Early readmission	Single admission	Early readmission	Single admission			
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)			
Age	33.4(12.9)	33.2(9.02)	25.2(7.3)	25.1(6.75)	-0.1	-0.1	5.54
Duration of illness in years	5.8(2.3)	3.5(1.2)	4.4(2.1)	3.5(1.07)	-2.9***	-3.5***	4.32
Duration of last hospital admission in days	26.8(11.3)	31.3(6.9)	19.2(8.04)	34.7(4.2)	2.6*	15.4***	5.49
Medication Adherence Rating Scale	3.2(2.3)	2(0.6)	4(2.33)	2.54(1.4)	-4.7***	-4.03***	-2.53
Multidimensional Scale of Perceived Social Support	58.4(21.2)	67.02(9.2)	46.9(13.3)	66.3(8.74)	3.5***	10.6***	4.58
Period between admission in months	13.5(7.8)		9.9(6.90)				4.32**
Number of previous admission	2.7(1.02)	1(0)	3.2(0.76)	1(0)	-11.3***	-20.3***	-4.4***

t a t-test between single admission and early readmission groups in Mansoura University Hospital; t b t-test between single admission and early readmission groups in Taif Mental Hospital; t c t-test between the two readmission groups from both hospitals.* P value significant at level = 0.05; ** P value significant at level =0.01 *** P value significant al level <0.001.

Table (3) demonstrates the correlations between number of previous admissions in the two groups of patients with early readmission from the two studied hospitals and duration of illness, duration of last hospital admission, period between admissions, Multidimensional Scale of Perceived Social Support and Medication Adherence Rating Scale.

	Number of previous admissions			
	Mansoura University Hospital(early readmission group)		Taif Mental Hospital (early readmission group)	
	r	p	r	p
Duration of illness in years	0.28(**)	0.004	0.33(**)	0.001
Duration of last hospital admission in days	-0.80(**)	<0.001	-0.61(**)	<0.001
Period between admission in months	-0.77(**)	<0.001	-0.63(**)	<0.001

Medication Adherence Rating Scale	0.92(**)	<0.001	0.86(**)	<0.001
Multidimensional Scale of Perceived Social Support	-0.93(**)	<0.001	-0.74(**)	<0.001

**Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table (4) demonstrates the multiple linear regressions between number of previous readmissions in the two groups of patients with early readmission from the two studied hospitals and duration of last hospital admission, Multidimensional Scale of Perceived Social Support and Medication Adherence Rating Scale.

	Un-standardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Egyptian (Mansoura University Hospital)					
(Constant)	2.899	.394		7.351	.000
Multidimensional Scale of Perceived Social Support	-.017	.005	-.273	-3.655	.000
Medication Adherence Rating Scale	.286	.043	.496	6.722	.000
Duration of last hospital admission in days	-.020	.006	-.177	-3.156	.002
Saudi (Taif mental hospital)					
(Constant)	4.848	.242		20.064	.000
Multidimensional Scale of Perceived Social Support	-.027	.004	-.338	-6.539	.000
Medication Adherence Rating Scale	.135	.024	.243	5.703	.000
Duration of last hospital admission in days	-.057	.006	-.473	-9.532	.000

* Dependent Variable: number of previous admission.

Discussions

Many researchers have noticed that there is still a general weakness in the mental health services in Arab countries.[2,32,33] Also, people in the Arab world tend to underutilize mental health services and to hold negative attitudes toward formal mental health services.[33] The aims of this study were to identify, correlate and predict factors which lead to readmissions in two psychiatric hospitals in two different Arab countries Egypt and Saudi Arabia.

Patients' predictors

This study shows that younger age of patients were found in Saudi single admission (25.10+/-6.75) and early readmission patients (25.19+/-7.3) than Egyptian single admission patients (33.24+/-9.02) and early readmission patients (33.42+/-12.88) (respectively). No statistically significant difference was found between the age of patients with early readmission and single admission in the two studied hospitals. Also, no statistically significant difference was found between the ages of patients with early readmission in both hospitals. These data are in concordance with many studies, e.g. Fink et al[34] and Alexy et al[35] found that age was not related to hospital readmission. A recent study by Zilberetet al[36] found that age up to 45 was a good predictor for early readmission. In contrary, Daly et al[5]; Silva et a[l6];Fathy et at[10];Woogh[37]; Kastrup[38]; Weissman et al[39]; Rabinowitz et al[40] and Mahendran et al[41] found that patients with young age is a good predictor of readmissions.

The present study shows that early readmission in both studied hospitals were more prevalent among males, unemployed, unmarried, primary educated (and illiterate in the Saudi group) and living in rural areas. These results could be explained by the high degree of fear of

stigmatization especially among females, patients with high level of education, employed andliving in urban areas. Fear of stigmatization lead family to bear much stress and burden in treating their patients in home aiming to avoid readmission. In agreement with these results Fathy et al[10]; Woogh[37]; Kastrup[38]; Weissman et al[39]; Rabinowitz et al[40]; Mahendran et al[41]; Anderson and Steinberg[42]; Sanguineti et al[43]; Korkeila et al[44]; Kossovsky et al[45]; Hodgson et al[46] and Pederson and Aarkrog[47] found that males, single or divorced, unemployed and with lower socio-economic groups are good predictors of readmissions. Also, Fink et al[34] found that gender was not related to readmission rates. Moreover, others, e.g. Daly et al[5] found that being female was more likely to predict readmissions but in his study most patients were complaining of depression which is more prevalent in females. In harmony with previous studies by Suzuki et al[8] and Thompson et al[48], the present study found that lower level of education was more prevalent among early readmission groups than single admission groups from both studied hospitals.

Family plays a vital role in determining whether Arabic patients will utilize mental health services. Traditionally, Arabic families show strong preference to provide support for family members when needed, including sufferers of mental illness. These families act as a protective shield against stress[45]. In this study, higher levels of social support, measured by MSPSS, were found in patients with single admission than patients with early readmission (Table 2). In addition, social support was indirectly correlated with number of previous admissions (Table 3) and was considered as a predictor in preventing readmission (Table4). Many researches like Al-Subajeet al[3]; Silva et al[6]; Hendryx et al[7]; Suzuki et al[8]; Postrado and Lehman[50]; Masaki et al[51]; Stewart et al[52] and Olfson et al[53] highlighted the strong role of family support in preventing psychiatric readmissions.

Disorder predictors

Psychiatric diagnosis is one of the important factors that determine readmissions in mental hospitals. The present study illustrated that high rates of early readmission in both studied hospitals were found in patients with schizophrenia and mood disorders (depression, bipolar, and adjustment disorders). These results are compatible with finding of previous studies, e.g. Abu Madini and Rahim[20]; Sanguinetiet al[44]; Korkeilaet al[45]; Hodgson et al[47]; Pedersen and Aarkrog[48]; Olfson et al[53] and Cuffel et al[54]. The nature and severity of mood disorders and schizophrenia may require more frequent readmissions.[6,9,45,49,55,56] However, the diagnosis of substance use was more prevalent in early readmission than single admission in Saudi hospital but not in Egyptian one. Substance use was associated with high rate of readmission in many previous studies e.g. Woogh[38]; Kastrup[39]; Masaki et al[51]; Olfson et al[53]; Miller et al[57]; Lewis and Joyce[58]; Haywood et al[59] and Chang et al.[60] The difference between both studied hospitals, in the present study, in the prevalence of substance use among early readmission groups may be related to the difference in type of substances use in both countries. In Saudi Arabia the most common substances used are amphetamine, alcohol, khat, and cannabis.[61,62] The uses of amphetamines are known to be associated with severe psychotic symptoms that frequently require hospitalization. On the other hand, in Egypt the most common substances used are cannabis, opioid, and alcohol. These substances are less likely to produce psychotic symptoms that require hospitalization.

A number of studies[10,42,63,64] found that longer duration of illness is associated with increased readmissions rate. Similar results were found in this work, longer duration of illness in both Saudi and Egyptian groups, was found to be more in patients with early readmission than in single admission groups (Table 2). In this study, the number of previous admissions was directly correlated with illness duration and indirectly to level of medication adherence, which were found to be considered as a predictor in preventing readmissions in both groups (Table 4). This could be explained by the possibility that longer duration of illness could lead to less medication adherence, which subsequently increase relapse rates and readmission. In one Kuwait study, Fathyet al[10], it was noted that 60% of readmitted schizophrenics were non-compliant to medication, in spite of having a satisfactory hospital care. Similar results were found by different non-Arab studies e.g. Suzuki et al[8]; Ucok et al[11];Masaki et al[51]; Haywood et al[59]; Green[65]; D'Ercole et al[66]; O'Donnell et al[67] and Weiden et al.[69]

Hospital setting and admission predictors

In the present study, duration of last hospital admission was shorter in early readmission groups than single admitted groups of patients in both studied hospitals. Nearly similar length of stay to the present study was found in two Arabic studies by AbuMadini and Rahim[20] and Fathyet at el[10] (25 days, 41 days respectively). Longer period of stay was found in the American hospital association, 56-75 days[69]. Shorter periods of hospitalization in Arabs countries may be attributed to culture-related negative attitudes towards psychiatric hospitalization and to the structure of the typically larger Arab family, consisting of many members, with strong

ties between them making the family more tolerant of the behavioral disturbance of their ill relatives. In this study, duration of last hospital admission was indirectly correlated with number of admission (Table 3) and was considered as predictors in preventing readmission (Table4). Heggestad[70] concluded that high patient turnover (annual discharges per bed) was significantly associated with an increased risk of readmission. These results were in agreement with Lien [71] and Figeuroaet al[72]who found that longer length of stay predicted fewer readmissions and the length of stay below ten days led to an increase in the readmission rate. On the contrary, Fink et al[35] found that length of stay in admission was not related to readmission rates. Lastly, other researchers have found that longer length of stay in hospitals, especially if more than 60 day, was strongly associated with following readmissions[41,45,51,68,73,74,75]. More recently, Zilberet al[37] found that length of hospitalization was not a predictor of early readmission except for the very short ones (up to eight days), which predicted earlier readmission.

Abnormal discharges from hospital including discharge against medical advice and escape from hospital before completing patients' treatment were more prevalent with statistically significant differences in early readmission groups in both studied hospitals than those of single admission groups. This result is in harmony with previous studies like Lien[71] and Bruffaertset al[76]. Also, Durbin et al[16] found that there was modest support that attending to stability of clinical condition and preparing patients for discharge can protect against early readmission.

Strengths and Limitations

The current study has examined inpatient early readmissions (within three months of discharge) in two different hospitals from two Arab countries. The study highlighted the disorders and patient's characteristics contributing to early readmission. It has also highlighted the fact that social support and medication adherence are important factors in predicting readmissions. These factors are of special importance in cultures that still have deficient community-based mental health services and after discharge care.

This study was constrained by the limited number of patients and hospitals in each country so data could not be generalized. This is why the present study was designed as a multinational, clinical cross-sectional study depending on systemic standardized scales. One more limitation of this study is inability to assess whether patients had received sufficient and reliable psycho-education before their discharge about relapse symptoms and whether patients were given clear instructions about the need to continue medication and community care, and to prevent patients from prematurely discharging themselves against medical advice due to absence of formal protocol of psycho-education in both hospitals.

Conclusions and recommendations

The present study highlighted an important finding that most of the factors playing a role in early readmission in psychiatric hospitals were nearly the same in both studied hospitals. These factors included: male gender; being unemployed or an unskilled worker; being single with low level of education, being from rural areas, receiving a diagnosis for schizophrenia, mood disorders, or substance use; spending short duration of hospital stay in last admission, being discharged abnormally either by escaping from the hospital before completing treatment or discharged against medical advice; having longer duration of illness; with poor medication adherence and low social and family support. Early detection and management of these factors can decrease the rate of readmission and so decrease the cost and time expenditure in subsequent preventable admissions.

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الملخص

الأهداف: الهدف من هذه الدراسة هو (1) اختبار العوامل التي تسهم في إعادة إدخال المرضى النفسيين في المستشفى النفسي في وقت مبكر بعد خروجهم من المستشفى، وذلك بإجراء الدراسة في مستشفيين (واحدة بجمهورية مصر العربية والأخرى بالمملكة العربية السعودية). (2) دراسة عوامل الارتباط وبعض عوامل التنبؤ التي تؤثر على إعادة الدخول المرضى النفسيين بعد خروجهم في كلا المستشفيين. **طريقة البحث:** تم اختيار عينة عشوائية مكونة من 100 مريض نفسي من أحد المستشفيات المصرية (مستشفى المنصورة الجامعي) وكذلك تم اختيار عدد مماثل من المرضى من مستشفى بالسعودية (مستشفى الطائف للأمراض العقلية). هؤلاء المرضى هم من الذين تم إعادة دخولهم (إيداعهم) بالمستشفى في غضون 3 أشهر بعد خروجهم من السابق من المستشفي. و تتألف المجموعة الضابطة من 50 مريضا مصريا وعدد مماثل من المرضى السعوديين الذين دخلوا المستشفى مرة واحدة فقط خلال السنتين الماضيتين، وقد تم اختيارهم أيضا بشكل عشوائي. وشخص جميع المرضى وفقا لمعايير DSM-IV-TR. واستخدم واحد من المقاييس لدراسة العوامل المنبئة لإعادة إيداع المرضى النفسيين المبكر دراسة موضوعية وهو اختبار تقديم الدعم الاجتماعي المدرك واختبار الالتزام بتناول الدواء متعدد الأبعاد، وذلك لتقييم الدعم الاجتماعي والامتثال للعقاقير. **النتائج:** وجدت الدراسة أن من معظم العوامل التي تلعب دورا في إعادة الإيداع المبكر بمستشفيات الأمراض النفسية تقريبا متماثلة في كلتا المستشفيتين اللتين شملتها الدراسة. وقد توصلت الدراسة إلى التنبؤ بان المرضى "الذكور، الغير متزوجين، الذين لا يعملون (العاطلين)، ممن يعيشون في مناطق ريفية، ودرجة تعليمهم (دراسة ابتدائية)، وكان تشخيص إمراضهم إما اضطرابات المزاج أو الفصام و الذين تم خروجهم من المستشفى دون استكمال معالجتهم كانوا الأكثر من حيث إعادة الدخول المبكر المتكرر بكلا المستشفيين. وترتبط إعادة الدخول في كلا المستشفيين ارتباطا طرديا بمدة المرض و بعدم الالتزام بتناول الدواء ، ارتباطا عكسيا مع درجة الدعم الاجتماعي المدرك. **الاستنتاجات والتوصيات:** تلعب الكثير من العوامل دور في التنبؤ في إعادة الدخول (الإيداع) المبكر بالمستشفيات النفسي، لذا فمعرفة هذه العوامل والكشف المبكر عنها يساعد كثيرا في توفير الجهد والوقت وكذلك تقليل التكلفة التي تنفق على علاج المرضى النفسيين.

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Prevalence and Correlates of Physical and Sexual Assault History in Patients with Schizophrenia

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انتشار ومصاحبات الضرار الجسدي والنفسي عند مرضى الفصام

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Abstract

Background and subjects: The present study reports the prevalence of sexual and physical abuse in a sample of 98outpatients with schizophrenia in Egypt. Clinical assessment consisted of the Positive and Negative Syndrome Scale (PANSS), Trauma Assessment Questionnaire (TAA), and demographic and psychosocial factors. **Results:** One half of the sample of patients with schizophrenia had experiences of sexual or physical abuse prior to the onset of their illness. Contrary to previous reports, sexual abuse was significantly more reported among males compared to female patients while two-thirds of the patients reported physical abuse and it was significantly more among females .Compared with non-abused patients (n =45), the abused patients (n =53) showed lowered scoring on the Global Assessment of Functioning Scale. However, no difference in psychotic symptoms in patients with either physical or sexual abuse alone or any of them. **Conclusions:** We consider this topic to be underestimated and accurate figures are very difficult as there are variable degrees of cultural differences with its social and religious background. Clinicians should be alerted to the high prevalence of abuse in this population and efforts should be targeted to their poor psychosocial functions.

Declaration of interest: None

Keywords: Schizophrenia, physical abuse, sexual abuse, PANSS, TAA.

Introduction

There is now substantial evidence that child sexual abuse (CSA) and child physical abuse (CPA) could lead to a range of mental health problems in childhood.[1] Child abuse has also been shown to have a role in most adult disorders including schizophrenia.[2]Systematic population surveys suggested that rates of exposure to potentially traumatic situations in the general populations reached estimates of approximately 60.7% for men and 51.2% for women.[3] Research that has explored trauma among individuals with schizophrenia or psychosis in general has begun to suggest that exposure rates to traumatic events may be significantly higher in these groups. For example, in a sample of 47 individuals diagnosed with schizophrenia living in the community, Resnicketal.[4] found that nearly 75% reported exposure to a traumatic event that met Criterion A for posttraumatic stress disorder (PTSD) and 13% met full criteria for PTSD.[5] A recent review of the North American psychiatric literature produced weighted averages for females and males of reported child sexual abuse (47% females, 29% males), child physical abuse (47% females, 49 % males), and child physical or sexual abuse (65% females, 56 % males) from 59 studies of psychiatric inpatients and outpatients of whom at least half were diagnosed with a psychotic illness.[6]

Patients with schizophrenia who had a history of sexual and physical abuse showed more severe and complicated conditions than those who had not been abused. Ross et al.[7] interviewed 83 adults with confirmed diagnoses of schizophrenia and revealed that the groups with an abuse history were more likely to have experienced more severe levels of hallucinations and delusions than those without reported abuse. Pursuing the links between childhood trauma history and social functioning, Lysaker et al. [8,9] assessed the psychosocial and neurocognitive functioning of a sample of patients with schizophrenia. Analyses revealed that the group who reported childhood sexual abuse demonstrated poorer current work functioning, a heightened vulnerability to emotional turmoil and performed more poorly on tests of working memory and information processing speed. Others suggested behavior hostility[9], substance abuse[10], dissociative symptoms [11], suicidal intent [12] and having higher global symptom severity [13] as correlates of abuse in schizophrenia.

The majority of studies in this context were conducted in Western Europe and North America with only few recent studies conducted in the developing world. However, whether the effects of sexual and physical abuse are consistent across cultural boundaries has yet to be examined. In India, one study conducted surveyed 146 women with severe mental disorder in an inpatient unit of a psychiatric hospital. 7% of women reported sexual coercion during childhood, 16% as an adult, and 7% reported both. The most commonly reported experience involved sexual intercourse involving threatened or actual physical force, which was reported by 14% of the sample.[14] Another study indicated that the prevalence rates of sexual and physical abuse in a sample of South Korean women with schizophrenia were within the range of prevalence found in Euro-American cultures, but the abused patients failed to note significant differences in

psychotic symptoms addressed in previous studies.[15] In Egypt, there is limited literature addressing the extent and pattern of child abuse in the general population and amongst people with severe mental illness.[16,17] First, the Egyptian culture which values child obedience and power assertive discipline, corporal punishment and maltreatment are expected to be a common practice.[18] Second, lack of definite statistics and under-reporting cases of child abuse since, in most cases, the child hides the event from his family for fear of shame and embarrassment.[19] In addition, prevalence studies yielded disparate findings, in part explained by their differing methodology utilized in ascertainment of prevalence and nature of the recruited samples.[20]

However, the community studies conducted in Egypt have shown prevalence rates of physical maltreatment ranging from 2% to 60% in a variety of communities.[19,21,22] In a retrospective study for 631 psychiatric outpatients attending a university clinic in Egypt, 8.6% reported a history of sexual abuse before the age of 18 years with a higher incidence among females than males.[23]

The present study reports descriptive data on the prevalence of previous exposure to sexual and physical abuse among a mixed gender sample of psychiatric outpatients who were recruited from a university hospital in Mansoura, Egypt. The study examines also the associations of previous abuse with an array of demographic factors, clinical symptoms as well as psychosocial adjustment. We hypothesized that the participants who had physical or sexual abuse would have greater levels of symptoms and poorer psychosocial function than the group without trauma history.

Subjects and Methods

Subjects

Eighty-nine subjects with a diagnosis of schizophrenia, as determined by a psychiatrist responsible for the follow-up of patients in the outpatient psychiatric clinic of Mansoura University Hospital, Egypt, who used a clinical interview that employed the DSM-IV-TR criteria in the year 2008-2009. All subjects were aged 18-65 years with no major chronic physical illness, organic brain syndrome or history of substance abuse. All participants provided informed consent in advance of assessment and the study was approved by the college authority as there was not an existing research ethical committee. Subjects were administrated the Positive and Negative Syndrome scale (PANSS) and then asked to complete the Trauma Assessment for Adults (TAA).Collateral evidence for the occurrence of abuse was obtained, e.g. from relatives, in the studied patients and a research assistant was available to assist participants if there were difficulties reading or understanding the scale.

Measures

Sociodemographic information

Chart review was done to obtain information regarding age, marital status, education, income, employment status and duration of illness in years. The Positive and Negative Syndrome scale (PANSS) [24, 25] is a semi-structured interview schedule, which was adapted to assess psychotic symptoms. The scale constitutes 30 items that are arranged as seven positive symptom subscale items (P1-P7); seven negative symptom subscale items (N1-N7);composite score (positive scale score minus negative scale score); 16 general psychopathology symptom items (G1-G16) and three depression/anxiety symptoms (G1-G3,G6), each item rated from 1 (absent) to 7 (extreme).[25]

Trauma Assessment for Adults – Brief Revised Version (TAA) [26]

The TAA is a 12-item questionnaire that has been used successfully to screen for traumatic experiences with a variety of populations, including those with severe mental illness. For our purposes, we were concerned with five items. Three were specifically related to sexual victimization: "Did you ever have sexual contact with anyone who was at least 5 years older than you before you reached the age of 13", "Before you were age 18, has anyone ever used pressure or threats to have sexual contact with you?", and "At any time in your life, whether you were an adult or a child, has anyone used physical force or threat of force to make you have some type of unwanted sexual contact?. The two other items assessed whether the participant had ever been assaulted either with or without a weapon. When the participants answered “yes” to any categories of sexual or physical abuse defined in this study, they were considered as members of the abused group, constructing a binary variable. The TAA was translated into Arabic and back translated into English to ensure that the translated version matched the original scale. The translated version of TAA was administered to all participants in the present study.

Global Assessment of Functioning (GAF) Scale

The Global Assessment of Functioning (GAF) is a method for representing a clinician's judgment of a patient's overall level of psychosocial functioning. As such, it is probably the single most widely used method for assessing impairment among patients with psychiatric or substance use disorders or both.[27,28,29] The GAF

requires a clinician to make an overall judgment about a patient's current psychological, social, and occupational functioning. In DSM-IV-TR, this rating is made on a scale from 1 to 100 with ratings of 1 to 10 indicating severe impairment and ratings of 91 to 100 indicating superior functioning.

Data analysis

Data entry and analysis was carried out using SPSS version 13.0 (SPSS Inc. Chicago, Ill). For continuous data median, mean and standard deviation was used to express these data, Mann Whitney and *t*-tests of significance were employed. For categorical data, percent proportions were used to report. Chi-square, Fisher Exact tests were used as appropriate. P value of < 0.05 was considered significant.

Results

General characteristics

The study included 98 patients with schizophrenia. The mean age of our sample was 35.9 years (SD=10.9, age range 18to 65 years). Sixty-one (62.2%) were males and thirty-seven (37.8%) were females. The mean duration of illness was 10.0 years. There was no significant difference regarding their marital, educational and occupational status.

Sexual or physical abuse

Sexual abuse was reported among 19.4% of cases (confidence intervals, C.I=12.8-28.3), and it was significantly more reported among males compared to female patients (P=0.040), while 38/98 (38.8%, CI=29.7-48.7) of the patients reported physical abuse and it was significantly more among females (P=0.003). Fifty-three patients (54.1%, C.I=48.3-67.4) reported either physical or sexual abuse. Three females and seven males reported both types of abuse. In regard to diagnosis into DSM-IV-TR schizophrenia subtypes, over 40% of both abused and non-abused groups were identified as an undifferentiated subtype.

Comparison between abused and non-abused patients

Tables 1-3 show the scores obtained along the different tools of assessment, namely the Positive and Negative Syndrome Scale (PANSS), total quality of life scale (SQLS) and Global Assessment scale (GAF) among patients in relation to the type of assaults: sexual, physical abuse or any abuse. Those patients who had a history of either physical abuse or any abuse showed no significant difference on the PANSS and GAF scores. Also, patients with a history of sexual abuse compared to the non-sexually abused group showed non-significant PANSS scores but, GAF scores were significantly lower in the sexually abused and showed a P value of 0.028.

Table1. Basic characteristics of the included schizophrenic subjects and pattern of abuse

Characteristics		Females (N=37)	Males (N=61)	Total (N=98)	P value
		No. (%)	No. (%)	No. (%)	
Age in years:	Median (mean ±SD)	39.0(36.4±11.6)	36.0(35.6±10.5)	37.0(35.9±10.9)	0.615[b]
Duration of illness in years	Median	11.0	10.0	10.0	
	Mean ±SD	12.4±8.2	11.3±7.5	11.7±7.8	0.478[b]
Marital status	Single [a]	25(67.6)	40(65.6)	65(66.3)	
	Married	12(32.4)	21(34.4)	33(33.7)	0.840
Educational status	Illiterate	17(45.9)	34(55.7)	51(52.0)	
	Educated	20(54.1)	27(44.3)	47(48.0)	0.464[c]
Employment	Employed	18(48.6)	27(44.3)	45(45.9)	
	No	19(51.4)	34(55.7)	53(54.1)	0.682[c]
Sexual abuse	Yes	3(8.1)	16(26.2)	19(19.4)	
	No	34(91.9)	45(73.8)	38(80.6)	0.0.40*[c]
Physical abuse	Yes	21(59.5)	16(26.2)	38(38.8)	
	No	15(40.5)	45(73.8)	60(61.2)	0.003*[c]
Sexual or physical abuse	Yes	23(62.2)	30(49.2)	53(54.1)	
	No	14(37.8)	31(50.8)	45(45.9)	0.213[c]

[a]Includes widows and divorced.
[b] t-test, [c] Fisher Exact tests of significance.
* Statistically significant

Table2. DSM-IV subtypes among abused and non-abused patients with schizophrenia

DSM-IV subtype	Total population (N=98)		Odds ratio (95% confidence intervals)
	Abused (N=53) No. %	None abused (N=45) No. (%)	
Undifferentiated	22 (41.5%)	18 (40%)	1.06 (0.44 - 2.95)

Paranoid	16 (30.2%)	12 (26.7%)	0.84 (0.32 - 2.22)
Residual	10 (18.9%)	9 (20%)	1.08 (0.35 - 3.27)
Catatonic	1 (1.9 %)	--	- -
Disorganized	4 (7.5%)	6 (13.3%)	1.88 (0.4 - 9.68) †

†Exact confidence intervals

Table3. Assessment results of schizophrenic patients with sexual abuse

	Sexually Abused		
	Abused (N=19) Median (mean ±SD)	**Non-abused (N=79) Median (mean ±SD)**	**P value**
PANSS Score			
Total	**94.0(91.6±21.4)**	**87.0(85.5±17.1)**	0.267
Positive	23.0(22.3±5.5)	22.0(21.6±5.8)	0.852
Negative	26.0(24.3±7.0)	23.0(24.0±4.9)	0.644
General psychopathology	47.0(43.9±11.9)	40.0(39.7±10.3)	0.201
Composite	-2.0(-1.6±6.2)	-3.0(-2.5±5.9)	0.702
Depression/anxiety	9.0(9.7±2.6)	9.0(9.5±3.5)	0.721
SQLS Score: Total	**27.0(27.9±6.2)**	**25.0(26.7±5.6)**	0.555
Psychosexual	13.0(11.6±3.3)	13.0(11.2±3.3)	0.740
Motivation and energy	5.0(5.1±1.5)	4.0(4.1±1.2)	0.183
Symptoms and side effects	6.0(5.9±3.2)	4.0(4.4±2.8)	0.064
GAF Score	**30.0(34.6±6.8)**	**40.0(4.0±7.5)**	0.028

Mann-Whitney test of significance

Table 4. Assessment results of schizophrenic patients with physical abuse

Assessment	**Physically Abused**		
	Abused (N=38) Median (mean ±SD)	**Non-abused (N=60) Median (mean ±SD)**	**P value**
PANSS Score: Total	**101.0(93.0±22.2)**	**90.0(89.8±20.4)**	0.329
Positive:	24.0(22.6±5.3)	21.5(21.3±5.6)	0.280
Negative:	27.0(24.7±7.2)	24.5(24.1±11.0)	0.614
General psychopathology	48.0(45.0±12.9)	43.5(42.6±11.0)	0.261
Composite	-3.0(-3.4±6.4)	-.50(-0.9±5.9)	0.086
Depression/anxiety	9.5(9.7±2.8)	9.0(9.4±2.6)	0.961
SQLS Score Total	**25.0(23.1±6.1)**	**22.0(21.4±6.0)**	0.422
Psychosexual	13.0(12.4±2.1)	11.0(11.0±3.6)	0.116
Motivation and energy	4.0(4.1±1.9)	3.0(3.0±1.0)	0.159
Symptoms and side effects	4.0(4.7±3.2)	2.0(3.2±3.0)	0.117
GAF Score	**30.0(35.2±6.6)**	**30.0(35.3±6.2)**	0.960

Table5. Assessment of schizophrenic patients with sexual or physical abuse

Assessment	**Sexual or physical abuse**		
	Abused (N=53) Median (mean ±SD)	**Non-abused (N=45) Median (mean ±SD)**	**P value**
PANSS Score: Total	**101.0(92.0±22.0)**	**90.5(91.3±20.5)**	0.588
Positive syndrome	24.0(22.5±5.6)	23.0(21.6±5.4)	0.465
Negative syndrome	27.0(24.4±6.9)	25.0(24.3±6.8)	0.912
General psychopathology symptoms items	48.0(44.0±13.3)	45.0(43.1±10.7)	0.545
Composite symptoms score	-2.0(-2.8±6.4)	-1.0(-1.1±6.0)	0.297
Depression/anxiety	10.0(9.6±2.9)	9.0(9.4±2.5)	0.790
SQLS Score Total	**26.0(24.3±6.0)**	**20.0(16.9±6.2)**	0.086
Psychosexual	13.0(11.4±3.1)	11.0(10.8±3.6)	0.556
Motivation and energy	4.5(5.1±1.4)	3.0(3.1±0.9)	0.128
Symptoms and side effects	4.0(4.0±3.2)	1.0(3.2±3.1)	0.175
GAF Score	**30.0(35.4±7.7)**	**30.0(35.1±6.7)**	0.862

Discussion

Little empirical data exist on the rates of exposure to traumatic events and its sequelae especially in patients with schizophrenia in the Arab region. This study was designed to examine the prevalence and clinical and psychometric correlates of sexual and physical abuse among 98 psychiatric outpatients with schizophrenia that were referred to a university clinic in Mansoura, Egypt. They were interviewed using the Positive and Negative Syndrome scale (PANSS), the Trauma Assessment for Adults (TAA) and a socio-demographic questionnaire.

The present study found an overall lifetime prevalence of 54 % in the study sample; 38.8 % physical abuse and 19.4 % sexual abuse. Ten patients met the criteria of both sexual and physical abuse. These prevalence rates are higher than those observed by Mansour et al.[30] in an undergraduate student sample from three different colleges (Medicine, Education and Arts and Literature) of Zagazig University, Egypt (physical abuse= 6%, sexual abuse = 13%). The differences between frequency of childhood trauma in patients with schizophrenia and the normal sample provided additional support to the association of childhood trauma with psychosis. Moreover, the reported prevalence rates of childhood abuse were within the range of prevalence found in studies of exclusively schizophrenic patients. [2,7,11,31,32] However, these rates are lower than those reported in the seriously mentally ill population.[33,34]

In this study, females patients were more likely to report physical abuse and less likely to have been sexually victimized than their male counterparts. These findings contradict the previous western studies.[6,35,39] We consider this topic to be underestimated and accurate figures are very difficult even in self-reported data and there are variable degrees of cultural differences with its social and religious background. [36] The taboo of sexuality in a conservative society such as Egypt is still highly significant especially before marriage.[37] In a survey among 500 Arab women aged between 15 and 59 years, virginity was considered by 90% “a social rule to be maintained”[38], therefore for a girl to lose her virginity before marriage is considered detrimental to the girl’s future.[37]The major concern is that childhood sexual abuse is frequently kept secret from every one for years.[39] A New Zealand study found that the average time it took women to tell another person about having been sexually abused as a child was 16 years.[6]In addition, the response of mental health services to disclosures of abuse in people diagnosed psychotic or schizophrenic, was inadequate specifically in terms of offering information, support or treatment, or considering reporting to legal or protection agencies.[40]

The lower prevalence of physical abuse among males in our study may be due to errors in reporting or associated with a “normalization” of physical abuse within Egyptian society, considering that it is commonly used within families and schools as a mean of disciplining boys as compared with girls. These families are also usually less protective about boys outside home which can increase risks of some types of abuse including sexual abuse, away from parents’ supervision.[16, 17]

Gil et al[41] investigated the long lasting effects of childhood abuse among 99 patients in an outpatient program at a public university hospital in Porto Allegra, southern Brazil and found that childhood trauma associated with increased disability in adulthood reflected impaired overall behavior and global evaluation. Analysis of specific traumatic domains revealed that increased childhood sexual abuse survivors tend to experience greater psychiatric distress and poorer interpersonal functioning than non-abused clinical controls.[42]Previous studies were in line with our findings that there was a significant association between sexual abuse and impaired psychosocial adjustment based on GAF scoring.

Our findings around the lack of significant association of previous exposure to abuse with psychotic symptoms replicated previous reports.[15,43,44] On the contrary, it contradicts previous studies that reported significant associations of abuse with positive symptoms and lowered functioning in patients with schizophrenia.[7,41]

This finding deserves special consideration since it suggests that sexual and physical abuse alone did not show influence over clinical picture or disability in our study. These two kinds of trauma are likely to affect children later in life in relation to other traumas such as emotional and physical neglect and emotional abuse (which is not measured in this study). Moreover, they have been more often associated with the etiology of mental disorders than the apparently “less traumatic” types of abuse whose damage may be related to neurodevelopment disorders, especially during periods of cerebral maturation, which could interfere in more subtle aspects, such as functional and social performance, and in the ability to respond to stressful situations.[45,46]

Cultural difference in reaction to trauma is an interesting issue. People in our region with strong religious background believe that all things that happen to person, both good and bad, are the will of Allah and therefore accept their fate with courage and strong faith.[47] Also, the

parenting styles and practices that have a significant effect on the psychosocial development of children differs across cultures. In contrast with reports on the effect of authoritarian parenting in the West, Arab children consider application of the authoritarian style of punishment as the normal duty of parents and teachers, which was associated with better self-concept and self-esteem and had no negative influence on Arab adolescents' mental health. [48]

Limitations

Importantly, there are several limitations to the study. First, our research was exploratory and limited because of the small sample size drawn from a single psychiatric facility. Further research is needed which should involve collection of more detailed trauma histories from broader samples and assessments collected at multiple time points. The retrospective account of sexual abuse may be subject to bias or error as it depends on the subjective recall and, therefore, it needed to be evaluated and checked several times. Given the cross sectional nature of the study, we cannot determine whether the nature of the relationship between schizophrenia and abuse was causal. There is also a need to compare the context and pattern of abusive experiences of patients with schizophrenia with their counterparts in the general population to delineate factors that might increase their vulnerability in schizophrenia.

Conclusions

One half of the sample of patients with schizophrenia had experiences of sexual or physical abuse prior to the onset of their illness. Contrary to Euro-American studies, sexual abuse was significantly more reported among males compared to female patients while two-thirds of the patients reported physical abuse and it was significantly more among females. We consider this topic to be underestimated and accurate figures are very difficult as there are variable degrees of cultural differences with regard to social and religious background. Impaired psychosocial functioning best described those who were sexually abused in comparison to non- sexually abused patients with schizophrenia in the same facility, but the study failed to note significant differences in positive symptoms endorsed in the Euro-American literature. Every effort must be made to reduce the prevalence and impact of physical and sexual abuse among patients with schizophrenia. All mental health services should establish policy guidelines to establish who should ask about trauma and when, including child abuse. Treatment programs that consider the role of the culture should be implemented.

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الملخص

الغرض: الغرض من هذه الدراسة هو دراسة انتشار ومصاحبات الضرار الجسدي والنفسي عند 98 من مرضى الفصام المصريين. وتألف التقييم السريري من مقياس الأعراض الإيجابية والسلبية و الصدمة النفسية والعوامل الديموغرافية والنفسية وأبرزت النتائج إن أكثر من نصف العينة من المرضي قد عانت من الاعتداء الجنسي أو البدني قبل ظهور المرض لديهم وخلافا لتقارير سابقة ، كان الاعتداء الجنسي بشكل ملحوظ بين الذكور مقارنة مع المرضى من النساء في حين سجل الثلثين من المرضى الإيذاء الجسدي، وكان أكثر بين الإناث. بالمقارنة مع المرضى الذكور. بالمقارنة للعينة غير المضارة سجلت العينة المضارة انخفاض في التقييم العام لمقياس الأداء، ولكن لا يوجد أي فروق في الأعراض الذهانية. **الاستنتاجات :** نحن نعتبر أن هذا الموضوع قد تم التقليل من أهميته ولا توجد أرقام دقيقة، وهناك درجة متغيرة من الاختلافات الثقافية مع خلفيتها الاجتماعية والدينية ، ويجب تنبيه الأطباء لارتفاع معدل انتشار سوء المعاملة في هذه الفئة من السكان، وينبغي أن تستهدف الجهود المبذولة سوء الوظائف النفسية والاجتماعية في هذه الفئة.

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Prevalence of mental health disorders among health care providers in the Psychiatric Hospital, Bahrain

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إضطرابات الصحة النفسية بين مقدمي الرعاية الصحية في مستشفى الطب النفسي بمملكة البحرين

هيثم جهرمي، زهرة الشويخ، جنانافيلو بنجاشرم، زهراء سيف

Abstract

The present study was conducted to determine the prevalence of mental health disorders morbidity among health care providers in the Psychiatric Hospital, Bahrain. Two hundred and sixty one health care providers were investigated using the English-language version of the General Health Questionnaire-28 items (GHQ-28) as a research tool. One hundred and fifty three persons responded to the survey, which was a 59% effective response rate. Selecting the suggested default score of 4 points in GHQ-28 as a cut-off point, 41% of health care providers were found to suffer mental disorders and this was more common among non-Bahraini, male nurses. The prevalence dropped to 38% at 5 points threshold, 32% at 6 points threshold, 18% at 9 points threshold and finally 9% at 11 points threshold. Chi square was used to compare the frequency distribution of the GHQ-28 scores according to gender, nationality and professional background, but the results showed no statistically significant differences between the groups. It is concluded that psychiatric morbidity among health care providers could be considered high in the Psychiatric Hospital, Bahrain if the cut-off scores were the default 4 points; however, the rates could be very well within international reported rates if the cut-off scores were set 9 points or higher.

Keywords: General Health Questionnaire-28, mental health disorders, GHQ-28, health care providers, Bahrain.
Declaration of Interest: None

Introduction

Health care is generally considered to be high-stress profession [1,2]. Health care providers are under a variety of stressors related to health care administration, population being served, working conditions, excessive workload, patients' aggressive behavior, demanding and sometimes bullying attitudes [3]. How applicable Western data might be on the topic to Middle Eastern remains an open question to the readers in the field. To address this question using the Kingdom of Bahrain as a case, a census of all health care providers in the Psychiatric Hospital, Ministry of Health, Kingdom of Bahrain, were assessed for mental and emotional disorders. Several challenges confronted the health systems in the Middle East region including underfunding of the health sector, poor clinical leadership, rapid population and demand growth, higher child mortality rates compared with developed countries, disparities in health care resource distribution, and low interest in research and evidence[4,5]. Among the difficulties that have not received much attention are the psycho-social and emotional problems confronting health care providers in the Middle East region [4]. While there had been numerous studies conducted around the world amongst health care workers investigating their mental health problems, these types of studies are rare in the Middle East region. What is more interesting to report is that there were no such studies been done using mental health care providers as a research sample. According to Western health care literature, of the controversy that still surrounds the definition of caring stress, the existence of this problem has been well-documented [6].

According to the World Health Organization (WHO), there is no one official definition of mental health. Nevertheless, a widely accepted understanding of mental health can be identified as a state of well-being to which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community [7]. The positive dimension of mental health is stressed in the WHO's definition of health as contained in its constitution: Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity [7].Psychiatric morbidity in the general population and at the workplace can be measured with standard screening instruments.

Methods

The research recruited all health care providers in the Psychiatric Hospital, Bahrain (n=261) in a cross-sectional survey design aimed at assessing their mental health status. The participants consisted of 52 psychiatrists of different grades including consultants and residents, 183 psychiatric nurses, 6 social workers, 4 clinical psychologists, 14 occupational therapists and 2 physiotherapists. The research excluded the managerial administrators and support services staff as the focus of this research was on health care providers or those individuals who engage in providing direct care to patients.

The 28-item General Health Questionnaire (GHQ-28) was the selected research tool. The GHQ-28 is used as a self-administered screening tool for detection of mental disorders [8]. This questionnaire was developed by Goldberg and Hillier in 1979 for measuring the psychological aspects of quality of life according to four domains (a) somatic symptoms, (b)anxiety and insomnia, (c)social dysfunction and (d)severe depression [9,10]. It assesses the respondent's current state and asks if that differs from his or her usual state. It is therefore sensitive to short-term psychiatric disorders but not a long-standing

attributes of the respondent. It has been widely used in many countries in clinical and non-clinical settings [11, 12]. Studies on the validation of the GHQ-28 in different countries have demonstrated its high psychometric properties (validity and reliability) as a screening tool for mental disorders in the general community [9]. The English-language version of the GHQ-28 was used in this research. The native language in Bahrain is Arabic; however, due to the large number of non-Arabic speakers within the sample and the acceptable English-language proficiency of Bahraini/Arabic staff a decision was made to use the English-language version. The GHQ-28 takes less than 10 minutes to complete as a self-administered tool.

To collect data, all 261 health care providers (n = 261) of the Psychiatric Hospital, Bahrain, were surveyed using the GHQ-28 and a basic demographic sheet. The survey pack was dispatched with an accompanying letter, instruction sheet and a self-addressed envelope for the return of information. The letter identified the researchers and qualified the survey as a means of soliciting the health care providers' experience of mental health status. A follow-up postcard was circulated to everyone to enforce anonymity 10 days following the initial mailing, requesting compliance and announcing the end of data collection within the next four days. Ethical approval was sought and granted from the research committee in the Ministry of Health, Psychiatric Hospital, Bahrain prior to the initiation of the research. All the participants gave permission for the research to be published and presented.

Using the Statistical Package for Social Science (SPSS) Version 16.0 for Windows, the investigators performed several quantitative analyses. Descriptive data analyses were used to describe the demographics of the respondents their GHQ-28 scores. Internal consistency was calculated for the GHQ-28 and its subscales using the Cronbach's alpha coefficient. The Chi square statistic was used to compare the frequency distribution of the GHQ-28 scores according to gender, nationality, and professional background. P-value was set as <0.05.

In interpreting the results of the GHQ-28 it is important to recognize that there are no thresholds for individual sub-scales. Individual sub-scales are used for providing individual diagnostic or profile information. For identifying caseness with GHQ-28, the total of the sub-scales is used. Depending on how GHQ-28 is scored suggested default threshold will vary [10, 13]. In this research project the GHQ scoring (0-0-1-1) was utilized because it is the original method advocated by the test authors. The GHQ scoring threshold for the 28-items version is ≥ 4 (maximum is 28).

Results

One hundred and fifty-three respondents provided usable returns (approximately 59% (153/261 effective response rate). The results demonstrated that the major portion of clinicians fell in the 26~31 and the 32~37 years age groups. The percentage of males (47.7%) to females (52.3%) was slightly skewed, reflecting the higher number of females in the fields of health care, with the vast majority of females being assigned in the nursing services. Bahraini clinicians accounted for about 56% of the total samples, reflecting the national shortage of Bahraini psychiatric health providers. The non-Bahraini clinicians consisted mainly of nurses from India and the Philippines. A breakdown of the sample by professional background showed that the participants were spread proportionally across the professions employed within the hospital, with 78.4% being nurses, 9.2% being medical doctors, and 12.4% being other health care professionals (including occupational therapists, physiotherapists, social workers, and clinical psychologists). The Cronbach's test was used to test the questionnaire internal consistency; this resulted in a coefficient of 0.89 for the GHQ-28 as an instrument.

When the suggested default cut-off point of 4 for the GHQ-28 was used, psychiatric morbidity was estimated to be 41.2% (n = 63). Because of the lack of previous GHQ-28 research studies in Bahraini psychiatric facilities various cut-off point were used along with the recommended point of 4. For example, psychiatric morbidity dropped to 38.6% when the data were analyzed according to a 5 points threshold; to 32% at a 6 points threshold, to 18% at a 9 points threshold and again to 9.2% at 11 points threshold. Table 1 presents a variety of provenances at different cutoffs. The female to male ratio of those with psychiatric disorders was 1:1.25 at 4 points cut-off. The Bahrainis to Non-Bahrainis ratio of those with psychiatric disorders was 1:1.14 at 4 points cut-off. Nurses were the major group reporting a psychiatric morbidity with 41.7% of the psychiatric nurses in Bahrain reporting a score greater than 4 points on the GHQ-28. Psychiatric morbidity appeared to be higher among those under 45 years of age. When the GHQ-28 scores were compared between groups according to age, marital stats, sex, nationality and professional background no statistically significant difference were obtained. Table 2 present the GHQ-28 Scores by Sex, Nationality and Job Category using the default 4 points cutoff.

Table 1

GHQ-28 Scores According to different cut-offs N=153	
4 points cut-off	41.2%
5 points cut-off	38.6%
6 points cut-off	32%
9 points cut-off	18.3%
11 points cut-off	9.2%

Table 2GHQ-28 Scores by Gender, Nationality and Job Category N=153

Variable			Cases with GHQ-28 ≥4 points threshold		
	N	%	N	%	Sig.
Gender					.10
Male	73	47.7	35	47.5	
Female	80	52.3	28	35	
Nationality					.58
Bahraini	85	55.6	33	38.8	
Non-Bahraini	67	43.8	29	43.3	
Job Category					.90
Medical Doctors	14	9.2	5	35.7	
Nurses	120	78.4	50	41.7	
Other Healthcare Professionals	19	12.4	8	41.1	

Detailed examination of the descriptive statistics of GHQ-28 subscales indicated the highest mean scores were on the Anxiety/Insomnia subscale (Mean 1.67, SD 2.15, range 0~7), and Somatic symptoms subscale (Mean 1.01, SD 1.54, range 0~7), followed by lower score on Social dysfunction (Mean 0.76, SD 1.34, range 0~7), and the lowest were Sever depression (Mean 0.54, SD 1.30, range 0~7). Table 3 presents the GHQ-28 Scores by Subscales

Table 3

GHQ-28 Scores by Subscales

GHQ-28 Subscale	Cronbach alphas	Mean	SD	Range
Somatic Symptoms	0.75	1.01	1.54	**0-7**
Anxiety and Insomnia	0.85	1.67	2.15	**0-7**
Social dysfunction	0.75	0.76	1.34	**0-6**
Severe Depression	0.83	0.54	1.30	**0-7**
GHQ-28 Total Score	**0.89**	**4.00**	**4.78**	**0-24**

Discussion

The research tool GHQ-28 used in the study is one that is commonly used to detect prevalence of psychiatric morbidity in a population[9].The prevalence of psychiatric disorders was 41.2% (n=63) when the cut-off point of 4 in the GHQ-28 was used as advocated by original GHQ developer. This is a higher figure than the results published previously by several authors; previous research from North America [14], Europe [15, 16] and Far East [5, 17, 18] tended to report approximately 30%. It is, however, very important to recognize that some international researchers reported their results according to various cut-off points including 4, 5, 6, 9 and 11 points [14, 15, 16, 17, 18]. Thus, the authors cannot conclude with confidence that the prevalence of mental health disorders in Bahrain for mental health providers is higher than other countries.

A prevalence of 47.9% in males and 35% in females was found when the cut-off point of 4 was used. These findings are similar to some previous research that found a prevalence of psychiatric morbidity in males tended to be higher than in females; for example, Wild goose and colleagues found that male staff members working in acute psychiatric wards scored significantly higher than their female colleagues [6]. However, a more widely accepted result in the literature is that females will report a higher prevalence of psychiatric morbidity than male at the 4 points threshold. Prior to analyzing the data, the researchers expected that females will report a higher prevalence of psychiatric morbidity due to the fact that most women in Bahrain are looking after their families. The demands of care-giving may put women under greater stress than men, which in turn may lead to the increase in psychiatric illness. Goldberg and Bridges, as well as Wright and Perini advised that the cut-off point should be raised from 4 or 5 to 9 for the GHQ-28 in order to increase the assessment's specificity [19, 20] when comparing gender. Following their recommendation our study revealed that psychiatric morbidity was found to be more common in males than females regardless of the cut-off point assigned. However, statistically speaking we conclude that gender does not differentiate the level of psychiatric morbidity.

As expected non-Bahraini appeared to be at a higher risk of psychiatric illness than Bahraini, but the difference between the two groups was not significant (p-value 0.58). It is well documented in the literature that mental illness problems increase when people live in a different culture, which has formed the basis of the authors' prediction [18].

In the study by Carpenter and his colleagues, the researchers found no significance on the GHQ-28 scores among the different health care workers subgroups [21]. Similarly, in our study, although nurses reported a higher

prevalence of psychiatric morbidity than medical doctors and other health care workers, their score were statistically non-significant when compared with other groups. Selecting a score of 4 in GHQ-28 as a cut-off point, approximately 42 % of nurses were found to suffer from mental disorders and this was more common among males. They are particularly prone to mental health problems compared with other health care provides who are engaged in other types of jobs because they work night or irregular shifts more often, which affects the circadian rhythm and disturbs other biorhythms, leading to failure of various physiological functions [22]. Studies have shown that shift-work has a negative impact on job performance, sleep, physical and emotional health, social and family life, drug use and level of job-related stress [22, 2]. The study by Angelina and colleagues showed that the prevalence of psychiatric disorder, anxiety, and depression were higher for medical doctors compared with nurses, this was statistically not significant (doctors 46% versus nurses 41%) [23]. The researchers gave justifications on how elements of the work environment did impact on the emotional health of health care workers- their recommendation was that organizational development initiatives should include employee mental health issues in order to create a more positive work environment.

To the best of the authors' knowledge, this is the first published study that has assessed the psychiatric morbidity of the health care providers working in the Psychiatric Hospital, Bahrain and possible other countries in the Arab world. Nevertheless, there are a number of limitations to this study, which need to be considered when reviewing its findings. These limitations should be taken into account when directing future studies. The major limitation of this research study is related to the non-response bias. Non-response leads to a smaller final sample size (respondents), and therefore, to a loss of accuracy in population estimates. The non-response bias occurs when a significant number of people in the survey sample fail to respond and have potentially relevant characteristics that differ from those who do respond. It is very important, therefore, to follow up these non-respondents and to study their characteristics, profile on the topic under investigation.

The second main limitation to this study was the use of the English-language questionnaire GHQ-28 in a non-English speaking country and having a translator might have influenced the data collection. Nevertheless, a rationale for using the English-language version of the questionnaire was clearly stated in the methodology section. Third, the GHQ-28 is a well-validated measure of psychological morbidity, but more comprehensive assessments are required to identify specific psychiatric diagnoses among the healthcare providers in the Psychiatric Hospital, Bahrain. Using more than one instrument will be a highly appreciated triangulation strategy to reveal hidden psychiatric illnesses. Finally, further qualitative studies are needed to investigate the psychological determinants of health care providers' and strategies for improving it.

Conclusion

The results showed that the mental health status of health care providers in the Psychiatric Hospital, Bahrain was poor. The prevalence of mental disorders in this study dropped depending on the cut-off score that was selected. The 41% of poor mental health status dropped to 38% at 5 points threshold, 32% at 6 points threshold, 18% at 9 points threshold and finally 9% at 11 points threshold. This study supported the results of previous research showing high rates of psychiatric morbidity among health care providers at the 4 points cut-off scores; however, the rates could be very well within international reported rates if the cut-off scores were set at 9 or higher. A validation study in Bahrain will shed further light on this issue. Our study found that psychiatric morbidity occurred more commonly in non-Bahraini, male nurses. The psychiatric morbidity pattern among the hospital staff is similar to the international information on the prevalence of mental disorders, with the prevalence of anxiety disorders/insomnia and somatic symptoms being the leading mental health problem.

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ملخص

أجريت هذه الدراسة لتحديد مدى انتشار اضطرابات الصحة النفسية بين مقدمي الرعاية الصحية في مستشفى الطب النفسي، وزارة الصحة، مملكة البحرين. تم إجراء البحث باستخدام منهجية الاستبيانات باستخدام استبيان الصحة العامة - 28 (General Health Questionnaire-28) كأداة بحثية لجمع المعلومات. تم توزيع استبيان الصحة العامة- 28 علي جميع الأخصائيين العاملين (أطباء، ممرضين، بحث اجتماعي، أخصائيي تأهيل، الأخصائيين النفسيين) في المستشفى البالغ عددهم 261 أخصائي. استجاب 153 أخصائي فقط مما يعادل نسبة 59%.أظهرت النتائج وجود نسبة 41 ٪ من مقدمي الرعاية الصحية يعانون من اضطرابات الصحة النفسية وكان هذا أكثر شيوعا بين الممرضين الذكور الغير البحرينيين، غير أن الدراسة لم تتوصل إلى وجود أي فرق ذات دلالة إحصائية في نسبة الإصابة باضطرابات الصحة النفسية وفقا لنوع الجنس أو الجنسية أو الخلفية المهنية. تنخفض نسبة الإصابة إلى 38% باستخدام معيار الخمس نقاط كفاصل، و 32% باستخدام معيار الست نقاط كفاصل،و 18% باستخدام معيار التسع نقاط كفاصل و أخيرا إلى 9% باستخدام معيار الإحدى عشر نقطة كفاصل. نستنتج من هذا البحث بأن اضطرابات الصحة النفسية بين مقدمي الرعاية الصحية في مستشفى الأمراض النفسية في مملكة البحرين هي نسبياً من ضمن أعلى المعدلات المسجلة في البحوث.

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The effect of religious and spiritual beliefs on the quality of life among university students in Jordan measured by the modified version of (WHOQOL-SRPB) instrument

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تأثير المعتقدات الدينية والروحانية على جودة حياة الطلبة الجامعيين في الأردن باستعمال مقياس جودة الحياة الروحاني والديني المعدل (WHOQOL-SRPB)

مها سليمان يونس، أحمد سمير النعيمي، محمد الدباس

Abstract

Objectives: The aim of this study was to examine the role of the spiritual, religious and personal beliefs (SRPB) in enhancing the individuals' satisfaction with their quality of life through implementing the Arabic modified version of the World Health Organization Quality of Life-Spiritual, Religious and Personal Beliefs (WHOQOL-SRPB) questionnaire for the first time in Jordan. **Method:** A convenient homogenous sample of medical students attending the Jordan University of Science and Technology (JUST) completed 100 forms of the Arabic modified version of the self-report WHOQOL-SRPB questionnaire, which measures the subjective satisfaction of quality of life through spiritual and religious beliefs. The correlation between the students' beliefs and selected socio-demographic variables was investigated. The perceived importance of spiritual and religious beliefs was estimated. **Results:** There were moderate to high levels of satisfaction with the respondents' life quality assessed through the strength of their beliefs. The results showed no marked correlation of socio-demographic factors with the measured facets of the WHQOL-SRPB instrument. The study sample represents healthy educated university students who cherished the same Islamic beliefs. **Conclusion:** This study reflects the positive effect of religious and spiritual beliefs on the student's subjective satisfaction of life quality which is consistent with previous literature .The authors call for future studies in other Arab societies.

Keywords: Spiritual, religious beliefs, quality of life, Jordan students
Declaration of interest: None

Introduction

Although spirituality and religion were described as difficult topics to research, considerable literature on the relationship between spirituality, religion, physical and mental health has indicated a positive association between religiosity and psychological well-being[1,2,3]. Over the last two decades, many studies proved the beneficial and protective effects of religious involvement on peoples' mental and physical health[4]. This association has extended across various populations including physically vulnerable people such as the old, the ill, and the disabled.[5]

Despite the fact that religion and spirituality were studied as combined, it is necessary to separate the conceptualization of religion and spirituality. Religion is an organized belief system sustained by institutions, tribes or culture in which rituals and practice are applied. This requires a class of individuals maintaining its structure to mediate between believers and God like priests and clergymen[1,2], while spirituality is a broader concept that focuses on supernatural power greater than oneself and more like an individual experience. Personal belief usually refers to the manner in which one follows individual thoughts, such as a particular philosophy or a scientific theory or may be just a moral and ethical code.[1,2,6]

In our Muslim culture, spiritual and or personal beliefs have not been identified as the majority of Arab populations are Muslims with other monosethtic religious minorities. In the available literature, the religion of Islam embraced the spirituality and personal beliefs for the reason of lacking data about non-believers or secular Arab populations to compare with[7,8].However,studies involving spirituality, religion and quality of life are scarce [9,10].The gap for such studies in our culture motivated us to investigate the influence of religion and spirituality on the individual quality of life among selected Jordanian population by implementing the World Health Organization Quality of Life-Spiritual, Religious and Personal Beliefs (WHOQOL-SRPB) Test Instrument.

Material and method

During the month of April 2008, 100 medical students from the fifth grade at the Jordan University of Science and Technology (JUST), Irbid volunteered to complete the self-report Arabic language modified version of the WHOQOL-SRPB following a thorough explanation of the purpose of the study. To ensure confidentiality, students were instructed not to put their names on the questionnaire forms. The exclusion criteria were any individuals who were non-Muslim, non-Jordanian nationals so as to ensure the homogeneity of the sample. The protocol was approved by the Research and Ethical committee of the Faculty of Medicine at JUST. Data was collected by self-administered questionnaire. Data analysis was computer aided using SPSS version 13 software. The difference in mean quantitative normally distributed variables (facet and total scores) between two groups was assessed by independent samples t-test, while between more than two groups ANOVA test was used. P value less than 0.05 was considered statistically significant. The end point was to collect 100 completed forms. The collected forms were entered into a computerized data base to be checked for errors and inconsistencies.

Study Instrument

The WHOQOL-SRPB Field Test Instrument consisted of 32 questions, covering quality of life aspects related to spiritual, religious and personal beliefs (SRPB).These questions respond to the definition of quality of life as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns [11].This instrument was developed from an extensive pilot test of 105 questions in 18 centers around the world constructed by a coordinating group of collaborating investigators in each of the field sites and a panel of consultants to finalize a version to be used for field trials [12].The original WHOQOL-100 instrument, designed to test the global quality of life, was issued from the Mental Health and Substance Dependence Department - World Health Organization(WHO)- in 1998 [1,12,13]; it was reproduced in different versions across cultures with different modifications, including Arabic translations and has been implemented in many Arab countries[9,10,14].The WHO recommended translating the original instrument according to language/cultural versions suitable for use which is available on the website[11,15]. The original SRPB transcultural version was translated into Arabic by senior bilingual psychiatrists working in the research unit of the WHO office in Amman, Jordan. Back translation into English and final approval of the Arabic translation was supervised by the same unit in accordance with the protocols of the WHO-SRPB Group, Department of Mental Health and Substance Dependence ,WHO, Geneva[16].

The standard transcultural English version included the following 11 facets of SRPB:

Spiritual connection
Meaning and purpose in life
Experiences of awe and wonder
Wholeness and integration
Spiritual strength
Inner peace
Hope and optimism
Faith
Love and compassion
Death and dying
Kindness to others

The Arabic modified version of the WHOQOL-SRPB instrument contains another set of five facets in addition to the previously mentioned 11 facets. These include:

Forgiveness and guilt
Acceptance of/by others
Freedom to practice believes
Attachment/detachment
Life control by self or others

Each facet contains selected item questions. Individual items are rated on a 5 point Likert scale where 1 indicates low, negative perceptions and 5 indicates high, positive perceptions. For example, an item in the positive feeling facet asks “To what extent do you feel love from a higher power?” and the available responses are 1 (not at all), 2 (a little), 3 (a moderate amount), 4 (very much) and 5 (an extreme amount). As such, the total facet scores are scaled in a positive direction where higher scores denote higher quality of life.

Some items, such as those related to death and dying, are not scaled in a positive direction meaning that for these facets lower scores denote higher quality of life. All negatively phrased items need to be reversed, so that low scores reflect better quality of life. Facets are scored through summative scaling. Each item contributes equally to the facet score. Mean scores are then calculated for each facet. In this case, all the items in the respective facet are added and divided by the count of items. Therefore, each facet can have a score between a minimum of 1 and a maximum of 5. Each facet is taken to contribute equally to the total score. The total score is, therefore, the sum of all facets scores. To differentiate between total and facet scores, the total score is presented as a score with a maximum of 100. This is done by multiplying the total score by 100 and dividing it by the count of facets [11].

Importance Items are additional items which ask respondents to indicate the importance to their overall QOL of each of the facets of QOL. The Importance Items were designed to be used to provide an estimate of the relative value of the facets to QOL. They were included in a separate form and can be administered independent from the SRPB instrument.

A total of 21 questions measuring importance were included in the importance measure. Socio-demographic data were also counted.

Results

The results presented in the current study were based on the analysis of 100 completed subjects’ forms. Males constituted 67% of the study sample. Only 10% of subjects were married and about two fifths of them (41%) were from rural areas. Subjects perceiving their current health as good or very good constituted 86% of the study sample. Less than one fifth of the study sample considered religiosity (19%), spirituality (18%) and personal believes (12%) of little or no importance (see Table 1).

Table 1: Frequency distribution of the study sample by demographic variables and the importance of their beliefs.

		N	%
1.	**Gender**		
	Female	33	33
	Male	67	67
2.	**Marital status**		
	Single	90	90
	Married	10	10
3.	**Residence**		
	Rural	41	41
	Urban	59	59
4.	**Subject opinion about current health status**		
	Bad/Very bad	3	3
	Equivocal (Not bad not good)	11	11
	Good/very good	86	86
5.	**Importance of religiosity as perceived by subject**		
	Little /No importance	19	19
	Moderately important	54	54
	Very/extremely important	27	27
6.	**Importance of spirituality as perceived by subject**		
	Little /No importance	18	18
	Moderately important	29	29
	Very/extremely important	53	53
7.	**Importance of personal believes as perceived by subject**		
	Little /No importance	12	12
	Moderately important	31	31
	Very/extremely important	57	57
	Total	**100**	**100**

As shown in Table 2, the SRPB-QOL facets concerned with wholeness and integration, meaning and purpose of life, and faith, in addition to the facet of love and compassion, showed the highest mean score among all facets (mean scores ranging between 3.5 to 3.8). More than three quarters of study subjects had a high satisfaction in these facets (good to very good). While the mean score was lowest in the facets concerned with death and dying, attachment/detachment, and life control by self or others. These facets were associated with the lowest frequency of subjects with (good/very good) as measured by them. A significant number of the students (83%) showed a high satisfaction in the SRPB quality of life as summated by the total score. No important or statistically significant differences in mean score on individual facets or total SRPB-QOL score were observed between males and females. An exception was the significantly higher mean score death and dying facet among males (2.9) compared to females (2.5). The mean score on spiritual connection, experiences of awe and wonder and spiritual strength facets was significantly higher among singles compared to married subjects. Similarly, the mean total score was significantly lower among married individuals (60.9) compared to singles (67.3). No important or statistically significant differences in mean score on individual facets or total SRPB-QOL was observed between rural and urban groups. No important or statistically significant differences in mean score on individual facets or total SRPB-QOL was observed between subjects who perceived their current health as good or very good and those with bad or equivocal opinion. The only two exceptions were the significantly higher mean score on death and dying and spiritual strength facets among those with good to very good rating of their physical health compared to those with bad to equivocal ratings.

Table 2: The relative frequency of good to very good ratings for the Arabic modified version of SRPB-QOL in different facets together with their mean scores

Facets	Good / very good quality			
	N	**%**	**Mean**	**SD**
Spiritual connection	**66**	**66**	**3.4**	**0.9**
Meaning and purpose of life	**80**	**80**	**3.6**	**0.7**
Experiences of awe and wonder	**76**	**76**	**3.4**	**0.7**
Wholeness and integration	**82**	**82**	**3.5**	**0.6**
Spiritual strength	**61**	**61**	**3.3**	**0.9**
Inner peace (serenity, harmony)	**63**	**63**	**3.3**	**0.7**
Hope and optimism	**61**	**61**	**3.3**	**0.6**
Faith	**80**	**80**	**3.8**	**0.8**
Love and dying	**78**	**78**	**3.5**	**0.7**
Death and dying	**32**	**32**	**2.8**	**0.8**
Kindness to others	**73**	**73**	**3.4**	**0.5**
Forgiveness and guilt	**59**	**59**	**3.2**	**0.5**
Acceptance of/by others	**66**	**66**	**3.4**	**0.7**
Freedom to practice beliefs	**72**	**72**	**3.3**	**0.6**
Attachment/detachment	**43**	**43**	**3**	**0.8**
Life control by self or others	**40**	**40**	**3.2**	**0.8**
Overall score	**83**	**83**	**66.7**	**9.2**

As shown in Table 3, the total SRPB-QOL scores showed no important or statistically significant association related to gender, residence and subject's opinion about their physical health while the mean score was significantly higher among singles compared to married subjects. The mean total SRPB-QOL score showed a statistically significant positive correlation to the subject's perceived importance of spirituality, religion and personal beliefs.

Table 3: The difference in mean total SRPB-QOL score for the Arabic modified instrument by selected identified variables.

	(Mean +/- SD)	**P (t-test)**
Gender		**0. 54[NS]**
Female (n=333)	(67. 5 +/- 8. 3)	
Male (n=67)	(66. 3 +/- 9. 6)	
Marital status		0. 036
Single (n=90)	(67. 3 +/- 8. 7)	
Married (n=10)	(60. 9 +/- 11. 4)	
Residence		0. 58[NS]
Rural (n=41)	(67. 3 +/- 8. 9)	
Urban (n=59)	(66. 3 +/- 9. 4)	
Subject's opinion about current health status		0. 19[NS]
Bad/Equivocal (n=14)	(63. 7 +/- 8. 7)	
Good/very good (n=86)	(67. 2 +/- 9. 2)	

Discussion

Although many studies investigated the quality of life of different population samples in the Arab world using various modifications of the original WHO-QOL instruments, to the best of our knowledge, there were very few studies of spiritual and religious aspects related to quality of life among Arab Muslim communities [17,18,19,20,21].We perceived the importance of implementing the Arabic modified WHO-SRPB instrument in Jordan where Islamic morals and rituals are highly esteemed by the majority of its population[22].

More male students responded to our study questionnaire being the majority of the population studied. The majority of the students were unmarried reflecting the expected profile of medical school students. An interesting observation was that the ratio of residents in rural and urban regions was approximate 41:59, which may be explained by the fact that most of the Jordanian students came from scattered provinces and suburban society surrounding JUST compared to the inhabitants of the capital. The majority of students reported good and very good ratings for their opinion about their health status as expected for young students. Regarding the

issue of importance of religion, spirituality and personal beliefs, there was a small percentage, 19%,18%, and 12%, who reported these issue as not important while most of the students described them as important for their wellbeing, which was consistent with our expectation about the students' attitudes of cherishing Islamic values being part of the Jordanian conservative culture where religious and spiritual roots are strong and the difference between rural and urban areas is not high[22].

This attitude was observed also in 16 different quality of life facets as the majority of the students scored good and very good for most of the facets except for the questions related to the facet of death and dying, followed by life control by self or others, and attachment/detachment facets, which may be explained by the fact that Islamic belief focuses on the aftermath of death, which may reveal an inner anxiety about death issue and may also apply to the strong belief of serenading to God almighty. For Muslims, life is sacred because Allah is the origin and destiny and death occurs by God's will, as dictated by the Holy Quran[23,24]. It seems that Jordanian culture is not different than other Arab Muslims' collectivistic societies in which an individual's behavior is determined more by norms, rules and goals of the collective rather than by personal attitudes, perceived rights and dislikes; on the other hand ,traditional values are emphasized in favor of social constancy[8].

The differences in mean scores and standard deviation of the demographic variables mentioned in the results were slight and observed in two or three out of the total 16 facets, which indicated that these variables played little role in affecting the students' view about their quality of life from spiritual, religious and personal beliefs perceptions. The total mean scores of QOL-SRPB for the used version and standard deviations in the issue of importance, were of similar figures to other facets with no significant statistical differences suggesting the hypothetical positive effect of spiritual and religious (Islamic) beliefs on the believers' perceptions about their life quality in the majority of tested spiritual facets in our studied sample[25, 26].

Conclusion

This study aims to test the Arabic modified version of WHOQOL-SRPB instrument for the first time in Jordan on a sample of educated, young Muslims who showed moderate to high levels of satisfaction with their life quality measured by the strongly held religious and spiritual beliefs. Also, it revealed no significant role of socio-demographic correlations with the measured WHOQOL-SRBP different facets which indicate the positive effect of religious and spiritual beliefs on the students' psychological well-being.

Recommendations

This small study sample was not adequate to pilot the important role of religion and spiritual beliefs on people's quality of life and, therefore, requires a much larger sample of similar socio-demographic qualities to ascertain its effect[10, 12, 27].

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الملخص

تهدف هذه الدراسة إلى التطبيق العملي لمقياس جودة الحياة اليومية العقائدي المعرب و المقنن الصادر من منظمة الصحة العالمية ,على مجموعة من طلبة كلية الطب في جامعة العلوم والتكنولوجيا , لدراسة تأثر مستوى الرضا النفسي عن صفات الحياة اليومية بعمق الجوانب الروحية والعقائدية لأول مرة في الأردن.
في شهر نيسان 2008 شارك 100 طالب وطالبة بصورة طوعية في الإجابة على أستمارة الأستبيان أخضعت النماذج للتحليل الإحصائي . أظهرت النتائج وجود معدلات وسطية وعالية القوة لأهمية التوجه العقائدي و الأيمان الديني للطلبة في تحسين مستوى الرضا النفسي عن صفات حياتهم اليومية.

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Attitude of Medical Students towardsPsychiatry in theUniversity of Jordan

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موقف طلاب الطب من الطب النفسي في الجامعة الأردنية

رضوان بني مصطفى، عوني شحيط، حنان العمري

Abstract

Objectives: To explore the attitude toward psychiatryof fifth year medical students at the University of Jordan following a four week clerkship in psychiatry.**Method:**A 160 fifth year medical students participated in this study, of which 100 (62.5%) were male students and 60 (37.5%) female students. Attitude toward psychiatry scale- 30 (ATP- 30) was used. The students completed this questionnaire in the first and the last day of the clerkship. **Results:** For both groups (males and females), there was a moderately positive attitude in the pre clerkship stage more in the female students, this became more positive after the end of the rotation in both groups , particularly in male students.**Conclusion:** The attitude of the medical students towards psychiatry are generally positive prior the psychiatric rotation ,this is comparable to attitude of students in other medical schools in our region. The four week psychiatricrotationincreased positivity in attitude which indicates that the activities that the students go through during this rotation have positive effect on their attitude toward psychiatry.

Keywords: Attitudes, psychiatry, medical students, Jordan.
Declaration of Interest: None.

Introduction

Attitude has been defined by Rezler as "an emotionally linked, learnt belief around an object or situation predisposing one to respond in some preferential manner''[1,4]

Psychiatry has been always a less attractive field of specialization to themajority of themedical students, only 3-6% of medical graduates pursue psychiatry as a career[2], recruiting enough doctors to take psychiatry as a career has been a difficult aim for health planers.[4,5]

A positive attitude toward psychiatry may make future doctors more responsive to the ever increasing psychological needs of patients in all medical specialties,[6] especially that physical presentation is very common in psychiatric disorders.[7, 8]

The increasing demand of psychiatrists and psychiatry oriented doctors cannot be overlooked due to several reasons,including the increasing interest in psychosocial issues in health,WHO reports that psychiatric disorders are among the top ten health problems causing disability in the community, the evidence of presence of association between physical and psychiatric morbidity and the emergence of liaison psychiatry as a sub-specialty.[7,9]In spite of the increasing need for mental health specialists, the supply of manpower to psychiatry is less than what psychiatric health planers want; this is mainly due to that psychiatry has a less attractive image as a medical specialty all over the world.[8]Reasons responsible for this image problem have been investigated; most reported are stigma, stress, the attitude of other medical specialists toward psychiatry.

Maximum part of attitude building toward different medical specialties takes place during medical training. Therefore, attitude of medical students are of utmost importance for what a medical specialty astudent may pursue in the future.[8, 10, 11]

A lot of research has been done to know the attitude of medical students toward psychiatry throughout the world, many of the studies in the literature show negative attitude. [12,15]However, there is considerable evidence that medical students experiencea positive change of attitudes toward psychiatry following their undergraduate psychiatric training.[6, 14,16, 20]

It has been shown that positive attitudes toward psychiatry are clearly associated with an interest in the specialty as a career[6, 13,17,18 19, 21, 23], along with the improvement of attitudes of medical students toward psychiatry there is an increase in the number of students planning to take psychiatry as a career.

Female medical students have been found to have more positive attitude toward psychiatry and to wish for a psychiatry career than their male colleagues. [22, 23]

Studies from the Middle Eastthat aimed to measure medical students' (ATP) failed to show a significant change in their attitude following their exposure to psychiatry during clerkship.[3,4,24,29]

Aim of the Study

This is the first study conducted in the faculty of medicine at the University of Jordan to explore the attitudes of fifth year medical students toward psychiatry and to explore if the four week clerkship in psychiatry has any effect on their attitudes.

The curriculum in the medical school of the University of Jordan is composed of six years on two phases, three years pre medical and three years clinical. Students are exposed to about thirty lectures (3 credit hours) in behavioral and psychosocial issues in health in the 3rd year and four weeks clerkship in psychiatry in the 5th year where students are exposed to all types of psychiatric disorders and substance use disorders, in the out-patient and in-patient setting where they clerk patients and follow them up during the rotation .

Material and methods

All fifth year medical students in the academic year 2009-2010, who attended the four week clerkship in psychiatry for 8 months, in groups ofabout 20 students, filled the ATP30questionnaire in the first day of attendance, and refilled the same questionnaire in the last day of the rotation. The response rate was 100%. The ATP scale was designed and validated to measure attitudes of Canadian medical students. This Lickert type scale measures strength of both positive and negative attitudes to various aspects of psychiatry. Respondents express their agreement or disagreement to 30 items in terms of a 5 point scale; Agree, Strongly agree, Neutral, Disagree, and Disagree strongly.

The questionnaire was translated to Arabic and has been used widely in Arabic and Islamic cultures.[3,4,13]Beside the thirty items of the questionnaire, students registered their gender and age.

t-test was used to examine the differences between the attitudes of all the students in both the pretest and posttest. Means were calculated for each item of the questionnaire.

Results

The total number of medical students who participated in this study was 160 subjects, no students declined from participation, of the group, 100 (62.5%) were male students and 60 (37.5%) female students. It was noticed that there are differences,with statistical significance, in attitudes of students before and after taking the psychiatry rotation (t=5.37, p=0.000). Moreover, the mean of the post test score was more positive when compared to the pretest's mean, (104.2 and 94.8, respectively) (Table 1).

Table 1: Comparison between means of ATP questionnaire before and after the clerkship.

	Test	Mean	Std. Deviation	Std. Error Mean	T	df	Sig. (2-tailed)
Total	Pre	94.83	14.605	1.158	-5.372	301	0.000
	Post	104.18	15.690	1.307			

In addition to that, the effect of the clerkship was studied individually on both male and female medical students, as presented in Table 2.

Table 2: Comparison between means of ATP questionnaire before and after the clerkship depending on gender.

Gender		test	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Male	total	Pre	93.76	15.884	-5.337	197	0.000
		post	105.28	14.547			
Female	total	Pre	96.60	12.125	-1.723	102	0.088
		post	101.68	17.951			

As it is noticed in the table, there is a statistically significant change in the male group (t=5.3, p=0.000), also there is an increase in the means of scores from 93.8 in the pretest to 105.3 in the post test. While in the female group, there was no significant change as in the male group (t=1.7, p=0.088), and the means of scores for the pretest was 96.6 and for the post test was 101.7. The pretest score mean for the female group was more positive when compared to the mean of the male group.

Table 3: Attitudes of medical students toward psychiatry

	Pre test		Post test	
	Mean	**Std. Deviation**	**Mean**	**Std. Deviation**
الطب النفسي غير مغري أو جذاب لأنه لا يستخدم أو يستفيدمن التدريب الطبي إلا القليل **Psychiatry is unappealing because it makes so little use of medical training**	2.73	1.291	3.44	1.193
الأطباء النفسيون يتكلمون كثيراً و يفعلون قليلا **Psychiatrists talk a lot but do very little**	2.71	1.081	3.10	1.185
المستشفيات النفسية أفضل بقليل من السجون **Psychiatric hospitals are a little more than prisons**	2.99	1.204	3.31	1.178
أحب أن أكون أو أصبح طبيباً نفسياً **I would like to be a psychiatrist**	2.06	1.162	2.31	1.154
من السهل جداً بالنسبة لي أن اقتنع بفاعلية العلاج **It is quite easy for me to accept the efficacy of psychotherapy**	3.23	1.130	3.50	1.010

بصورة عادة الناس الذين يتدربون أو يتخصصون في الطب النفسي يبتعدون عن ممارسة و المشاركة في الطب العام **On the whole, people taking up psychiatric training are running away from participating in real medicine**	2.39	1.043	2.59	1.106
الأطباء النفسيون يبدوا أنهم لا يتكلمون إلا عن الجنس **Psychiatrists seem to talk about nothing but sex**	3.52	1.119	3.93	0.913
ممارسة العلاج النفسي هو في الأساس خداع و احتيال لأنه لا توجد دلائل قوية تدل على فعاليته **The practice of psychotherapy is basically fraudulent since there is no strong evidence that it is effective**	3.60	1.164	4.24	0.863
تدريسنا الطب النفسي يزيد من فهمنا لمرضى الباطنية و الجراحة **Psychiatric teaching increases our understanding of medical and surgical patients**	3.35	1.140	4.00	1.109
معظم الطلبة يقرون بان التدريب في الطب النفسي في مرحلة ما قبل التخرج كان قيما و نافعا **The majority of students report that their psychiatric undergraduate training has been valuable**	3.25	1.100	3.75	1.156
الطب النفسي فرع محترم من فروع الطب **Psychiatry is a respected branch of medicine**	3.82	0.963	4.23	0.944
الأمراض النفسية تستحق على الأقل اهتماما مثل الاهتمام بالأمراض الجسدية **Psychiatric illness deserves at least as much attention as physical illness**	3.96	1.110	4.37	0.859
لدى الطب النفسي معلومات علمية قليلة جدا **Psychiatry has very little scientific information to go on**	3.35	1.114	3.44	1.069
معظم المرضى النفسيين تتحسن حالاتهم ضوء الطرق العلاجية المتاحة الآن **With the forms of therapy now at hand most psychiatric patients improve**	3.21	1.009	3.61	0.870
الأطباء النفسيون هم على الأقل متزنون مثل باقي الأطباء **Psychiatrists tend to be as at least as stable as the average doctor**	3.35	1.185	3.69	1.040
العلاج في الطب النفسي يجعل المرضى ينزعجون كثيرا من أعراضهم **Psychiatric treatment causes patients to worry too much about their symptoms**	2.84	0.934	3.14	1.113
ارتياح الأطباء النفسيين و رضاهم عن عملهم اقل من غيرهم في التخصصات الأخرى **Psychiatrists get less satisfaction from their work than other specialists**	2.86	1.040	2.96	1.030
من الممتع أن تحاول حل لغز سبب المرض النفسي **It is interesting to unravel the cause of mental illness**	3.68	1.274	3.94	1.117
لا يوجد إلا القليل جدا عند الأطباء النفسيين لكي يعلموه لمرضاهم **There is very little that psychiatrists can do for their patients**	2.92	1.158	3.28	1.132
المستشفيات النفسية لها دور معين في العملية العلاجية للمرضى النفسيين **Psychiatric hospitals have a specific contribution to make to the treatment of the mentally ill**	3.58	0.874	3.93	0.874
إذا سئلت عما اعتبره أكثر ثلاث تخصصات طبية مثيرة فاني استبعد الطب النفسي منها **If I were asked what I consider to be the three most exciting medical specialties, psychiatry would be excluded**	2.24	1.329	2.55	1.452
أحيانا يكون من الصعب أن تعتبر الطبيب النفسي مساو لغيره من الأطباء **At times it is hard to think psychiatrists as equal to other doctors**	2.97	1.240	3.27	1.172
في هذه الأيام يعتبر الطب النفسي الأكثرأهمية في منهاج الدراسة في كليات الطبية **These days psychiatry is the most important part of the curriculum in medical schools**	3.65	1.067	3.40	1.124
الطب النفسي غير علمي لدرجة أنالأطباء النفسيين أنفسهم لا يتفقون على ماهية العلوم التطبيقية الأساسية له **Psychiatry is so unscientific that that even psychiatrists can't agree as to what its basic applied sciences are**	3.24	1.022	3.44	1.049
في السنوات الأخيرةأصبح العلاج في الطب النفسي فعال جدا **In recent years psychiatric treatment has become quite effective**	3.25	1.049	3.65	0.888
معظم الأشياء التي تسمى حقائق في الطب النفسي هي في الحقيقة مجرد تخمينات غير واضحة **Most of the so-called facts in psychiatry are really just vague speculations**	2.91	1.030	2.96	1.003
إذا استمعنا للمرضى النفسيين هم في الحقيقة آدميون مثلهم مثل باقي الناس **If we listen to them psychiatric patients are just as human as other people**	4.08	0.914	4.23	1.056
ممارسة الطب النفسي تسمح بتكوين علاقات عملية متكافئة مع الناس **The practice of psychiatry allows the development of really rewarding relationships with people**	3.54	1.095	3.90	1.053
العمل مع المرضى النفسيين أكثر متعة من العمل مع غيرهم **Psychiatric patients are often more interesting to work with than other patients**	2.65	1.091	2.81	1.190
الطب النفسي غير منظم آو غير متبلور (واضح المعالم) و لذلك لا يمكن حقيقة تدريسه بفعالية و كفاءة **Psychiatry is so amorphous that it cannot really be taught effectively**	2.96	1.090	3.22	1.065
Total	**94.83**	**14.605**	**104.18**	**15.690**

In table 3, all the questionnaire items are presented and it was noticed from the means, that the most negatively scored items were:

1- Psychiatry is unappealing because it makes so little use of medical training.
2- Psychiatrists seem to talk about nothing but sex.
3- In recent years, psychiatric treatment has become more effective.
4- Practice of psychiatry allows for development of really rewarding relationships.
5- Psychiatrists talk a lot but do very little.

Discussion

The attitude of the 5th year medical students towards psychiatry means score prior the psychiatric rotation was (94.8)a moderately positive attitude and comparable to scores of medical students in the middle east.[25, 26]It is possible thatstudents' exposure to behavior science course in the 3rd year has helped to improve knowledge and attitudes toward psychiatry. This was indicated by Corrigan et al in their study, reporting that more exposure to patients with mental illnesses and more knowledge about psychiatry lead to less negative effect on the attitudes of medical students[11], Surprisingly, a recent study from Cairo University in 2011 reported that both 1st and 6th year medical students have negative attitudes toward psychiatry as a clerkship [13], similarly to another study from Bahrain in 2002. [3]

The results of the study showed that female students have more positive attitude toward psychiatry compared to their male colleagues, this finding is comparable to studies in the United States.[27]This positive attitude of female students toward psychiatry improved even more by the end of the rotation, male students had less positive attitude in the beginning of the rotation, but the change in the endof the rotation was greater than their female colleagues, this positive change in attitude is comparable to many studies around the world. [4,5,28,30]

It is interesting to find the five most negative scored items of the ATP were, psychiatry is unappealing, psychiatrists only talk about sex, psychiatric treatments are ineffective, practicing psychiatry improves relationships and psychiatrist talk a lot and little, reflecting similar results reported by Khan et al in 2008 in Pakistan. [8] The low scores of these items is very likely to be due the non-psychiatrists faculties negative attitudes toward psychiatry who spend more time with students through medical school time, and they covey their attitude to students.[3]

In general, several factors can affect the attitude of medical students toward psychiatry, like: The duration of exposure[11], the role of educators[21,27]and students' academic experience including: the direct contact with patients. [31]

It is obvious that the four week psychiatric rotation in the 5th year medical students has positive effect on students attitudes toward psychiatry and subsequently possibly this may encourages students to take psychiatry as a career in the future.

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ملخص

هدفت الدراسة إلى استكشاف مواقف طلاب السنة الخامسة في كلية الطب في الجامعة الأردنية نحو الطب النفسي وذلك قبل وبعد فترة التدريب في الطب النفسي، والبالغة أربعة أسابيع، ومدى تأثير التدريب على مواقفهم. تكونت عينة الدراسة من 160 طالب، كان منهم 100 طالب (62.5%) و 60 طالبة (37.5%) طالبه. حيث أجابوا على المقياس (مقياس المواقف من الطب النفسي – 30 . (ATP- 30) أظهرت النتائج أن مواقف الطلاب نحو الطب النفسي قبل بدء التدريب كان ايجابياً وكان ذلك أكثر وضوحاً عند الطالبات. وبعد نهاية التدريب زادت إيجابية المواقف لدى الجميع ولكن كانت هذه الزيادة أكثر وضوحاً عند الطلاب الذكور .هذه النتائج تؤشر أن موقف الطلاب نحو الطب النفسي، كان ايجابياً إلى حد ما وزادت هذه الإيجابية بعد فترة التدريب في الطب النفسي وهذا يؤشر إلى أن التدريب كان له تأثيراً ايجابياً على مواقف الطلاب نحو الطب النفسي.

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Psychosocial Background of Disability in Patients with Chronic Low Back Pain

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الخلفية النفس اجتماعية للإعاقة في المرضى الذين يعانون من الآلام المزمنة بأسفل الظهر

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Abstract

Objectives: To assess the impact psychosocial factors on pain intensity and disability in patients with chronic LBP. **Subjects:** This is a cross sectional descriptive study. Thirty adult patients complaining of low back pain which lasts more than six months, of mechanical origin (confirmed with radiological diagnosis), were randomly recruited from rheumatology outpatient clinic to participate in the study after approval of the ethical committee. Patients with low back pain less than six months and those having low back pain as a result of, inflammatory, infective, neoplastic, traumatic, metabolic, or congenital abnormalities were excluded from the study. All participants provided informed written consent and consented to the study findings being shared. Thirty healthy individuals matched for age, sex and body mass index, served as a control group. **Methods:** Clinical psychiatric assessment, Visual Analogue Scale, Oswestry Disability Questionnaire, anxiety and depression assessment, Survey of Pain Attitudes, Chronic Pain Coping Inventory and Multidimensional Health Locus of Control Scale were used in the evaluation. **Results:** There was a statistically significant difference between the patients and control groups regarding anxiety ($P < 0.001$), and depression ($P < 0.001$). There was highly significant positive correlation between Visual Analogue Scale and Oswestry Disability Questionnaire total and its all sub scales ($P < 0.001$). **Conclusion:** Chronic LBP patients had multiple psychosocial factors affecting their pain and disability. Psychological parameters have to be taken into account in any comprehensive concept of conservative treatment.

Key words: Disability, LBP, locus of control.
Declaration of interest: None

Introduction

Pain is a multidimensional entity; it comprises biological, psychological, and social dimensions. Psychosocial problems have been described as part of the chronic pain syndrome in addition to its sensory aspects[1]. Patients' attitudes and beliefs particularly fear avoidance beliefs and passive coping strategies are important mediator between pain, depression, and back disability [2]. Patients who had experienced or are experiencing extreme psychological distress or abuse are at increased risk for developing chronic, disabling low back pain [3].

Aim of the Work:

To assess the psychosocial effect on pain intensity and disability in patients with chronic low back pain (LBP).

Methodology:

Study type:

This is a cross sectional descriptive study.

Study population

Thirty adult patients complaining of low back pain which lasts more than six months of mechanical origin (confirmed with radiological diagnosis) were randomly recruited to this study (every 3rd patient) from rheumatology outpatient clinic at Kasr Al Aini Hospital in Cairo for the period from May 2010 to August 2010 (one day per week) following ethical committee approval. Patients with low back pain less than six months and those having low back pain as a result of non-mechanical origin such as: inflammatory, infective, neoplastic, traumatic, metabolic, or congenital abnormalities were excluded from the study. Informed written consent was obtained from all participants.

Control:

Thirty healthy individuals matched for age, sex and body mass index (BMI) served as the control group forthis study.

Study tools

All patients were subjected to the following:

A-Clinical psychiatric assessment: Participants were interviewed guided by a psychiatric history taking sheet.

B- Special Tests:

I. Pain intensity measurement: Visual Analogue Scale (VAS) [4]: This scale consists of a 10 cm line anchored at one end by a label such as (no pain) and at the other end (worst possible pain) for subjective assessment of pain intensity.

II. Disability Assessment: Oswestry Disability Questionnaire [5]: It consists of 10 items: Pain intensity, Personal care, Lifting, Walking, Sitting, Standing, Sleeping, Social Life, Traveling and Changing Degree of Pain. Each item is scored from 0 to 5.

Both patients and control were subjected to the following:

C-Psychological measures:

1. Anxiety and depression assessment [6]: It consists of two main sub-items: a) Anxiety and b) Depression. Each of them consists of 30 statements, they are scored as 1 or 0 according to individual agreement or disagreement it was designed by Shaheen and Rakhawi, (1972).
2. Beliefs and Attitudes: Survey of Pain Attitudes (SOPA) [7]: It measures the beliefs of chronic pain patients which influence the person's

ability to adjust to pain. Believes related to pain measured by the survey include: control, disability, harm, emotion, medication, solicitude, and medical cure.

3. Coping strategies: Chronic Pain Coping Inventory (CPCI) 8: It assesses [8] pain coping dimensions that include: guarding, resting, asking for assistance, relaxation, task persistence, exercise, stretch, seeking social Support, and coping self-statement.
4. Locus of Control: Multidimensional Health Locus of Control Scale (MHLC) [9]: This test measures the place in which patients believe the control over their pain resides. It includes 18 statements divided according to the following subscales: internal locus of control and external locus of control: chance and powerful others.

All scales were translated and back translated into Arabic.

Data Analysis

The data were entered on an IBM compatible computer using the statistical package SPSS version 11. The mean and standard deviation was used as a suitable statistical parameter. Frequency tables using percentages were used to describe the qualitative data. The following tests of significance were used for data analysis: Chi Square Test, Student t-test, one way ANOVA and Pearson Correlation Coefficient. The level of significance was chosen at 5% where a P value of 0.05 or less obtained was considered to be significant [10]. Ethical consideration: Participation was entirely voluntary. All participants were assured confidentiality. The study was approved by a research ethics committee.

Results

The present study targeted thirty adult patients, suffering from mechanical low-back pain for more than six months. Seventeen patients (56.6%) were suffering from disc lesions, 6 patients (20%) were suffering from spondylosis, while 5 patients (16.7%) were suffering from spondylolisthesis, and 2 patients (6.7%) were suffering from spinal canal stenosis. The age of the patients group ranged from 18 – 76 years, with a mean of 39.7 ± 13.32 years. They were seven males (23.3%) and 23 females (76.7%). Their body mass index (BMI) had a mean of 30.33 ± 4.99; three patients (10%) had normal weight, 14 patients (46.7%) were overweight while 13 patients (43.3%) were obese. The age of the control group ranged from 25-51 years, with a mean of 39.9± 7.18 years. They were 6 males (20%) and 24 females (80%). Their BMI had a mean of 29.41± 2.59; six (20%) individuals had normal weight, 21 (70%) individuals were overweight, and 3 (10%) individuals were obese. In the patient group, the disease duration ranged from 8 months – 20 years with a mean of 4.86 ± 4.10 years. [14] (46.7%) patients were housewives, while 16 (53.3%) patients were working: 7 (23.3%) as office workers, 5 (16.7%) as manual workers and 4 (13.3%) with jobs that required prolonged standing. The mean of VAS among the patients group was 5.53 ± 2.1. The majority of the patients group had moderate or severe disability (70%); no disability was seen in 10%,20% had mild disability, 40% moderate disability and 30% severe disability. The highest means disability score among the patients group were for Lifting (2.26 ± 1.34), Walking (2.26 ± 1.25) and Standing (2.33±1.12) (Table1). The majority of the patients group had evident anxiety (70%) and evident depression (53.3%). There was a statistically significant difference between the patients and control groups regarding anxiety ($P < 0.001$), and depression ($P < 0.001$) (Table3). Patients used more external LOC compared to control group and the difference was statistically non-significant (Table3). There was a highly significant positive correlation between Visual Analogue Scale and Oswestry Disability Questionnaire total and its all sub scales ($P < 0.001$) (Table 4). There were statistically significant differences regarding personal control, disability, harm and emotion sub-items between the patient and control groups (Table5). There was positive significant correlation with emotion and solicitude. Also, there was positive highly significant correlation with disability and harm and there were positive significant correlation with emotion, and a positive highly significant correlation with disability, harm and solicitude (Table 6). Most of the patients were using the negative items, as; guarding, resting and asking for assistance, 18 (60%) patients used guarding, 22 (73.3%) patients used resting and 20 (66.7%) of patients used asking for assistance (Table1). A significant positive correlation was found with guarding and resting, and with asking for assistance and seeking social support. While correlating total Oswestry Disability Questionnaire with Chronic Pain Coping Inventory revealed a highly significant positive correlation with guarding, resting, asking for assistance and seeking social support (Table6). There was a negative significant correlation of pain intensity by VAS with internal locus of control. While a highly negative significant correlation of total Disability Oswestry Questionnaire with internal locus of control, a positive significant correlation with external powerful others and no significant correlation with external chance (Table6).

Table (1): Oswestry Disability Questionnaire and coping strategies by Chronic Pain Coping Inventory among the patients group

Oswestry Disability Questionnaire	Mean ±SD	CPCI	Mean ±SD
Total	19.9 ± 8.6	Guarding	3.9 ± 2.1
Pain intensity	2.1 ± 0.8	Resting	3.8 ± 1.7
Personal care	1.6 ± 0.99	Asking for assistance	3.9 ± 1.7
Lifting	2.3 ± 1.3	Relaxation	1.8 ± 1.5
Walking	2.3 ± 1.3	Task persistence	4.4 ± 1.8
Sitting	2.03 ± 1.03	Exercise/ Stretch	3.8 ± 2.1
Standing	2.3 ± 1.1	Coping Self Statements	3.6 ± 1.5
Sleeping	1.6 ± 0.9	Seeking Social Support	3.6 ± 1.9
Social life	2.1 ± 1.2		
Traveling	1.7 ± 1.2		
Changing degree of pain	1.9 ± 1.1		

Table (2): Anxiety and Depression Assessment in patients and control groups

	Patients		Control		
	No	Mean + SD	No	Mean + SD	**P value**
Anxiety	21 (70%)	21.4 ± 6.1	0 (0%)	14.2 ± 2.9	<0.001**
Depression	16 (53.3%)	19.9 ± 6.4	3 (10%)	14.3 ± 5.2	<0.001**

Table (3): Multidimensional Health Locus of Control Scale of patients versus controls

Items	Patients	Controls	Chi	P
Internal Locus of control	8	15	4.7	0.096
External chance	9	9		
External powerful Others	13	6		

Table (4): Correlation between pain intensity by Visual Analogue Scale "VAS" with Oswestry Disability Questionnaire

VAS	R	P
Total Oswestry	0.909	<0.001 **
Pain intensity	0.629	<0.001 **
Personal care	0.754	<0.001 **
Lifting	0.802	<0.001**
Walking	0.725	<0.001 **
Sitting	0.723	<0.001 **
Standing	0.610	<0.001 **
Sleep	0.600	<0.001 **
Social life	0.694	<0.001 **
Travel	0.808	<0.001**
Changing degree of pain	0.722	<0.001 **

Table (5): Beliefs and Attitudes: Survey of Pain Attitudes (SOPA)

	Patients	**Control**		
	Mean ± SD	Mean ± SD	**T**	**P**
Control	20.4 ±11.5	22.9± 3.7	1.1	**0.3**
Disability	26.6 ±7.98	0.3 ± 0.4	17.9	**<0.001****
Harm	21.9 ± 5.98	13 ± 2	7.7	**<0.001****
Emotion	18.7 ± 7.24	3.9 ± 2.9	10.4	**<0.001****

Medication	13.9 ± 6.07	14.7± 2.4	0.7	**0.5**
Solicitude	14.6 ± 6.02	16.6± 3.7	1.6	**0.1**
Medical Cure	**17.9 ± 9.3**	**21 ± 5.1**	**1.8**	**0.07**

** Highly significant P < 0.001

Table (6): Correlation between Visual Analogue Scale and Total Disability with belief and attitude Chronic Pain Coping Inventory, and locus of control

	VAS		Oswestry Disability Total	
Belief and Attitude	**R**	**P**	**R**	**P**
Control	-0.215	0.253	-0.27	0.16
Disability	0.820	<0.001**	0.913	<0.001**
Harm	0.84	<0.001**	0.88	<0.001**
Emotion	0.45	0.013*	0.44	0.016*
Solicitude	0.48	0.008*	0.57	<0.001**
Locus of control				
Internal locus of control	-0.43	0.02*	-0.6	<0.001**
External chance	0.16	0.41	0.1	0.6
External powerful others	0.23	0.22	0.38	0.04*
Coping strategies				
Guarding	0.7	<0.001**	0.67	<0.001**
Resting	0.58	<0.001**	0.71	<0.001**
Ask for assistance	0.53	0.003*	0.67	<0.001**
Seeking Social Support	0.49	0.006*	0.62	<0.001**

* Significant P < 0.05
** Highly significant P < 0.001

Discussion

The pain in the patient group was found to be of moderate intensity by VAS. Billis et al., [11] demonstrated that the worst pain score was greater than median. While Frost et al., [12] found that LBP patients had mild to moderate low back pain score. Most of our patients had moderate or severe disability and it is consistent with the previous results that showed that disability scores were greater than median and most of patients were moderately disabled and the highest disability scores in standing, lifting and walking [13]. A statistically significant number of LBP patients were more affected by anxiety and depression than the control and these results were matched with the work of Wasan et al., [14] who stated that the prevalence rates of anxiety and depression in LBP patients were significantly greater than rates in the general population. This could be explained by the fact that chronic LBP patients are unable to express their fear or frustration and, instead, express more by the body language. Also LBP itself by its handicapping nature may cause anxiety and depression. The pressure of such depression and anxiety symptoms may aggravate already existing pain and increase its chronicity. Low back pain patients showed statistically significant difference regarding disability, harm, and emotion, which were related to increase physical disability and most of them were not adjusting well with pain, as shown by increasing the score of disability, harm, emotion and solicitude, while decreasing score of control, and medical cure. Pain intensity was significantly positively correlated with disability, harm, emotion and solicitude. Also, disability was significantly positively correlated with harm, solicitude and emotion, these findings were in agreement with Sattelmayer et al., [15] who found that the beliefs that one is disabled and that activity should be avoided because pain signifies damage were associated positively with physical disability. In addition, patient's attitudes and beliefs play an important role in the development of chronic LBP disability, and that primary prevention by giving advice about back pain improved beliefs and attitudes about back pain, and the number of patients' compensation claims for back pain decreased [3]. Also, unhelpful pain beliefs of patients with chronic LBP may limit physical performance and assessment and a strong relationship between changing pain beliefs by education sessions lead to change in physical performance [16].

There was positive correlation between pain intensity, disability and coping strategies especially guarding, resting, asking for assistance and seeking social support. It was consistent with research that found an increased rate of passive avoidant coping responses among patients especially when there are stressful life events [17]. On the contrary, it was found that, the most common coping behaviors were, reporting pain, using pain medications, and coping self-statements. Patients' self-efficacy to cope with pain was inversely correlated with pain

intensity. Self-efficacy was positively correlated with perseverance of coping effort [18].

Patients scored higher in external locus of control and pain intensity and disability were significantly negatively associated with the internal locus of control. Yet, external locus of control is associated with more disability. In line with our results, it was found that chronic LBP patients with more external beliefs reported more severe LBP. And that, irrespective of the degree of LBP, use of more active behavioral coping strategies were more frequent in subjects who had strong beliefs in internal control over back pain [19]. Also, patients' perceptions of personal control over pain increased from pre-treatment to post-treatment and patients' perceptions of external control over pain, such as, fate or powerful others, decreased from pre-treatment to post-treatment[20]. Our patients are sharing the same cultural beliefs that GOD, fate, chance, luck and other external forces are key regulators of their life.

We can conclude from this study that chronic LBP patients had multiple psychosocial factors affecting their pain and disability. Therefore, in patients with low back pain, psychological parameters have to be taken into account in any comprehensive concept of conservative treatment.

Recommendations

Modification of occupational risk factors, and dealing with job dissatisfactions will limit disability in chronic LBP patients. Modification of patients' beliefs about the nature and treatment of pain will limit the degree and severity of LBP. Early detection of any psychological impairment is emphasized for treatment of chronic LBP patients.

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الملخص

الهدف: تهدف هذه الدراسة إلى تقييم تأثير العوامل النفسية والاجتماعية على شدة الآلام و العجز بين المرضى الذين يعانون من آلام المزمنة بأسفل الظهر.الطريقة: قد تم تقسيم العينة إلى مجموعتين: المجموعة الأولى وتشمل ثلاثون مريضا من المرضى البالغين الذين يشكون من آلام الظهر المستمرة لأكثر من 6 أشهر من أصل ميكانيكي (مع تأكيد التشخيص الإشعاعي) وقد تم اختيارهم بشكل عشوائي من العيادة الخارجية لإمراض الروماتيزم والمجموعة الثانية وتشمل ثلاثين من الأشخاص الأصحاء المطابقين في الجنس والعمر ومؤشر كتلة الجسم، ويعملون كمجموعة ضابطة في الدراسة. وقد تم الحصول على موافقة لجنة الأخلاق العلمية، كما تم الحصول على موافقة خطية مستنيرة من المشاركين في الدراسة. وقد استخدمت الاختبارات والفحوصات التالية على جميع أفراد المجموعتين: التقييم النفسي الإكلينيكى ، مقياس التماثلية البصرية ،استبيان الإعاقة (استبيان أوسويستري للإعاقة) ، وتقييم القلق والاكتئاب ، ومسح لمواقف الألم ، ومقياس استراتيجيات الألم المزمن، ومقياس موضع التحكم. **النتائج:** كان هناك اختلاف كبير ذو دلالة إحصائية بين المرضى والمجموعة الضابطة بشأن القلق ($P<0.001$) ، والاكتئاب ($P<0.001$).كما وجد هناك علاقة إيجابية هامة للغاية بين مقياس التماثلية البصرية و استبيان الإعاقة (استبيان أوسويستري للإعاقة) ($P<0.001$). **الخلاصة:** وجد أن العوامل النفسية والاجتماعية تؤثر على العديد من الآلام والعجز بين المرضى الذين يعانون من الآلام المزمنة بأسفل الظهر، كما يجب أن تأخذ الأبعاد النفسية في المفهوم الشامل للتعامل مع هؤلاء المرضى.

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Neuro-chemical Distortions among Patients with Leukaemia Receiving Chemotherapy

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التشوهات العصبية الكيميائية لمرضى اللوكيميا المعالجين بالعلاج الكيميائي

هاني حامد، نهى عبد الشافي، راندا قداح

Abstract

Objective: To detect the relationships between neurocognitive deficits and metabolite ratios of specific brain regions using magnetic resonance spectroscopy (MRS). **Method:** Observational analytical case control study which includes thirty patients with diagnosis of leukemia receiving chemotherapy "Cases" and another group of thirty patients with diagnosis of leukemia not receiving chemotherapy at all as "Controls". All participants were subjected to a semi structured interview, Wechsler Intelligence Scale for Children (WISC) and Magnetic Resonance Spectroscopy (MRS). **Results:** The means of Wechsler Intelligence Scale for Children (WISC) Total, Performance and Verbal, among the patient group were lower than the control group (P<0.001). There was statistical significant difference between the two groups regarding Magnetic Resonance Spectroscopy (MRS) in different brain areas. The means of Frontal Cho/NAA, Frontal Cho/Cr, Temporal Cho/NAA, Temporal Cho/Cr, Parieto-Occipital Cho/NAA, Parieto-Occipital Cho/Cr, Basal ganglia Cho/NAA and Basal ganglia Cho/Cr among the patient group were higher than the control group and the means of Temporal NAA/Cr and Parieto-Occipital NAA/Cr among the patient group were lower than the control group. **Conclusion:** MR spectroscopy is a more sensitive method demonstrating metabolite changes in the brain after chemotherapy treatment of leukemic children in the absence of structural white matter abnormalities at MR imaging. A significant cognitive function difference was detected in leukemic treated cases compared to controls and correlated to the metabolic brain changes detected by MRS.

Key Wards: Neurocognitive Deficits, Chemotherapy, Leukemia.
Declaration of interest: None

Introduction

Acute Lymphoblastic Leukemia (ALL) is the most common childhood malignancy, accounting for about 75% of all leukemias and 25% of childhood cancers, with an incidence of 3.9/100.000 and a peak incidence at the age of 3–4 years [1]. This is a disease of the lymphoid cells, where malignant white blood cells migrate via the circulatory system to virtually all organ systems, including the central nervous system, where the blood-brain barrier creates a sanctuary for cancer cells. Current treatment commonly lasts for 24–30 months. All protocols include central nervous system prophylactic treatment to prevent central nervous system relapse [2].

Recent chemotherapy only protocols often employ simultaneous administration of different groups of drugs, commonly including nucleoside analogs, glucocorticoids and antifolates, all of which are suspected of causing delayed neurotoxicity [3].

As the number of childhood cancer survivors grows, more attention on the identification and management of late effects among children and adolescents who had received prophylactic chemotherapy, such as neurocognitive decline, is needed [4].

The cognitive functioning in long-term survivors of childhood treated by chemotherapy protocols has been evaluated by comparison to different groups treated with cranial radiation therapy (CRT), and reported fewer and only subtle cognitive deficits in the chemotherapy group[5].

The potentially deleterious effects of conventional cancer therapies (e.g. chemotherapy and radiotherapy) on cognitive functioning are well documented. However, there remains a great need to define more effectively the long-term neurocognitive sequelae of cancer treatment and the impact that these sequelae will have on the quality of life. To date, few systematic efforts have been made to define the changes in cognitive outcomes among recipients of these treatment alternatives. In addition, if the toxic effects of cancer treatment do adversely compromise cognitive domains, it is unknown to what extent these potentially persistent effects will influence adherence to follow-up care [6]. Neurotoxicity (NT) is a significant treatment complication for many cancer patients, but little is known about its etiology and early objective detection is difficult [7]. Cognitive deficits documented by neuropsychological (NP) testing involve attention and concentration, processing speed, memory, general intelligence, language, and academic achievement [8]. Risk factors identified from studies of patients with acute lymphoblastic leukemia and brain tumors include young age at treatment, dose and type of treatment, particularly high-dose chemotherapy [9].

Structural changes, including subacute leukoencephalopathy, mineralizing microangiopathy, and cortical atrophy, have been observed on CT or MRI during and after treatment [10].

Proton magnetic resonance spectroscopy (MRS) is a noninvasive technique used to assess regional biochemical activity in vivo and can detect changes in the brain in the absence of detectable abnormalities on standard MRI [11].

Principal metabolites in the brain identified using MRS techniques with long echo times (TE; 135−270ms) include N-acetyl aspartate (NAA), free choline and choline containing compounds including phosphocholine and glycerol phosphocholine (Cho), and creatine and phosphocreatine (Cr). Proton magnetic resonance spectroscopic imaging (1H-MRSI) is a multi-voxel, multi-slice technique that allows simultaneous acquisition of metabolite data from multiple areas of the brain [12].

The hypothesis is that MRS is a sensitive tool capable of showing the significant positive correlation between the reduction of neurocognitive deficits, in leukemic patients receiving chemotherapy, and brain metabolites distortions in specific brain regions.

Aim of the Work

The objectives of the present study were the following:

1- To study in depth the neurotoxic effects of chemotherapy on the cognitive functions.
2- To explore relationships between the neurocognitive functions and metabolite ratios of specific brain regions using magnetic resonance spectroscopy MRS.

Subjects and Methods

Subjects: Observational analytical case control study which includes thirty patients with diagnosis of leukemia received systemic chemotherapy “Cases” and another group of thirty patients with diagnosis of leukemia did not receive chemotherapy at all as “Controls”. Patients in this study were selected from the outpatient pediatric clinic at the National Cancer Institute in the period from May 2009 to March 2010. Research ethical committee clearance was obtained and informed consent was obtained from all patients or their legal guardians.

Inclusion criteria

Both sexes.

Age between 6-12 years.

Acceptance to participate this study, by obtaining an informed consent from the legal guardian and child assent to participate.

Exclusion criteria

Refusal to participate this study by the legal guardian or child refusal to participate.

Current psychiatric disorder and other chronic medical condition.

Left handed patients.

Methods

Subjects of the study were submitted to the following:

I- Semi Structured Interview:

Patients and controls were interviewed guided by a psychiatric history taking sheet designed at the Department of Psychiatry, BeniSuef University. It includes detailed developmental, family, educational and past history. Also it includes a mental state examination.

II – Wechsler Intelligence Scale for Children (WISC) (Ismaeil and meleka) [13]: It is one of the best-standardized and most widely used intelligence tests in clinical practice today. Designed in 1939, the original Wechsler Adult intelligence Scale WAIS has gone through several revisions. This scale can be used for children ages 5 through 15 years.

This Scale consists of Verbal subtests, which include:

- Comprehension.
- Arithmetic.
- Similarities.
- Vocabulary.
- Digit span.

And also of Performance subtests, which include:

- Picture Completion.
- Block Design.
- Picture arrangement.
- Object Assembly.
- Digit Symbol.

The raw score obtained by examined student for each subtest was transformed to a standard score according to tables of standardization. Then the Total IQ, Verbal IQ and Performance IQ can be determined according to the use of specific tables.

In this study, we used Wechsler Intelligence Scale for Children (short form). This was supported by Donders[14] who concluded that this short form of Wechsler Intelligence Scale for Children–III (eight subtests) is a valid substitute for the complete version under most clinical circumstances and allowing the practitioner to expand on interview, history or more specific

neuropsychological tests without adding financial or time burdens to the evaluation.

All scales were applied in the Arabic language.

III- Magnetic Resonance Spectroscopy (MRS) is a noninvasive technique used to assess regional biochemical activity. MRS was done for all children in both groups. Principal metabolites in the brain identified using MRS techniques with long echo times (TE; 135−270ms) include N-acetyl aspartate (NAA), free choline and choline containing compounds including phosphocholine and glycerol phosphocholine (Cho), and creatine and phosphocreatine (Cr). Proton magnetic resonance spectroscopic imaging (1H-MRSI) is a multi-voxel, multi-slice technique that allows simultaneous acquisition of metabolite data from multiple areas of the brain. Four different brain areas of interest (ROIs) including Frontal area, temporal area, Parioto- occipital area, and Basal Ganglia in the left hemisphere (dominant one) were selected in this study. These were chosen based on their involvement in the selected domains of cognitive function. MRS was reviewed by a radiologist (MD radiologist).

N.B.: Wechsler Intelligence Scale for Children (WISC) was done within one week of the imaging.

Statistical Analysis

Statistical analysis was performed on IBM/PC using GraphPadInstat version 3 for Windows, GraphPad Software, San Diego, California, USA, www.graphpad.com. Both statistical analysis and tabulation were done. The Student's unpaired "t" test was used to detect statistical significance. The chi-square "X2" test was used for the analysis of categorical data. The Pearson product moment correlation coefficient "r" was calculated between the different investigated parameters [15]. The level of significance was set at $p < 0.05$.

Results

I- Sociodemographic and clinical Data:

1- Age, gender, and education:

The mean age of children among the patient and control groups was 9.47 ± 1.72, 9.90± 1.47 respectively. There was no statistical significant difference between patients among the two groups regarding the age (P=.298). There was no statistical significant difference between the two groups regarding the gender (P= 0.602).The majority of the patient group were females (60%), while 53.3% of the control group were females. There was no statistical significant difference between the two groups regarding the educational level (P= 0.552). The majority of the patient group was in the 3rd grade primary school (30%). While, the majority of the control group were in the 4th grade primary school (26.7%).

II- Psychometric Data:

1-Wechsler Intelligence Scale for Children (WISC)

Table 1: Wechsler Intelligence Scale for Children in both Groups

		Mean	Std. Deviation	P
WISC, Total	**Patients**	88.57	1.57	<0.001
	Controls	91.73	1.89	
WISC, Performance	**Patients**	89.27	1.78	<0.001
	Controls	92.03	2.09	
WISC, Verbal	**Patients**	89.77	1.43	<0.001
	Controls	93.20	2.06	
Comprehension	**Patients**	6.30	0.47	<0.001
	Controls	7.23	0.43	
Arithmetic	**Patients**	6.77	0.57	<0.001
	Controls	7.53	0.73	
Similarities	**Patients**	8.53	1.55	0.132
	Controls	8.07	0.64	
Digit Span	**Patients**	9.13	1.01	0.305
	Controls	8.90	0.71	
Picture Completion	**Patients**	6.77	0.43	<0.001
	Controls	7.27	0.52	
Block Design	**Patients**	6.77	0.57	<0.001
	Controls	7.70	0.70	
Picture Arrangement	**Patients**	7.30	0.79	0.011
	Controls	7.77	0.57	
Object Assembly	**Patients**	7.47	0.82	0.161
	Controls	7.77	0.82	
Digit Symbols	**Patients**	8.93	0.98	1.00
	Controls	8.93	0.91	

III- Radiological findings:

1-Magnetic Resonance Spectroscopy (MRS)

Table 2: Magnetic Resonance Spectroscopy in both Groups

		Mean	Std. Deviation	P
Frontal Cho/NAA	**Patients**	0.54	0.97	0.033
	Controls	0.50	0.06	
Frontal NAA/Cr	**Patients**	1.97	0.29	0.342
	Controls	2.03	0.15	
Frontal Cho/Cr	**Patients**	1.08	0.12	0.020
	Controls	0.99	0.18	
Temporal Cho/NAA	**Patients**	0.95	0.14	<0.001
	Controls	0.71	0.12	
Temporal NAA/Cr	**Patients**	1.54	0.14	0.016
	Controls	1.69	0.29	
Temporal Cho/Cr	**Patients**	1.66	0.50	<0.001
	Controls	1.16	0.24	
Parieto-Occipital Cho/NAA	**Patients**	1.33	1.24	0.002
	Controls	0.66	0.03	
Parieto-Occipital NAA/Cr	**Patients**	1.84	0.15	0.001
	Controls	2.12	0.43	
Parieto-Occipital Cho/Cr	**Patients**	1.08	0.03	<0.001
	Controls	0.72	0.12	
Basal ganglia Cho/NAA	**Patients**	0.67	0.11	0.013
	Controls	0.59	0.13	
Basal ganglia NAA/Cr	**Patients**	1.35	0.35	0.984
	Controls	1.35	0.27	
Basal ganglia Cho/Cr	**Patients**	0.89	0.12	<0.001
	Controls	0.77	0.05	

IV- Correlation Studies:

Table 3: Correlation between Digit Symbols Subtest and Frontal NAA/Cr, Basal ganglia Cho/NAA and Basal ganglia NAA/Cr among Children within the Patient Group

		Frontal NAA/Cr	Basal ganglia Cho/NAA	Basal ganglia NAA/Cr
Digit Symbols Subtest	R	0.397	-0.045	**0.412**
	P	0.039	0.019	**0.024**
	N	**30**	**30**	**30**

Discussion

The members from both groups were matched regarding age, gender, and education. There was statistical significant difference between the two groups regarding the Wechsler Intelligence Scale for Children (WISC) Total, Performance and Verbal ($P < 0.001$) (table 1). The means of Wechsler Intelligence Scale for Children (WISC) Total, Performance and Verbal among the patient group were lower than the control group. This was consistent with Robinson et al., [16] who found significant long-term neurocognitive deficits experienced by some survivors, particularly in the areas of memory and executive functioning.

Also, Krappmann , et al., [17] who found a statistically significant decline of intellectual function after chemotherapy for younger patients and girls (IQ scores still within normative data range). This was in line with Lofstad et al., [18] who found also long-term sequelae in global cognitive functions which indicate that verbal function, processing speed, attention and complex visual-spatial problem solving may be affected in the chemotherapy only group. Hill et al., [19] reported that the lower scores on the WISC reflect impairment of both global and/or specific neurocognitive abilities and they reported also significant impairment in Verbal IQ, Performance IQ among children treated with chemotherapy.

However, The means of Patients among both groups were still near the normal ranges regarding the Wechsler Intelligence Scale for Children (WISC) Total, Performance and verbal (table 1). This was in line with Copeland et al., [20] who reported that the effects of

chemotherapy on the neurocognitive functions appear to be slight. Patients who received intravenous (IV) methotrexate declined slightly on perceptual-motor skills and academic achievement tests but were still well within the normal range.

The means of Wechsler Intelligence Scale for Comprehension Subtest, Arithmetic Subtest, Picture Completion Subtest and Block Design Subtest among the patient group were lower than the control group ($P < 0.001$) (table 1). Also, the means of Picture Arrangement Subtest among the patient group were lower than the control group ($P=0.011$). Lofstad et al., [18] reported group differences in the Wechsler Intelligence Scale for Children-Third Edition (WISC-III) subtest scores were most striking with regards to Comprehension, and Arithmetic ($p < 0.001$) among children with ALL treated with chemotherapy alone. Long-term sequelae in global cognitive functions, and indicate that verbal function, processing speed, attention, complex visual-spatial, and problem solving were affected in the chemotherapy only group. Also, Kingma et al.,[21] stated that the lower scores on the WISC as documented in the literature might reflect impairment of both global and/or specific neurocognitive abilities among adolescents treated with chemotherapy. Studies that focused on outcomes for specific cognitive functions have reported significant impairment in Verbal IQ, Performance IQ, attention, information processing, executive functions, psychomotor skills, as well as verbal visual memory and learning difficulties, and specific impairment in non-verbal function [22].

Buizer et al., [23] found that there is an evidence of subtle long-term neurocognitive deficits survivors of childhood with ALL after treatment with chemotherapy only. These involve mainly processes of attention and of executive functioning, while global intellectual function is relatively preserved. Also, Espy et al., [24] and Buizer et al., [23] stated that that the most common neuropsychological effects of chemotherapy alone involve deficits in visual processing, visual-motor functioning, and attention and executive functioning.

Difficulties in visual processing affect how a child makes sense out of visual information (e.g., being shown something without verbal explanation, understanding maps, visual-spatial skills). Visual-motor functioning involves skills like legibility of handwriting, and the ability to copy drawings. Attention refers to a child's ability to maintain concentration or focus and ignore distractions, and can affect functioning in almost all settings. Executive functioning refers to the ability to organize, plan, hold information in mind and manipulate it (e.g., mental math) [26].

Hill et al., [19] reported significant impairment in attention, information processing, executive functions, psychomotor skills, as well as verbal visual memory and learning difficulties among children treated with chemotherapy [25,27]. Memory dysfunctions have been the most frequent specific effects in survivors of ALL treated with chemotherapy, also attention deficits, slowness of processing and visuomotor difficulties have been reported [28]. Gross-King et al., [29] reported that neurocognitive deficits among children treated for Cancer can be assed using successfully 3 subscales of the Wechsler Intelligence Scale for Children—III (WISC-III), which measure working verbal memory (Digit Span), mental processing speed (Symbol Search), and psychomotor speed (Coding).

The relationship between metabolic profiles in proton MRS and cognitive functions has not been well-characterized [30].

This study describes relationships between cognitive function and multi-voxel MRS metabolic data in children with leukemia. Metabolite ratios (Cho/Cr, Cho/NAA, and NAA/Cr) were compared in certain brain areas that are known to be involved in selected domains of neurocognitive functions.

There was statistical significant difference between the two groups regarding Magnetic Resonance Spectroscopy (MRS) in different brain areas (table 2). The means of Frontal Cho/NAA and Frontal Cho/Cr among the patient group were higher than the control group ($P=0.033$, $P= 0.020$ respectively). This was consistent with Magalhaes et al., [31] who stated that Increased Cho is associated with membrane turnover and reflects cellular density. There was a trend for ALL survivors to perform more poorly on a working memory task in terms of overall accuracy. Additionally, survivors displayed significantly greater activation in areas underlying working memory (dorsolateral and ventrolateral prefrontal cortex) [16].

The means of Temporal Cho/NAA, and Temporal Cho/Cr among the patient group were higher than the control group ($P<0.001$). Increased levels of choline or lipids, both reflections of membrane turnover or demyelination, are related to lower IQ scores and overall cognitive deficits [32]. The mean of Temporal NAA/Cr among the patient group was lower than the control group ($P=0.016$). This was in line with Cecil, and Lenkinski[33] who stated that NAA is reduced in pathological states with neuronal loss or injury such as brain tumor, head trauma, and infection. NAA, an amino acid derivative found predominantly in neurons, is considered a marker of neuronal integrity and implicated in cognitive function [34].

The means of Parieto-Occipital Cho/NAA and Parieto-Occipital Cho/Cr among the patient group were higher than the control group (P=0.002, P<0.001 respectively). This was in line with Zaroff et al., [35] who claimed that impaired cognitive function, memory and executive function is associated with increased levels of choline and prominent lipid peaks have been observed and associated with active demyelination and white matter abnormalities. The means of Parieto-Occipital NAA/Cr among the patient group were lower than the control group (P= 0.001). Decreased NAA, indicating either neuronal loss or dysfunction, is associated with poor cognitive outcome [32].

The means of Basal ganglia Cho/NAA and Basal ganglia Cho/Cr among the patient group were higher than the control group (P=0.013, P<0.001 respectively). This was in line with Nassef et al., [36] who found that cognitive deficit is associated with elevation in Ch/Cr ratio in the basal ganglia which can be explained by the effect of chemotherapy on cell membrane degradation. Increased choline levels have been associated with an increased number of cells, a greater rate of cell membrane synthesis, and increased cell turnover, which are processes associated with tumor cell division. A decrease in IQ, new learning disabilities, difficulty with concentration and memory, and personality changes could be sequelae among children undergoing chemotherapy for acute lymphocytic leukemia [37].

There was a significant positive correlation between Digit Symbols Subtest and Frontal NAA/Cr (P = 0.039) and Basal ganglia NAA/Cr (P = 0.024) (table 3). Also, there was a significant negative correlation between Digit Symbols Subtest and Basal ganglia Cho/NAA (P = 0.019). This means that the higher digit Symbol Subtest, which measure visual processing and short term memory[38], is associated with increased NAA and decreased choline. Buizer et al., [23] reported that chemotherapy-induced central neurotoxicity in childhood ALL treatment is associated with higher order visuomotor control deficits. Decrease in NAA levels on 1H-NMRSand increased choline levels have been associated with an increased number of cells, a greater rate of cell membrane synthesis, and increased cell turnover, which are processes associated with impaired cognitive function, memory and executive function [35].

So, MR spectroscopy was able to detect metabolite changes in the absence of structural white matter changes in leukemia survivors. These changes were thought to be the effect of intravenous high dose methotrexate [39]. Saykin et al.,[40] outline three nonexclusive mechanisms for white matter damage: ‘‘(1) direct neurotoxic injury to the cerebral parenchyma, including the microglia, oligodendrocytes, and neuronal axons, producing demyelination or altered water content; (2) secondary inflammatory response, an immunologic mechanism including allergic hypersensitivity and autoimmune vasculitis; and (3) microvascular injury leading to obstruction of small and medium sized blood vessels, spontaneous thrombosis, ischemia/infection, and parenchymal necrosis.’’

A noninvasive method for early detection of structural changes that correlates with neuropsychological functions would be clinically useful in the management of these patients. Magnetic resonance imaging is a relatively recent clinical advance that has proven useful in the evaluation of neoplasms [41].

Future research should strive to refine Magnetic Resonance Spectroscopy in combination with batteries for neurocognitive assessment to evaluate outcome after specific treatment protocols for better understanding the mechanisms behind neurocognitive changes.

Conclusion and Recommendations

Chemotherapy does appear to have negative effects on specific neurocognitive functions.

A significant cognitive function difference was detected in leukemic treated cases compared to controls and correlated to the metabolic brain changes detected by MRS.

MR spectroscopy is more sensitive method demonstrating metabolite changes in the brain after chemotherapy treatment of leukemic children.

This study identifies relationships between brain metabolite ratios and cognitive functioning in children with leukemia.

MRS may be useful in detection of neurotoxic effects of chemotherapy, but prospective longitudinal studies are recommended to determine the prognostic value.

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الملخص

الهدف : دراسة متعمقة عن تأثيرات العلاج الكيميائي لمرضى اللوكيميا على الوظائف العصبية المعرفية ، وأيضا لاستكشاف العلاقة بين الوظائف المعرفية والتغيرات الأيضية في مناطق محددة بالدماغ باستخدام التحليل الطيفي بالرنين المغناطيسي (MRS). الطريقة : دراسة حالة تحليلية و ترصدية وقد تم تقسيم العينة إلى مجموعتين: المجموعة الأولى وتشمل ثلاثون مريضا مصابين باللوكيميا ويتلقون العلاج الكيميائي "الحالات " والمجموعة الثانية وتشمل ثلاثين من المرضى الذين يعانون من سرطان الدم اللوكيميا ولا يتلقون العلاج الكيميائي على الإطلاق "ضوابط"..

وقد استخدمت الإختبارات والفحوصات التالية على جميع أفراد المجموعتين:

1- التقييم الإكلينيكى.
2- أختبار وكسلر لقياس الذكاء للأطفال(WISC) .
3- التحليل الطيفي بالرنين المغناطيسي (MRS) .

النتائج : أظهرت الدراسة باستخدام مقياس الذكاء الكلي للأطفال (WISC) وجود اختلافات ذات دلالات إحصائية كبيرة بين المجموعتين ، حيث أن أداء المجموعة الأولى كان أقل من المجموعة الثانية (الضابطة) . وكان هنالك أيضاً اختلاف ذو دلالة إحصائية كبيرة بين المجموعتين فيما يتعلق بالرنين المغناطيسي الطيفي (MRS) في الفص الأمامي والصدغي ومناطق أخرى بالمخ. **الخلاصة :** التحليل الطيفي بالرنين المغناطيسي MRS هو الأسلوب الأكثر حساسية الذي يظهر التغييرات الأيضية في الدماغ بعد العلاج الكيميائي للأطفال المصابين باللوكيميا . كما وجد أيضا فروق كبيرة في الوظائف المعرفية في مجموعة المرضى بالمقارنة مع المجموعة الضابطة وربطها بتغيرات الدماغ الأيضية التي تم الكشف عنها بواسطة التحليل الطيفي بالرنين المغناطيسي .MRS

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Neuropsychiatric Complications Following Liver Transplantation

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المضاعفات النفسية و العصبية بعد عمليات زراعة الكبد

محمد عزت أمين، فيصل عبد الوهاب عطا

Abstract

Objective: The aim of this retrospective study was to evaluate the prevalence of neuropsychiatric complications after living donor liver transplantation. **Methods:** Between May 2001 and April 2005, 110 recipients were admitted to ICU after LT and were evaluated by full general, psychiatric and neurological examination, EEG, brain CT and/or MRI, diagnosis of psychiatric disorders was according to DSM-IV-TR criteria, the presence or absence of PPS was evaluated on the basis of its diagnostic criteria, patients were observed after LT for one year. **Results:** Of transplanted patients 50.9% developed neuropsychiatric complications and these patients' stay in the ICU was much longer that of all admitted patients. A neurologic complication was observed in 32.7%, psychiatric disorders in 43.6% of which 62.5% developed PPS. The survival rate after LT of patients with NPCs was similar to patients without NPCs. The incidence of neuropsychiatric symptoms was found to be similar between the patients treated with cyclosporine and tacrolimus. Finally, no correlation was observed between the primary cause of liver disease and the NPCs reported. **Conclusion:** There was a high incidence of neuropsychiatric complications after LT, prolonging the patients' stay in intensive care significantly. Careful pre-operative and post-operative neuropsychiatric evaluation is important for early diagnosis of NPCs.

Declaration of interest: None

Key words: Liver Transplantation (LT), Paradoxical Psychiatric Syndrome (PPS), neuropsychiatric complications (NPCs).

Introduction

There are several obvious reasons for conducting a comprehensive neuropsychiatric evaluation of patients after successful liver transplantation. Psychometric tests are able to detect the presence of cerebral dysfunction in the absence of overt clinical signs of encephalopathy [1]. Moreover, these tests are known to be more sensitive indicators of central nervous system pathologic conditions than the electroencephalogram [2]. Certain neuropsychological indices are predictors of social and vocational adjustment, and thus can be used to either counsel or direct rehabilitation efforts after transplantation [3,4].

Behavioral, psychiatric, and emotional disturbances are common in prospective transplant patients with advanced liver disease, many of whom have hepatic encephalopathy. Because these latter disturbances can negatively influence the individual's capacity to function behaviorally, as well as their social environment, the assessment of neuropsychiatric status after successful liver transplantation is of obvious importance in evaluating the holistic outcome of hepatic transplantation[5,6,7].

Psychiatrists play an essential role in the pre-transplant evaluation and continuous care of liver transplant patients. The prevalence of mental disorders among post-liver-transplant patients has ranged from 30% to 70%, depending on the study sites, the time of investigation after transplantation, and the diagnostic criteria used[8,9,10]. Although most of these disorders will remit by the time the patient is discharged from the hospital, acute treatment is imperative for the relief of painful experiences for patients and the family members involved [11, 12,13].

In living-related organ transplantation to patients with kidney or liver failure, recipients are prone to having guilt feelings about their donors. Recently, the extent of living related organ transplantation has been increasing [14, 15, 16]. Recent psychiatric studies have demonstrated that recipients and donors who underwent living-related organ transplantation sometimes exhibit "Paradoxical Psychiatric Syndrome (PPS)" despite successful transplantation without major [17].

Recipients who undergo child-to parent living-related liver transplant may be more likely to have guilt feelings compared with the experience of a child who receives an organ donation from a parent [18].

The occurrence of PPS was significantly related to recipients' guilt feelings toward living donors, but these were strongly superseded by recipients' desires to escape from approaching death just before LRT. These results suggest that pre-transplant psychological assessment is useful for predicting post-transplant occurrence of psychiatric disorders. In each instance, psychiatric complications occurred following transplantation, despite

an otherwise favorable surgical course for both donor and recipient[19,20,21].

Neurological complications which are responsible for significant mortality and morbidity after liver transplantation have been reported in 8.3% to 47% of cases in various series[22,23,24] and these complications include encephalopathies, central nervous system (CNS) infection, cerebro-vascular diseases, drug toxicities and other less common syndromes[25,26,27]. However, these previously reported neuropsychiatric complications and others were not described, or reported in Egypt yet. The aim of this study was to evaluate the prevalence of neuropsychiatric complications after living donor liver transplantation, and the impact immunosuppression on the neuropsychiatric complications in Egypt.

Patients and Methods

A total of 110 patients received liver transplantation (LT) were observed at the Intensive Care Unit (ICU) from May 2001 to April 2005. The observation time of all patients after LT was one year where. They were followed up twice weekly. However some patients (with NPCs) were followed up daily. The recipients' hospital stay is about 21-30 days (unless complicated). After discharge the follow up is weekly and then biweekly in the first six months and then monthly for the next six months. Both the donor and recipient were followed up at an outpatient clinic by a consultant hepatologist (one of the team of LT), who refer the patient to other consultants if needed.

All patients (100%) received living donor liver transplantation (LDLT). The primary liver diagnoses in all patients are summarized in table (2). These patients are the first 110 LDLT in Egypt.

Table (2): The primary liver diagnosis

Diagnoses	No. of patients	Percentage
Hepatitis C	48	43.6
Hepatitis B	37	33.6
Primary biliary cirrhosis	5	4.5
Autoimmune	8	7.3
Acute liver failure	7	6.4
Wilson disease	2	1.8
Alcoholic cirrhosis	3	2.8
Total	110	100

All operations were performed using standard techniques and post-operative care was similar for all patients. The warm and cold ischemia time was recorded. All patients received immunosuppressive therapy based on corticosteroids, mycophenolatmofetile (MMF 19/12) (Cell-Cept), Cyclosporine, (CSA, 5 mg/kg/12 h orally), (Sandimmune), or tacrolimus (TAC 0.05 mg/kg/12 h orally), (Prograf. Fujisawa). Daily doses and trough level of CSA or TAC were measured. The length of all patients' stay in ICU was recorded.

The laboratory data of systemic infection and the function of the liver and the kidney were measured daily. After providing informed consent all recipients were assessed by two consultants of psychiatry and neurology. Diagnosis of psychiatric disorders was made based on the DSM-IV-TR criteria [28]. The presence or absence of PPS was evaluated on the basis of diagnostic criteria for PPS (Table1). When all four elements existed, psychiatric symptoms were judged as PPS [17]. Diagnoses of NCs were assessed by neurological examinations including symptoms, cerebral computed tomography (CCT) and/or brain MRI.

Table (1): Diagnostic Criteria for Paradoxical Psychiatric Syndrome

1.	**Prominent conflicts associated with transplantation (for example, guilt regarding the donor's welfare).**
2.	**Situational reaction such as depression, anxiety, conversion, somatization, and adjustment disorder, and/or psychosis.**
3.	**The reaction occurs as a late complication following liver transplantation (within the first year following transplant).**
4.	**Favorable medical status of donor and recipient, without tissue rejection or other medical complications.**

Results

Incidence of NPCs following LT:

The total number of patients was 110 (74 men and 36 women), with a mean age of 54±13.73 years. NPCs occurred in 56 patients (38 men; 18 women, with a mean age of 52±13.1), resulting in an incidence of 50.9% of all LT patients (56/110). The neuropsychiatric symptoms occurred on post-operative day (POD) 6.7±7.4 (range: POD 1-30). Neurological complications occurred in 36 (32.7%) patients (36/110), (Table 3).

Table (3): The types of neurological complications following liver transplantation

Complications	No. = 36	Percentage (32.7)
1. Encephalopathy	25	(69.4) 22.7
2. Seizures	8	(22.2) 7.3
3. Ischaemic stroke	3	(8.3) 2.7
4. C.N.S. infection	3	(8.3) 2.7
5. Intra-cerebral hemorrhage	1	(2.8) 0.9
6. Ataxia	6	(16.7) 5.5
7. Dysphasia	1	(2.8) 0.9
8. Headache	5	(13.9) 4.5
9. Tremor	7	(19.4) 6.4
10. Posterior leucoencephalopathy syndrome (PLE)	2	(5.61.8)
11. Central pontine myelinolysis	2	(5.6) 1.8
12. Peripheral neuropathy	6	(16.7) 5.5
13. Brachial plexus injury	4	(11.1) 3.6

Whereas psychiatric disorders occurred in 48 (43.6%) patients (48/110), where 15 (31.3%) patients suffered from Major depression, 13 (27.1%) patients suffered from Depressive disorder NOS, 9 (18.7%) patients suffered from Adjustment disorder, 6 (12.4%) patients suffered from Brief psychotic disorder, 2 (4.2%) patients suffered from PTSD and the remaining 3 (6.3%) patients suffered from Substance related disorder (Table 4).

Table (4): The Psychiatric Disorder (DSM-IV-TR criteria) following liver transplantation

Psychiatric Disorder	No. = 48	Percentage (43.6)
1- Major depression	15	(31.3) 13.6
2- Adjustment disorder	9	(18.7) 8.2
3- Depressive disorder NOS	13	(27.1) 11.8
4- Brief psychotic disorder	6	(12.4) 5.5
5- PTSD	2	(4.2) 1.8
6- Substance related disorder	3	(6.3) 2.7

Among 48 recipients who met the diagnosis of psychiatric disorders based on the DSM-IV-TR criteria, 30 met the diagnostic criteria for PPS. The PPS diagnosis was seen in 62.5% (30 of 48 recipients with psychiatric disorders) and 27.3% (30 of 110 recipients).

The PPS diagnosis occurred in 77.1% (27/35) of recipients who received a donor liver from one of their children, in 8% (2/25) with a graft from brothers/sisters, in 6.7% (1/15) with spousal donation and in 0.0% with a graft from father to child (0/21) and from anon relative donor (0/14).

The length of the stay in ICU of patients with NPCs was 18.2±17.2 days. This was significantly longer compared with that of the total of patients (7.9±9.8 days) ($P<0.05$).

EEG changes revealed generalized slowing in 25 patients of all patients (22.7% 25/110) 15 of them had NCs (41.7%) (15/36), while focal changes (focal slowing or focal spike and wave) were observed in 10 patients (9.1%) (10/110) and only in 6 of those having NCs (16.7%) (6/36).

Neuro-radiological results revealed positive findings in 13 patients (11.8%) (13/110), 9 of them had NCs (69.2%) (9/13), 2 of them had central pontine myelinolysis, 2 had posterior leucoencephalopathy syndrome. Intra-cerebral hemorrhage in one patient, and cerebral infarctions in three patients where some patients had more than one NC.

Influence of NPCs on the survival rate after LT:
The survival rate (SVR) after LT of patients with neuropsychiatric complications was lower [76.8% (43/56)] compared with patients without NPCs [81.5% (44/54)], but no significant difference was recorded (P>0.05) (Table 5).

Table (5): Influence of NPCs on the survival rate (SVR) after LT

Groups	No.	SVR
Patients with NPC	56	43 (76.8%)
Patients without NPC	54	44 (81.5%)
Total	110	87(79.1%)

Effect of CSA and TAC on NPCs:
NPCs occurred in 50.6% of TAC treated patients and 51.9% of CSA-treated patients. There was no significant difference between these two groups (P>0.05). Neuropsychiatric symptoms were similar between these two groups but seemed to develop earlier in CAS-treated patients than in patients who received TAC (P>0.05) (Table 6).

Table (6): Effect of cyclosporine and tacrolimus on neuropsychiatric complications

Treatment	All patients	Patients with NPCs	Incidence	Onset (POD)
TAC	83	42	50.6%	7.3±8.1
CSA	27	14	51.9%	5.1±4.6
Total	110	56	50.9%	6.7±7.3

Effect of primary diagnoses on NPCs:
Hepatitis C and Hepatitis B were the most common causes of liver failure (Table 1). However, no correlation between primary diagnosis and the incidence of NPCs as found (P>0.05) (Table 7).

Table (7): Effect of primary diagnoses on neuropsychiatric complications

	All patients	Patients with NPCs post LT	Incidence of NPCs
Hepatitis C	48	27	56.3%
Hepatitis B	37	19	51.4%
Primary biliary cirrhosis	5	2	40%
Auto-immune	8	4	50%
Acute liver failure	7	3	42.9%
Wilson's disease	2	0	0.00
Alcoholic cirrhosis	3	1	33.3%
Total	110	56	50.9%

Discussion

Neuropsychiatric complications (NPCs) are commonly seen after LT. The use of immunosuppressive drugs, cerebral hemorrhage, and systemic infection were causative factors. With the exception of cerebral hemorrhage and cerebral infarct most of them carry a good prognosis. Most complications occur early following LT and a variety of etiology exists. Effective treatment specific for different etiology can help to improve the prognosis of such patients [29, 30, 31].

In our current study, NPCs occurred in 56 patients resulting in an incidence of 50.9% of all LT patients (56/110). The reported incidence of NCPs was variable for different studies. Yinghong, et al. [32], in their retrospective study found an incidence rate of 35.0%, which was much lower than our study as he assessed the recipients in the first week following LT, where in our study it was for one year. Another factor is that he didn't evaluate psychiatric disorders which are responsible for a large proportion of NPCs. However, our prevalence (50.9%) is within the range reported by Gangeri, et al.[19], where found that an overall 49/94 patients (52%) reported various postoperative neuropsychiatric symptoms.

Psychiatric disorders occurred in of our patients 48 (43.6%) patients (48/110), which was much lower than that of Fukunishi, et al. and Fukunishi, et al.[17,33], where psychiatric disorders occurred in 58.5% (31/53) and

61.0% (25/41) respectively. Such higher incidence might be due to that they added Delirium to psychiatric disorders (17% and 17.2% respectively); whereas in our study it was added to NC. Other psychiatric disorders (Major depression, Adjustment disorder, Brief psychotic disorder, PTSD and Substance related disorder) were nearly similar to our findings.

PPS was diagnosed in 62.5% of our recipients (30 of 48 recipients with psychiatric disorders). This was higher that found by Fukunishi, et al. [17], 51.6% (16/32). This difference might be due to the higher proportion of recipients who received a donor liver from one of their children in our study 77.1% (27/35) where for the other study was 72.2 (13/18).This category of recipients (parent) suffered the higher rate of guilt feelings after surgery (the core symptom of PPS). Before LT recipients' desire to escape from approaching death supersedes their conflicted feelings related to the prospect of living organ donation. Following LT, the fear of death subsides and concern for the donor (his child) becomes more pronounced. Other categories (brothers/sisters and spousal donation) experience less guilt with much lower incidence of Paradoxical Psychiatric Syndrome [18, 17].

On the other hand Fukunishi, et al.[18], found that twelve (80%) of the 15 adult recipients exhibited paradoxical psychiatric syndrome (PPS). This higher percent than our study might be due to that all their patients were in the category of recipients with adult child-to-parent donors. Another important variable is the small number of patients [15] compared to our study (110).

Neurological complications occurred frequently following LT. These complications are associated with significant mortality and morbidity, and may lead to longer stay in hospital [34, 35]. We found that major NCs affected 32.7% of all LT patients. The reported incidence of NC was variable for different centers. Muller et al. (36) reported about a rate of 21% for NCs following LT, whereas a 9.42% rate was reported by Vogt et al.[37]. However, our prevalence (32.7%) is within the range reported in other medical centers (8.3 to 47%) [27, 38, 39] and much more than that reported by Haghighi et al. [22].

A diffuse encephalopathy is considered the most common complications after liver transplantation (69.4% in this study). Adams et al.[40] reported on encephalopathy rate of 76% in his series. Similar results were presented by Moreno et al.[41], who reported an encephalopathy rate 73%. The underlying mechanisms are unknown. Although in a large prospective study the authors diagnosed a diffuse encephalopathy (anoxic, septic, or metabolic) as the most common complication occurring in 56.5% of NC in LT patients [34]. Postmortem studies show diffuse anoxic-ischaemic changes as the most common neuropathological findings [42, 43].

However Haghighi et al. [22] reported that the exact cause of this complication is difficult in some cases. There are many confounding factors. Martinez et al.[44] coined the term "transplantation encephalopathy" to designate neurological disorders following graft dysfunction[44], it was the single most cause of neurological complications. Cases that were attributed to the electrolyte imbalance and uremic encephalopathy may have been contributed to by a component of graft dysfunction. Ammonia, branched amino acids, mercaptans, manganese, short chain fatty acids, and octopamine are substances implicated to cause cerebral dysfunction in liver failure[45, 46, 47].

The incidence of seizures following LT was reported as ranging from 0% to over 40 %[34, 37, 40, 48]. In this study, it was recorded to be 11.1%. The incidence of seizures after LT appears to be declining and the cause of this reduction seems to be the improvement in the management of multiple metabolic and toxic abnormalities causing seizures.

Erol, et al. [49] and Erol, et al. [50] retrospectively reviewed consecutive cases of pediatric liver transplantation to assess the types of neurologic complications that occurred. They found that the most common neurologic complications were seizure (seven episodes in six patients) and sudden-onset headache (five episodes in four patients). The difference between our results and this study might be due to the different age group (children) and the primary diagnosis (mainly Wilson's disease) which might affect the incidence and type of NCs.

PLE consists of headache, visual disturbances, seizures and a somnolent state, which can be caused by a variety of conditions and immunosuppressant [51,52]. The accurate incidence of this condition is difficult to determine. Nevertheless it has been reported to apply to about 5% of patients after LT [37, 40, 41, 48, 53, 54]. In this study, we identified 5.6% of cases, which is in the same range as in earlier reports already described.

CNS infections have been reported in previous studies[34, 40, 55] and occurred in about 5% of patients. In this study, it is reported in three patients of those with NCs 8.3%.

Cerebrovascular complications occur in about 4% of cases in different clinical series [34,40,48]. In our series 2.8% of cases developed intracranial hemorrhage, and 8.3% experienced on ischaemic stroke.

No correlation was observed between primary diagnosis and the incidence of NPC. Lewis and Howdle, [56] reported

a higher rate of NC after LT for primary biliary cirrhosis and alcoholic cirrhosis. Ghauset.al.[57] reported a very high incidence of NC following LT regardless of liver diagnosis (75%).

In this study, the survival rate between LT patients with NPCs and without NPCs was not significantly different. Similarly, Wijdickset al.[58] described no impact of NC on the survival rate after LT. This finding was in contrast to Pujolet al.[34], who reported that patients who had NCs had a significantly higher mortality, rate than those without.

In the study of Haghighiet al.[22] developing neurological complications was a predictor of a fatal outcome, which wascontrary to Stein et al.[59] who concluded that mortality at one and two years following the transplant was not related to neurological complications.

The application of cyclosporine or tacrolimus after liver transplantation has been reported to have a different effect on the incidence of neuropsychiatric complications. In this study, similar incidence of neuropsychiatric symptoms was found between the patients treated with CSA and TAC. The same observations were made by Lewis et al., Freise et al., Ardizzone et al. and Saner et al.[56,60,61,62].

On the other hand, Mueller et al.[36] showed a higher incidence of NCs for TAC in comparison with CSA and the most common complications were headache and tremor, a finding which was also reported by Ardizzone et al.[61] and Saner et al. and Padovan et al.[63].

More than 29 countries have membership of the Middle East Society for Organ Transplantation (MESOT), and collectively these countries have a population > 600 million. These include all Arab countries, Iran, Turkey, Pakistan, and countries of central Asia. There are common features of organ transplantation in the Middle East countries that include inadequate preventive medicine, uneven health infrastructure, poor awareness in the medical community and public at large of the importance of the organ donation and transplantation, and poor government support of organ transplantation[64,65,66]. Most of the studies in the Middle East focused on NCs mainly in children [49,50], other complications such as biliary leaks, vascular occlusion, acute cellular rejection and infections[67]. Other studies describe a case report of the first case done in their countries [68, 69], or the donor experience[70].

Limitations

The results in the present study should be interpreted in light of the following limitations:

First, the study was a retrospective study which didn't allow us to explore important aspects of recipients which is available in prospective studies with proper study design. Second, we didn't add the assessment of donors, which is of relevance especially for the occurrence of PPS. Third, we focused only on postoperative NPCs and did not apply a symptom checklist questionnaire to screen other symptoms that may also have relevance in diagnosis and management. Fourth, we didn't consider duration of liver disease (before LT) and the financial burden, which are also important variables. More research is needed for such patients for better diagnosis and management of LT patients, and exploring important areas such as QOL and Alexithymia.

Conclusion

In conclusion, a high incidence of neuropsychiatric complications after LT occurred, which led patients in this study to stay longer in ICU. The major neuropsychiatric complications reported were encephalopathy, major depression, adjustment disorder, depressive disorder NOS, seizures, headache and tremor. PPS have high incidence rate especially when the donor is the child of the recipient. No correlation was found between the primary liver disease and incidence of NPCs following LT, with no significant influence of these NPCs on survival rate. Therefore, routine pre-operative neuropsychiatric evaluation and careful post-operative examination are necessary for early diagnosis and recognition of NPCs after LT and prompt treatment would be essential for the recipients.

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الملخص

الهدف من الدراسة: تهدف هذه الدراسة لتقييم نسبة حدوث المضاعفات النفسية و العصبية بعد عمليات زراعة الكبد من الأشخاص الأحياء. **الطريقة:** تمت هذه الدراسة في المدة من مايو 2001 إلى ابريل 2006 على 110 من المرضى بالرعاية المركزة بعد عمليات زراعة الكبد وتم فحصها إكلينيكياً وعمل رسم مخ كهربائي وأشعة مقطعية على المخ أو رنين مغناطيسي على المخ عند الحاجة وكان تشخيص الاضطرابات النفسية وفقا للتصنيف العالمي الرابع للأمراض النفسية، تم تقييم وجود أو غياب المتلازمة النفسية المتناقضة على أساس معاييرها التشخيصية وتم متابعة المرضى لمدة عام. **النتائج:** وقد أظهرت نتائج البحث أن المضاعفات النفسية و العصبية قد ظهرت في 50.9% من المرضى وأن هؤلاء المرضى مكثوا مدة أطول بالرعاية المركزة عن باقة المرضى . المضاعفات العصبية قد ظهرت في 32.7% من المرضى، الاضطرابات النفسية في 43.6% منهم 62.5% حدث لهم المتلازمة النفسية المتناقضة وأن معدل الحياة في مرضى المضاعفات النفسية و العصبية لم يختلف عنه في غيرهم من المرضى بدون مضاعفات وأن نسبة حدوث المضاعفات في المرضى الذين تم علاجهم بالسيكلوسبورين والتكرولميس لم تختلف. ولوحظ عدم وجود علاقة بين السبب الأول لأمراض الكبد والمضاعفات التي تم رصدها. **الخلاصة:** نسبة حدوث المضاعفات النفسية و العصبية بعد زراعة الكبد عالية مما يؤدى إلى بقاء المريض مدة أطول في الرعاية المركزة وتؤثر على حياته وحالته العامة فيما بعد ومن هنا فأن التقييم النفسي و العصبي الدقيق قبل وبعد العملية مهم للتشخيص المبكر.

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Objective Structured Clinical Examination (OSCE) during Psychiatry clerkship in a Saudi university

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الاختبار السريري موضوعي البناء خلال التدريب الميداني للطب النفسي في جامعة سعودية

مصطفى عمرو، داهود رداد، زينب عفيفى

Abstract

Background: The purpose of this study was to investigate the validity of the Objective Structured Clinical Examination (OSCE) through comparing students' OSCE performance against the traditional forms of students' evaluation. **Subjects and methods:** We analyzed the OSCE performance of 110 fifth-year medical students against, Traditional Oral Clinical Examinations (TOCE), portfolio and multiple choice questions (MCQ) written exam. A self-administered student survey included an eight item questionnaire assessing different aspects of the OSCE. **Results:** There were significant correlations between OSCE performance and all forms of psychiatry exams, except those belonging to the MCQ. Simple linear regression showed that OSCE accounted for 65.1% of the variance in total clinical and 31.5% of the final marks. Student survey showed that more females agreed that OSCE was a fair assessment of clinical clerk's skills compared to their male counterparts. **Conclusion:** This study demonstrates that the OSCE is similar to the traditional methods in evaluating the performance in a standardized manner. Teaching programs need to identify which aspects of the OSCE cause difficulty to students. This information would be useful for future developments in undergraduate teaching.

Declaration of interest: None

Keywords: OSCE, undergraduate medical students, assessment methods.

Introduction

College of Medicine at King Faisal University (KFU) in Saudi Arabia; the course of Psychiatry is composed of clinical rotation of 6-week duration based on a specialized psychiatric hospital during which they are assigned to a multidisciplinary team led by a psychiatrist. Students work closely with a psychiatry resident in the inpatient section and are exposed to the broad range of treatment modalities including individual and group psychotherapy and psychopharmacology. Teaching is mediated by lectures, small-group tutorials and group discussion. The male and female medical students were taught separately both during lectures and clinical attachment. Since the establishment of the Psychiatry Department in the academic year 2006-2007, rotating students have been evaluated during and at the end of the course using portfolio, traditional oral clinical examination (TOCE) and multiple choice questions (MCQ). To improve the student learning/assessment experience, we introduced OSCE for the summative assessment of students, in conjunction with a traditional oral examination and portfolio. The OSCE has enjoyed a lot of popularity since its introduction in 1975 by Harden, who used it instead of the clinical exam. [1] Because of its validity and reliability, the OSCE has been increasingly used for assessment of medical students' clinical skills. [1,2] Although the use of OSCEs in psychiatry has been described as less rapid and widespread than in other medical fields, recent years have witnessed an increased interest in its use in psychiatry. [2] Earlier studies suggest that female undergraduates perform better than male undergraduates in psychiatry attachment. [3] Moreover, Fabrega et al., [4] found that female medical students demonstrated a significant improvement in accuracy of assessment of psychopathology during the clerkship, while their male counterparts actually showed a significant reduction in accuracy. In contrast, others[5,6] showed non-significant differences in male and female attainment. Our subjective impressions suggested that women performed better than males attending King Faisal University. We hypothesized that the females would perform and accept OSCE better than males. Because the OSCE had been recently introduced to psychiatry at KFU, our objective in the present study was to investigate the validity of the Objective Structured Clinical Examination (OSCE) by comparing student performance on the OSCE with traditional forms of evaluation and through a student opinion survey at the end of examination. This study also examined the effect of gender on performance and acceptability of OSCE

Method

We analyzed the OSCE performance of 110 fifth-year medical students (56 females, 54 males) against, Traditional Oral Clinical Examinations (TOCE), portfolio and multiple choice questions (MCQ) written exam. A self-administered student survey included an

eight item questionnaire assessing different aspects of the OSCE.

Objective Structured Clinical Examination (OSCE)	A blueprint was developed for each OSCE to capture the clinical competencies in the six thematic topics: mood disorders, anxiety disorders, child psychiatry, psychosis, personality disorders and substance abuse topics. A map for the stations was devised to guide the examinees and organizers with clear written instructions to the examiners, patients, and examinees. The OSCE is comprised of nine stations which included two Manned questions. The first Manned Station (MS) included psychiatric interview for a male patient with schizophrenia while the second assessed the mental status, particularly mood and affect of a female patient with bipolar I mood disorder. Checklists were designed to contain the desired competencies to be examined (average 28 items) scored as done or not done or done incorrectly. At the end of each checklist, there were four questions with a 3 point likert scale addressing the interview technique. Following the MS, students moved to an UMS (four minutes each) which included four dependent data station (four minutes each) with questions based on the previously taken history or examination stations and three independent data stations.
Multiple Choice Questions (MCQ)	The MCQ paper at each examination consisted of 50 items worth one mark each; Each MCQ item consisted of a stem with four response options. Test items were developed following standard, well-described MCQ writing procedures, and were designed to avoid ambiguity, vagueness, and value-laden language
Traditional oral Clinical Examination (TOCE)	In TOCE, students interviewed and examined a real patient over 45 minutes to explore their understanding of topics deemed relevant to curriculum and then summarize their findings to two examiners who questioned the students by an unstructured oral examination on the patient problem.
Portfolios	Students are expected to present at least one case per week at the ward rounds– these are discussed at the weekly group tutorial sessions as described in the curriculum: students present representative cases for mood disorders (week 1), Anxiety disorders (week 2), etc.

OSCE feedback questionnaire

A five-point Likert type questionnaire (Strongly Agree=5 to Strongly Disagree=1) was developed based on the work of Hodges et al [7] that assesses the acceptability of the OSCE. The instrument included eight items and was self-administered in English as it is the language of instruction. Satisfaction score was calculated for each student by adding their scores on the eight items. Internal consistency as measured by Cronbach's alpha was 0.79 overall. Cronbach's alpha for the eight items ranged from 0.73 to 0.79.Test–retest reliability as measured by Pearson correlation coefficient was 0.80 , $p < 0.05$.

Statistical Analysis

Data analysis was carried out using statistical software (SPSS v. 15). Mean and standard deviations (SD) were calculated for each exam mark. Zero order and partial correlation were performed between test marks, and regression models were fitted to evaluate the predictive value of OSCE as an independent variable, alone or with other exams and total clinical score or total final marks for the dependent variables. To assess the reliability and credibility of the OSCE, statistical analyses of Cronbach's alpha, Kappa, and Pearson's correlation coefficient were used.

Results

The marks for OSCE were normally distributed and ranged between 9 and 15 with no significant difference between genders (males 12.2 ±1.9, females 12 ±2, P= 0.59). The score ranges in TOCE, portfolio and MCQ were 16-25, 5-10 and 16-45 respectively. There was a significant correlation between OSCE and all forms of psychiatry exams except for the MCQ marks. Correlation was strong with the total clinical mark (combined marks of TOCE, OSCE and portfolio), moderate with TOCE and low with portfolio (r= 0.86, 0.49 and 0.20 respectively). Kappa concordance coefficient and the correlation between the scores of examinees were computed, ranged from 0.75 for Station 1 to 0.64 for Station 2. The Cronbach's alpha coefficients for station 1, 2 were 0.82 and 0.78 respectively. In simple linear regression, OSCE accounted for 65.1% of the variance in total clinical marks and 31.5% of the final marks (P=0.001). One unit change was associated with 1.63 changes in total clinical and 2.05 change in final marks. In multiple regression analysis TOCE alone accounted for 74.5% of the variance in the clinical scores. Conditioned on its presence, OSCE explained an extra

variance of 19.2%. Table (1) shows the mean scores of students by gender of the OSCE opinion survey. Responses were similar except with item 4 (competent clerks would pass), (P=0.01). Satisfaction scores ranged between 11 and 24 among the studied students with a mean (±SD) of 18.5 ± 3.3. Females showed higher mean satisfaction scores than males, but the observed difference was not statistically significant. Average percent satisfaction was 78.4% and 75.7% among females and males respectively. However, the total score did not fully characterize the questionnaire as the percentage of female students who agreed that OSCE was a fair assessment of clinical clerk's skills was higher than their male counterparts with significant statistical difference.

Discussion

The acquisition of clinical skills is paramount to the development of a safe and competent practitioner.[8] OSCE as a performance-based assessment is a well-established assessment tool for many reasons: competency-based valid, practical and effective means of assessing clinical skills that are fundamental to the practice of medicine and other health care related professions. [9] While OSCE is in use in many medical disciplines in Saudi Arabia, particularly in General Surgery [10,11] , Orthopedics [12] and Internal Medicine [13], Psychiatric educators have been slow to adopt this method of evaluation. To the best of the authors' knowledge, this is the first report that addresses OSCE in undergraduate psychiatric assessment in Saudi Arabia. As expected, implementation of OSCE at our department has proved to be a useful adjunct to other forms of clinical assessment, the student' scores on the OSCE correlated well with the results in clinical exams and explained a great part of the variance in total clinical marks. Similar findings were reported in different specialties from different countries. Townesend et al, [14] (general practice clinical attachment, United Arab Emirates), Yu et al[15], (surgery, USA) and Singhal et al.,[16] (Pediatrics, England). However, there is no correlation between the results of OSCE and MCQs. This may be attributed to the fact that MCQs assess the students' cognitive abilities (covers the area of 'knows' and 'knows how' of Miller's pyramid of assessment) and this could span the levels of Bloom's taxonomy of educational objectives from the level of comprehension to the level of evaluation [17] whereas the OSCE like other forms of clinical exams tests a different domain of clinical skills (covering the area of 'shows how' of the Miller's pyramid of assessment) which is a prerequisite for physician performance in real life, such as history taking and physical examinations. [1] Females showed higher mean satisfaction scores than males, but the observed difference was not significant. The OSCE has been recently introduced in the assessment of psychiatry attachment at KFU. Previous studies demonstrated that female students showed greater adaptability to novel situations and concepts. [3] Other possible factors could be social factors. Female students being less influenced by negative and external peer pressure, having to prove themselves in a male dominated society and become more hardworking and motivated. [18]

Finally, contrary to our hypothesis based on previous studies and our subjective expectations, there was no statistically significant difference between male and female students with regard to the OSCE in psychiatry at our center. This finding contradictedseveral previous studies. [3, 4] Differences from previous research may relate to the smaller sample size investigated as this increases the possibility of Type II errors. Scott et al., examined the results for five years of students from several centers; also the aspects of psychiatry in which females outperform their male colleagues, such as rating of psychopathology as rated by Faberga et al [14], which were not specifically elicited in any of the assessment formats used. A recent study conducted in our center showed that male medical students had a less favorable attitude after rotation in psychiatry which may contribute to underachievement in the subject as undergraduates, with consequences for subsequent interest, and recruitment to the specialty. [19]As we found that males are achieving as well as females, it may be the negative attitude are being altered by new development in the teaching and practice of psychiatry at KFU; for example, the curriculum used is a hybrid type that adopts an integrated approach with an increased emphasis on the biological and psychodynamic and social factors.

Also, females showed higher mean satisfaction scores than males, but the observed difference was not significant. There may be potential explanations for why results demonstrated differences when compared with previous research. This may relate to the smaller sample size investigated since a smaller size would increase the possibility of Type II errors. Further, we investigated the results of only one year of students. Secondly, gender-related differences were noted by Faberga et al. [4] in their study of factors influencing medical students' learning as part of psychopathology assessment during psychiatric clerkship. Female medical students showed a significant improvement in accuracy of assessment of

psychopathology during the clerkship, while their male counterparts actually showed a significant reduction in accuracy. Females also possess better vigilance, reading comprehension, perceptual speed and associative memory and are also better at scanning the physical environment[20]. It might give them an edge over males and consequently, they show a better ability to recall more details from learning exposure in psychiatry.

Conclusion

This study demonstrates that the OSCE is similar to the traditional methods in evaluating the performance in a standardized manner. Teaching programs need to identify which aspects of the OSCE cause difficulty to the male and female students. This information would usefully inform future developments in undergraduate teaching.

Distribution of fifth year medical students response to the Psychiatry satisfaction survey (Items 1-8)

Items	Female students (N=56)			Male students (N=54)			Asymp. Sig. (2-sided)
	Disagree	Neutral	Agree	Disagree	Neutral	Agree	
Quality of Examination 1-Situations reflect those a primary care physician would have to deal with	51.8%	8.9%	39.3%	48.1%	5.6%	46.3%	**.664**
2-Situations reflect those a psychiatry resident would have to deal with	12.5%	1.8%	85.7%	3.7%	5.6%	90.7%	**.153**
Assessment of Clerks 3-Fair assessment of clinical clerks' skills	8.9%	.0%	91.1%	13.0%	11.1%	75.9%	**.025**
4-Competent clerks would pass	16.1%	10.7%	73.2%	24.1%	20.4%	55.6%	**.145**
5-Incompetent clerks would fail	5.4%	10.7%	83.9%	20.4%	11.1%	68.5%	**.057**
6-Prefer to oral examination for certification	44.6%	12.5%	42.9%	55.6%	13.0%	31.5%	**.446**
7-Would like an OSCE as a formative part of clinical clerk training	28.6%	19.6%	51.8%	40.7%	14.8%	44.4%	**.395**
8-Would like an OSCE as a summative part of clinical clerk training	**55.4%**	**7.1%**	**37.5%**	**42.6%**	**5.6%**	**51.9%**	**.318**

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الملخص

الغرض: الغرض من هذه الدراسة هو التحقق من صحة الاختبار السريري موضوعي البناء من خلال المقارنة بين أداء الطلاب بالأشكال التقليدية للتقييم. **الطريقة:** قمنا بتحليل أداء 110 من طلاب السنة الخامسة في الاختبار السريري موضوعي البناء و الاختبار التقليدي السريري الشفهي وحافظة الأنشطة المنظمة وأسئلة الاختيار من متعدد. وشمل الفحص استبيان يتضمن ثمانية بنود لتقييم الجوانب المختلفة للفحص السريري الموضوعي المنظم. **النتائج :** وجد ارتباط كبير بين أداء الطلاب في الاختبار السريري موضوعي البناء وجميع الأشكال التقليدية للتقييم ، باستثناء أسئلة الاختيار من متعدد. وأظهر الانحدار الخطي البسيط أن الاختبار السريري موضوعي البناء يمثل 65.1 ٪ من التباين في الدرجة السريرية الكلية و 31.5 ٪ من الدرجات النهائية. وأظهر مسح الطالب أن كثير من الطالبات وافقن أن الاختبار السريري موضوعي البناء يمثل تقييما عادلا للمهارات السريرية مقارنة بنظرائهم من الطلاب. **الخلاصة :** توضح هذه الدراسة أن الاختبار السريري موضوعي البناء مشابه للطرق التقليدية في تقييم أداء الطلاب بطريقة موحدة ويبرز حاجة البرامج التعليمية لتحديد الجوانب التي تسبب صعوبة للطلاب. ونأمل أن تكون هذه المعلومات مفيدة للتطورات المستقبلية في مجال التدريس الجامعي.

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Adult Attachment Styles in a Lebanese Community Sample: A Brief Arabic Experience in Close Relationships Scale

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أساليب تعلّق الرّاشد اللّبناني: دراسة عن تجارب عربيّة حول العلاقات الشّخصية

شاهي كازريان، دانا طاهر

Abstract

Objectives: The aim of this study was to develop a brief Arabic Experiences in Close Relationships (ECR-R) Scale and to examine its psychometric properties in the Lebanese context. **Method:** A 32-item Arabic ECR-R was administered to 418 Lebanese adults in an urban community. Based on factor analysis, a brief 16 item Arabic ECR-R was constructed to measure two adult attachment dimensions (avoidant and anxious, 8 items each). Psychometric properties of the 16-item ECR-R (Arabic ECR-R-16) in the form of factor analysis, internal consistency, and correlations with Arabic Center for Epidemiological Studies-Depression (Arabic CES-D) scores were examined, as were comparisons in relation to age, sex, education, marital status, and religion. **Results:** Factor analysis of the Arabic ECR-R-16 resulted in a two-factor model solution representing avoidant and anxious attachments with internal consistencies of $\alpha = .81$ and $\alpha = .79$, respectively, and significant correlations with Arabic CES-D scores ($r = .21$, $p<.0001$ and $r = .36$, $p<.0001$, respectively). Age was negatively correlated with anxious ($r=-.12$, $p < .05$) but not avoidant attachment. While Arabic ECR-R-16 scores were independent of education and religion, male Lebanese adults reported more avoidant and less anxious attachments than their female counterparts, and single Lebanese reported more avoidant and more anxious attachments than married Lebanese. **Conclusion:** The brief Arabic ECR-16 is a reliable and valid measure of adult attachment in the Lebanese context.

Key words: Avoidant attachment, anxious attachment, depression, Lebanese adults

Declaration of interest: None

Introduction

Adult attachment styles are the internal working models of self and significant others rooted in offspring-caregiver relations in childhood and implicated in the development of personality and psychopathology[1, 2]. The 36-item Experiences in Close Relationships-Revised Scale[3] (ECR-R-36) is one of the most widely used self-report measures of adult attachment. The scale was developed to assess two dimensions of romantic attachment in the United States: anxious attachment and avoidant attachment. Whereas avoidant adults avoid anxiety rising from closeness to attachment figures such as parent or romantic partner, anxiously attached individuals experience anxiety arising from fear of being rejected or abandoned by the significant others. The scale has shown favorable psychometric properties in the consistent extraction of the two-dimensions of adult attachment, high internal consistencies and temporal reliabilities, and significant correlations with other adult attachment measures, stress responsivity such as salivary cortisol levels and heart rate variability, emotion regulation, clinical measures of distress and somatic symptoms, and psychological well-being[4,8,9,10].

The Western-based 36-item English ECR-R has been translated and used first in Lebanon11 and then in Greece[12], Korea[13], Germany[14], and Norway[15] because standardized indigenous measures of adult attachment did not exist in these European and non-Western countries. The varied linguistic versions of the ECR-R-36 have been shown to be psychometrically sound among the European and non-Western groups, in addition to revealing that the two dimensions of attachment as socially constructed in the West also exist within adults from European and non-Western cultures.

Given the paucity of research on adult attachment in the Arab Middle-East[5, 16] and considering the successful Arabic translation of the 36-item English ECR-R scale and its refinement on the basis of factor analysis[11, 17], the goal of the present study was the development of a brief measure of the refined 32-item Arabic ECR-R-32[11] so that it is less time-consuming and hence less burdensome for use in clinical and non-clinical contexts in the Arab Middle East. More specifically, we use the 32-item Arabic ECR-R-32[11] to report on the construction and psychometric evaluation of a brief form in terms of factor structure, correlation with psychological distress, and relation to age, sex, marital status, and religion. Our construction of a brief Arabic ECR-R is similar to previous research efforts to shorten the original ECR-R-36[7,18].

Method

Participants

A total of 418 adults in an urban community in Lebanon completed a test battery that included the Arabic ECR-R-32[11] and the Arabic CES-D scale[17] in a counterbalanced order to minimize potential order effects. Participants were recruited from various community settings in Lebanon including schools, banks and shops. The majority of the participants were female (52.4%), single (47.9%), university level education (53.8%) and Sunni (57.3%). Their mean age was 33.93 (n=411, SD=12.03).

Instrumentation

Arabic Experience in Close Relationships-Revised Scale-32 (Arabic ECR-R-32[11]). The 32-item Arabic ECR-R was used to measure anxious and avoidant attachments in romantic relationships. Participants rated their romantic attachments on each item using a 7-point rating scale (1=Strongly disagree to 7=Strongly agree), higher scores indicating higher anxious attachment and higher avoidant attachment. The Arabic ECR-R has been validated in the Lebanese context[11]. Hijazi[11] reported high internal consistencies for the anxious and avoidant dimensions of the Arabic ECR-R-32 (α = .84 and α = .86, respectively), and an inter-correlation of $r = .26$, $p < .01$ Arabic Center for Epidemiologic Studies Depression Scale (Arabic CES-D[17, 19]). The Arabic CES-D scale is a 20-item measure of depressive symptoms. Each items is rated on a four-point Likert scale (0 = rarely or none of the time to 3 = most or all of the time), higher scores indicating higher levels of depressive symptoms. The Arabic CES-D has been validated in the Lebanese context[17]. The internal consistency of the Arabic CES-D for this sample of adult Lebanese was α = .85.

Procedure

Using SPSS Version 18, the 32 items of the Arabic ECR-R were subjected to principal factor analysis with oblique rotation. The Kaiser-Meyer Olkin (KMO) value of .86 for the sample exceeded the required value of .6 and the Bartlett's Test of Sphericity reached statistical significance ($p<.0001$), supporting the factoriability of the correlation matrix for the sample[20]. Principal factor analysis revealed the presence of seven factors with eigenvalues greater than one (6.00, 4.22, 1.69, 1.61, 1.21, 1.12, and 1.06) and factor loadings of items above .40. Inspection of the scree-plot and the scree test suggested retention of two factors. As such, a second principal factor analysis was performed with two-factor solution forced. Six items had factor loadings below .4; the first empirically derived factor was an anxious attachment factor comprising 14 original anxious attachment items and four original avoidant attachment items; and the second empirically derived factor was an avoidant factor comprising eight original avoidant attachment items. The eighth items of the empirically derived avoidant attachment factor (all original avoidant attachment items with factors loadings above .40) and the eighth items with highest factor loadings on the empirically derived anxious attachment factor (all original anxious attachment items with factor loadings above .40) were retained to form the brief Arabic ECR-R scale (Arabic ECR-R-16) for evaluation of its psychometric properties.

Results

Arabic ECR-R-16 Factor Structure

The 16 items of the Arabic ECR-R-16 were subjected to principal factor analysis with oblique rotation. The KMO value of .86 for the sample exceeded the required value of .6, and the Bartlett's Test of Sphericity reached statistical significance ($p<.0001$), supporting the factoriability of the correlation matrix for the sample[20]. Initially, three factors with eigenvalues greater than one were extracted (3.77, 3.39, and 1.09), accounting for 51.6% of the variance. Examination of the scree-plot suggested a two-factor solution as more suitable. Therefore, a second principal factor analysis with oblique rotation and forced two-factor solution was performed. The results indicated a first factor with an eigenvalue of 3.19 and explaining 19.9% of the variance, and a second factor with an eigenvalue of 2.79 and explaining 17.4% of the variance. The pattern matrix factor loadings for the brief form (Arabic ECR-R-16) and descriptive statistics in the form of means and standards deviation are provided in Table 1. As can been seen all factor loadings were above .30.

Table 1

Arabic ECR-R-16 Pattern Matrix Factor Loadings, Internal Consistencies, and Descriptive Statistics for Total Sample of Lebanese Community Adults (n=418) and for Lebanese Male (n=198) and Females (n=218).

Item Content	Total		Males		Females	
	I	II	I	II	I	II
13. Talk things over. (R)	**.76**	-.06	**.73**	-.02	**.77**	-.07
10. Discuss problems and concerns. (R)	**.69**	-.01	**.71**	-.01	**.65**	.02
12. Telling just about everything. (R)	**.69**	-.03	**.69**	.03	**.66**	-.07

11. Feeling helped when turning to partner in times of need. (R)	**.67**	-.16	**.69**	-.08	**.65**	-.23
3. Sharing private thought and feelings. (R)	**.60**	-.04	**.66**	-.06	**.50**	.01
16. Understanding of me and my needs. (R)	**.56**	.09	**.52**	.12	**.62**	.06
7. Comfortable opening up. (R)	**.43**	.16	**.41**	.05	**.43**	.26
14. Nervous about getting too close.	**.37**	.08	**.36**	.07	**.35**	.10
2. Worrying partner won't stay.	.04	**.72**	.07	**.77**	-.03	**.69**
4. Worrying partner doesn't really love me.	.07	**.68**	.10	**.69**	.04	**.68**
5. Worrying partner doesn't care.	.12	**.66**	.10	**.65**	.12	**.66**
9. Fearing feelings not reciprocated.	.15	**.62**	.10	**.59**	.16	**.65**
8. Worrying a lot about relationship.	.12	**.59**	.11	**.50**	.14	**.61**
15. Feeling mad for not getting needed affection and support.	-.12	**.48**	-.17	**.40**	-.04	**.53**
1. Being afraid of losing partner.	-.21	**.47**	-.14	**.52**	-.29	**.42**
6. Wishing partner has as strong feeling as me.	-.30	**.36**	-.39	**.33**	-.22	**.39**
α	.81	.79	.81	.78	.79	.80
X	2.48	3.93	2.70	1.18	2.29	1.08
SD	1.14	1.34	3.79	1.32	4.05	1.36

Note: ECR-R = Experiences in Close Relationships-Revised Scale

Appendix A
التجارب في العلاقات الرومانسية
(Arabic ECR-R-16)

- تتعلق المقولات الواردة أدناه بمشاعرك بشكل عام في العلاقات الرومانسية. ما يهمنا هنا هو كيف تخوض تجربة العلاقات الرومانسية عامة وليس ما يحدث فقط في علاقة تختبرها الآن. فليس من الضروري مثلاً أن تكون حالياً مرتبطاً بأية علاقة لتتمكن من التعليق على هذه المقولات، أجب وفقا لما قد تشعر عامة في أية علاقة رومانسية. أشر إلى مدى موافقتك أو عدم موافقتك على كلمن المقولات باختيار الرقم المناسب:

لا أوافق أبداً	لا أوافق إلى حد ما	لا أوافق إلى حد بسيط	حيادي	أوافق إلى حد بسيط	أوافق إلى حد ما	أوافق كلياً
1	2	3	4	5	6	7

7	**6**	**5**	**4**	**3**	**2**	**1**	**1- أخشى أن أفقد حب شريكتي.**
7	6	5	4	3	2	1	**2- كثيراً ما يقلقني أن شريكتي لن ترغب في البقاء معي.**
7	6	5	4	3	2	1	**3- أشعر بالراحة في مشاركة شريكتي أفكاري وأحاسيسي الخاصة.**
7	6	5	4	3	2	1	**4- كثيراً ما يقلقني أن شريكتي لا تحبني فعلاً.**
7	6	5	4	3	2	1	**5- كثيراً ما يقلقني أن الشريكة لا تهتم بأمري بقدر ما أهتم بأمرها.**
7	6	5	4	3	2	1	**6- كثيراً ما أتمنّى أن تكون مشاعر شريكتي تجاهي بقوة مشاعري تجاهها.**
7	6	5	4	3	2	1	**7- لا أشعر بالارتياح بالتعبير عن مشاعري للشريكة.**
7	6	5	4	3	2	1	**8 - أقلق كثيراً بشأن علاقاتي.**
7	6	5	4	3	2	1	**9- عندما اعبر عن مشاعري لشريكتي، أخاف إلا تبادلني المشاعر ذاتها.**
7	6	5	4	3	2	1	**10- أناقش عادة مشاكلي واهتماماتي مع شريكتي.**
7	6	5	4	3	2	1	**11- اللجوء إلى شريكتي في أوقات الحاجة يساعدني.**
7	6	5	4	3	2	1	**12- أخبر شريكتي عن معظم الأشياء.**
7	6	5	4	3	2	1	**13- أتباحث مع شريكتي بالأمور.**
7	6	5	4	3	2	1	**14- أصبح عصبياً عندما تتقرب الشريكة كثيراً مني.**
7	6	5	4	3	2	1	**15- يثير جنوني ألا أحصل على الدعم والعواطف اللذين أحتاجهما من شريكتي..**
7	**6**	**5**	**4**	**3**	**2**	**1**	**16- شريكتي تفهم حقاً كلاً من مشاعري وحاجاتي.**

Arabic ECR-R-16 Factorial Invariance

To ensure that the meanings of the Arabic ECR-R-16 items are interpreted similarly by Lebanese males and females, principal factor analyses were also performed separately for the sexes. The KMO values for males and females exceeded the required value of .6 (KMOs .83

and .84, respectively) and the Bartlett's Test of Sphericity reached statistical significance (p<.0001) in both cases. The principal axis extraction approach resulted in the identification of two factors in each case (eigenvalues of 3.30 and 2.72 for males and eigenvalues of 3.03 and 2.93 for females); the total variance accounted for by the two-factors being 37.2% for males and 37.3% for females. These findings support the factorial invariance of the Arabic ECR-R-16 across sex. The factor loadings of items on the two-factor solutions for males and females and descriptive statistics are presented in Table 1. As can be seen all factor loadings were above .30 for both sexes.

Arabic ECR-R-16 Internal Consistencies and Inter-correlation

The internal consistencies of the avoidant and anxious attachment subscales of the brief Arabic ECR-R-16 were α = .81 and α = .79, respectively (see Table 1), and their intercorrelations insignificant (r = -.02, ns). The internal consistencies of the Arabic ECR-R-16 based avoidant and anxious attachment dimensions for the sexes were also high (α = .81 and α = .78 for males, and α = .79 α = .80 for females).

Arabic ECR-R-16 and Arabic CES-D

Arabic CES-D scores correlated r = .21 (p < .0001) with Arabic ECR-R-16 derived avoidant attachment scores and r = .36 (p < .0001) with Arabic ECR-R-16 derived anxious attachment scores, suggesting higher depression scores being associated with higher avoidant and anxious attachment scores.

Arabic ECR-R-16 and Demographic Comparisons

Arabic ECR-R-16 avoidant attachment scores were not correlated with age (r = -.01, ns) but age was correlated weakly with anxious attachment scores (r = -.12, p <.05). Comparisons between males and females on Arabic ECR-R-16 derived scores were significant for avoidant attachment (t(1, 414) = 3.73, p < .001), males reporting higher scores than females (X=2.70 and SD=1.18 for males and X=2.29 and SD=1.08 for females), and anxious attachment scores (t(1, 414) = 2.00, p < .04), females reporting higher scores than males (X=3.79 and SD=1.32 for males and X=4.05 and SD=1.36 for females). Similarly, single Lebanese reported significantly higher than married Lebanese ECR-R-16 avoidant scores (t(1, 386) = 2.27, p<.05; X=2.62 and SD=1.16 for singles and X=2.36 and SD=1.13 for married) and anxious attachment scores (t(1, 386) = 4.05, p < .0001; X=4.19 and SD=1.34 for singles and X=3.64 and SD=1.33 for married). On the other hand, Arabic ECR-R-16 comparisons for religion and education were all non-significant.

Discussion

In the present study, the new 16 item short version of the Arabic ECR-R showed good psychometric properties. Factor analysis suggested that the brief Arabic ECR-R-16 is measuring two independent dimensions of adult attachment, namely, avoidant and anxious. While the use of the English ECR-R and other linguistic versions of the ECR-R[11,12] to measure anxiety and avoidance have been theoretically problematic because of the moderate positive correlation between anxiety and avoidance[10], the Arabic ECR-R-[16] provides assessment of two attachment styles that are not correlated, and as such their measurement by the Arabic ECR-R-[16] scale is more consistent with recent attachment models that operationalize anxiety and avoidance as orthogonal cognitive subsystems[21]. The low and non-significant intercorrelations of the two dimensions (r=-.02, ns) are contrary to the use of the International Classification of Diseases and Related Health Problems of the terms 'avoidant' and 'anxious' as synonymous descriptions of the same personality type[22]. It would seem that Lebanese in the present sample were similar to their counterparts in the United States differentiate between avoidant and anxious attachments in interpersonal relations. The two-factor structure, the low and non-significant intercorrelations of the two dimensions and their significant association with depressive symptoms support the reliability and validity of the brief Arabic ECR-R-16 as a measure of adult avoidant and anxious attachments in the Lebanese case.

There has been little focus on sociodemographic factors in previous investigations on the ECR-R. In the present study, neither education nor religion was associated with Arabic ECR-R-16 scores, suggesting the independence of these factors from the anxious and avoidant attachment styles. On the other hand, there was a weak negative correlation between age and Arabic ECR-R-16 anxiety scores but not avoidant scores, suggesting decrease in anxious attachment with age. Similarly, single Lebanese in the present study reported higher anxious and avoidant attachment than married Lebanese, suggesting more preoccupation of non-married Lebanese with attachment issues than their married counterparts. Finally, the factorial invariance of the Arabic ECR-R-16 across sex suggests that the Arabic ECR-R-16 items have the same meanings for Lebanese males and females. Comparisons of males and females on anxious and avoidant attachment styles indicate a reversed pattern of

preoccupation of the sexes with the two attachment styles. While females report higher anxious attachment, males report higher avoidant attachment, findings that are inconsistent with the lack of sex differences for a Greek sample[12]. It is possible that Lebanese females are socialized to a working model of 'self' that is preoccupied with attachment-related anxiety whereas males are socialized to a working model of 'other' that is preoccupied with attachment-related avoidance. Taken together, the demographic findings on adult attachment indicate that education and religion may not be as important factors for attachment-related working models in the case of Lebanese adults while sex, marital status and to some extent age may be predictive of adult attachment styles. More in-depth cultural studies are required to elucidate the relation between sociodemographic variations and attachment outcomes.

As a group, Lebanese adults in the present study reported a mean ECR-R-16 avoidant score of 2.48 and a mean anxious score of 3.93, indicating higher preoccupation with attachment-related anxiety than attachment–related avoidance. The mean scores for our Lebanese sample compare with scores of 2.03 for avoidant and 1.75 for anxious attachments reported for university students in the United States[10], and suggest a possible cultural difference between Lebanese and Americans. This cultural interpretation nevertheless is speculative, and requires more direct study.

In summary, the present study provides preliminary support to the value of the Arabic ECR-R-16 as a short, valid, reliable and culturally appropriate scale for assessing adult attachment in the Lebanese context. While the brevity and feasibility of the Arabic ECR-R-16 and the orthogonality of its attachment–related subscales should allow further clinical studies on attachment in Lebanon as well as facilitate cross-cultural research, the scale may not necessarily be generalizable to other Arab communities and its items may even be unacceptable if not offensive to orthodox or fundamentalist religious Arabs from Christian and Muslim faiths.

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الملخص

الأهداف: تكمن الغاية من هذه الدّراسة في تكوين صورة واضحة عن "التّجارب في العلاقات الرّومانسية (ECR-R) "ودراسة خصائصها النّفسية (السّيكومترية) في المجتمع اللّبناني. الطّريقة: خضع 418 راشدا لبنانيا في المجتمع المدني إلى 32 عينة من إل ECR-R باللّغة العربيّة. وبعد التّحليل تمّ بعدها وضع موجز من 16عينة من أل ECR-R لقياس مدى تعلّق الرّاشد على بعدين: متفادي وقلق (8 عينات لكلّ واحد). تمّت دراسة الخصائص السيكومترية لل 16 -ECR-R باللّغة العربيّة على شكل عامل التّحليل والتّماسك الدّاخلي ومدى علاقته بال CES-D باللّغة العربيّة الّذي يحدّد مدى الاكتئاب عند الشّخص. وتمت مقارنة هذه الخصائص حسب العمر والجنس و الثقافة والوضع العائلي والدّين. **النتّائج:** نتج عن عامل التحليل لل 16 -ECR-Rباللّغة العربيّة نموذجاً موْلّفاً من عاملين يمثّلان تفادي الإرتباط و القلق منه، و قد بلغ التّماسك الدّاخلي 0.81= α و 0.79=αعلى التّوالي، بالإضافة إلى مقاربته لل CES-D باللّغة العربيّة ,r=0.21 : p<0.0001 و ¬p<0.0001 ,r=0.36 على التّوالي. يؤثر العمر بشكل سلبيّ على حالة القلق (p<0. 05 ; r= -0.12) ولكن ليس على رغبة الاتّحاد، بيد أن نتائج أل 16 -ECR-R باللّغة العربيّة لم تتأثّر بالثّقافة والدّين. أظهرت الدّراسة أن الرّاشدين اللّبنانيين الذّكور هم أكثر اجتناباً للعلاقات واقلّ قلقاً من الإرتباط من نظيراتهم الإناث. والفرد اللّبناني الأعزب هو أكثر اجتناباً للعلاقات وأكثر قلقاً من الإرتباط على عكس اللّبناني المتأهّل.**الخاتمة:** يعتبر النّموذج 16 -ECR-R باللّغة العربيّة المختصر معياراً موثوقاً وفعّالاً لقياس مدى رغبة تعلّق الرّاشدين في المجتمع اللّبناني.

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العلاقة ما بين اضطراب شَدة ما بعد الصدمة و منظور الزمن

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The relationship between posttraumatic stress disorder and Time Perspective

Slimane Djarallah, Mohamed Seghir Chorfi

Abstract

The study aims to explore the lack of harmony in implementing the content of the time record from past, present and future, and their dimensions, following the exposure to traumatic events. A pilot study of 162 students who were exposed to the danger of flood is used to study the psychometric characteristics of Impact of Event Scale-Revised IES-R- Arabic version. The main sample consist of 108 persons (Age 18 to 30, m=25.58, sd= 3.34, 56.5 % female) composed from three subgroups with 36 participant for each. The First subgroup: with post-traumatic stress disorder (PTSD) diagnosed by psychiatrists. The second subgroup: without PTSD. The third subgroup: have not been exposed to traumatic events which influenced their psychological life. They all completed the test of Impact of Event Scale-Revised IES-R and Zimbardo Time Perspective Inventory (ZTPI). The factor analysis of the IES-R Arabic version showed that all items belong to their own factors. Reliability score of all subscales exceed 0.69. The first subgroup shows high scores in Past-Negative and Present-fatalistic dimensions, and low scores in Future and Past-Positive dimensions, but the second and third subgroups scored the contrary. One Way-ANOVA test showed significant differences between the three subgroups in all time perspective (TP) dimensions except in Present-pleasant orientation. The linear regression model showed that there is a linear relationship between the dependent variable PTSD and TP as predictor ($R^2 = 0.73$, $F(2, 106) = 58.63$, $p < 0.001$). **The results:** the study suggests the balance in implementing the content of time record may help to protect against PTSD and other psychological effects after the exposure to traumatic events.

ملخص

هدفت الدراسة إلى الكشف عن اختلال تناسق توظيف محتوى السجلات الزمنية من ماضٍ وحاضر و مستقبل و أبعادهما الفرعية، بعد التعرض لأحداث صادمه. استعملت عينة استطلاعية من 162 تلميذاً تعرضوا لخطر الفيضان منً أجل الوصول للخصائص الإحصائية لإختبار إجهاد الصدمة ، بعد ترجمته للغة العربية. شملت عينة الدراسة الأساسية 108 فرداً، وتكونت من ثلاث مجموعات فرعية في كل منها 36 فرداً. تراوح العمر بين 18 و 30 سنة (م = 25.58±3.43، إناث 56.5%). المجموعة الأولى: تم تشخيصهم كحالة اضطراب شدة ما بعد الصدمة من قبل اختصاصيين في الطب النفسي، والمجموعة الثانية: من المتعرضين لحوادث صادمة والمجموعة الثالثة: من غير المتعرضين لأحداث صادمه. أظهر التحليل العاملي الكشفي تمييز اختبار إجهاد الصدمة المنقح بين العوامل الثلاثة المستخرجة (تكرار معايشة الحدث، التجنب، فرط الإثارة)، و يتمتع أيضاً بثبات جيد. و أظهرت نتائج اختبار قائمة زمباردو لمنظور الزمن ارتفاع درجات متوسطات بعدي الماضي السلبي و الحاضر الحتمي و انخفاض في بعدي الماضي الإيجابي و المستقبل ، بينما أظهرت عكس ذلك لدى أفراد المجموعتين الفرعيتين الثانية والثالثة. كشف تحليل التباين الأحادي عن وجود فروق دالة إحصائياً بين المجموعات الفرعية الثلاثة ما عدا في بعد الحاضر الممتع.لا توجد فروق حسب الجنس أو السن في العينة الكلية. و أوضح نموذج تحليل الإنحدار الخطي وجود علاقة قوية بين المتغيرات، و أن أبعاد منظور الزمن تنبئ بخطر الإصابة بإضطراب شدة ما بعد الصدمة (ر^2= 0.73، ف (5،102) = 58.63، دالة عند مستوى اقل من 0.001). خلصت الدراسة إلى أن إتزان توظيف محتويات السجلات الزمنية يساعد على تجنب السلوكات التي يكمن فيها خطر على الصحة النفسية عموماً.

الكلمات المفتاحية: الصدمة النفسية، مقياس إجهاد الصدمة المنقح، منظور الزمن، قائمة زمباردو لمنظور الزمن، البالغين.

تصريح الدعم أو المصلحة: لا يوجد

مقدمة

يمثل الضغط النفسي جزءاً من حياة الأفراد. و يعتبر هوتيكات [17] أن الضغط النفسي ظاهرة عمّت جميع مجالات حياتنا. إن تعرض الفرد لحدث صادم أو عدة حوادث، وعندما تكون قد تجاوزت هذه الصدمات قدرا ته على التكيف معها تؤدي إلى اضطرابات نفسية مختلفة، خاصة اضطراب شدة ما بعد الصدمة. و قد بلغت نسبة انتشارها في المجتمع الجزائري (37.4%) و كمبوديا (28.4%) و إثيوبيا (15.8%)، و قطاع غزة (17.8%) [20]. تناولت الدراسات علاقة الصدمة النفسية بالعديد من المتغيرات النفسية المعرفية و السلوكية كونها من الإضطرابات النفسية المعقدة كما هي تعقيدات مضاعفاتها النفسية و البدنية والإجتماعية[10].و في خضم ذلك برزت علاقتها بمفهوم الزمن وتحديداً بمنظور الزمن في العديد من الأبحاث العلمية. و تتضح هذه العلاقة أكثر، إستناداً إلى الأعراض الأساسية الواردة في الدليل الإحصائي التشخيصي[5] (DSM IV-TR). نجد هناك علاقة واضحة بينها وبين حالة التوجه نحو السجلات الزمنية. حيث فرط الإثارة الحاضرة و تكرار معايشة خبرات الصدمة الماضية والتجنب المسبق لكل ما يذكّر المصدوم بالخبرة المؤلمة والتشاؤم من المستقبل. عندها لا يستطيع المصاب باضطراب شدة ما بعد الصدمة أن يهتدي بمعالمه الزمنية. تخلف الكارثة آثاراً طويلة الأمد من بينها اضطراب التوجه في الزمان والمكان[3]. إن كل أشكال الأحكام والأفكار و العلاقة بالأشياء والمحيط ومعنى الواقع و كل الوظائف النفسية الأخرى مرتبطة بالزمن [29].

في سياق وجهة نظر لوين[23]، الذي عرف منظور الزمن بأنه "مجمل نظرة الفرد للحظة محددة حول مستقبله و ماضيه النفسي"، أسس زمباردو و بويد[37] نظريتهما (وضع مفهوم الزمن في منظور) حيث اعتبرا أن هذا المفهوم يرتبط بالتفضيل المعرفي لدى الفرد و يمثل الطريقة التي تقسم بها مجريات الأحداث الواقعة والخبرة داخل أطر زمنية (الماضي، والحاضر والمستقبل)، ويدل على الحالة النفسية والسلوكية و الإنفعالية و العلائقية من خلال توظيف محتويات السجلات الزمنية التي قسمها إلى خمسة أبعاد: ماضٍ إيجابي (الإعتماد على الخبرات والمشاعر الإيجابية)، ماضٍ سلبيٍ (التوجه نحو تنشيط العواطف والمشاعر السلبية المرتبطةً بالماضي)، مستقبل (حالة التوجه نحو تحقيق الأهداف المستقبلية

التي يتصورها الفرد و يخطط من أجل تحقيقها)، حاضر ممتع (البحث عن أحاسيس مؤثرة وممتعة، التي تطغى على حاضر الشخص.)، وأخيراً حاضر حتمي (معالجة الموقف حسب ما يقتضيه الأمر أو الإنقياد و الاستسلام و الاعتقاد بحتمية وقوعه). و تختلف أسس هذه النظرية بكونها تدخل ضمن رافد علم النفس الإيجابي عن النظرية المعرفية لـ "بيك"[7] التي تعتمد أساساً على الإعتقادات الذاتية السلبية لدى الفرد (النظرة السلبية نحو ذاته، نحو بيئته، نحو مستقبله) واستعداد الفرد للإصابة بالإكتئاب. يمكن اعتبار هذه النظرة و فق مصطلح منظور الزمن بأنها توجه نحو سجلات زمنية في أبعادها السلبية.

لقد تلي و ضع مفهوم الزمن في منظور أبحاث عديدة و تكاملت نتائجها، و أسست جانباً هاماً من مفهوم الزمن النفسي. الذي يمكن قياسه من خلال مصطلح "منظور الزمن"، لمعرفة دوره في العمليات المعرفية و توظيف المعلومات المكتسبة لدى الفرد و في العديد من الإضطرابات النفسية [8,15, 11,14,21, 33] و السلوكات التي تكمن فيها أخطار صحية[12,18,20,13, 28, 27,31,32,35, 36] .بينما تركزت الدراسات الأولى حول منظور زمن المستقبل[1]، و أخرى حول مفهوم الزمن عموما في الإضطرابات الذهانية[22].

إن الخبرات المؤلمة التي يمر بها الفرد مثل الحروب، الأمراض، البطالة والكوارث لها علاقة بمنظور الزمن. ومن بين أثار الصدمة النفسية انقطاع تناغم نظام توظيف منظور الزمن و اضطراب معنى السلوكات من حيث أنها لها بعد زمني[30]. و في حالات التعرض لخبرات مؤلمة، فإن التوجه نحو سجل الماضي السلبي هو المسيطر"الإجترار السلبي للماضي" [19]. إن تأثير صدمة الإصابة بمرض مزمن كما في حالة داء السكري المرتبط بالأنسولين يؤدي إلى تغير نوعية التوجه نحو منظور زمن المستقبل [24]. يعتبر منظور الزمن كعامل له علاقة بحالات الهلع و الإضطرابات النفسية[13]، حيث ارتفاع درجة التوجه نحو بعد الماضي السلبي لدى الأفراد الذين هم في حالة نفسية مضطربة، بينما ينخفض لديهم التوجه نحو بعد الماضي الإيجابي، كما أن مستوى عدم الإستقرار النفسي يرتبط سلباً مع درجة التوجه نحو بعد المستقبل. بينما تباينت نتائج أغلب الدراسات التي تناولت علاقة منظور الزمن بالمتغيرات الشخصية خاصة منها الجنس و السن [13،25]. و يعرف إجرائياً منظور الزمن و أبعاده بأنه اتزان درجة التوجه نحو كل منها، و أنه كلما ارتفعت درجة متوسط كل بعد أو انخفضت، فإن ذلك يدل على درجة ارتفاع أو انخفاض اعتماد التوجه عليه.

أهمية هذه الدراسة تتمثل في التعرف على الفروق الفردية في درجة التوجه نحو أبعاد منظور الزمن و علاقتها باضطراب شدة ما بعد الصدمة، من خلال عينة من البالغين في المجتمع الجزائري. تهدف إلى الكشف على نوعية التوجه في توظيف السجلات الزمنية لدى الأفراد المصابين وغير المصابين منهم مما ساعدهم على الحفاظ على توازنهم النفسي. و كذلك محاولة معرفة دور أبعاد منظور الزمن في اتخاذ القرارات و إصدار السلوكات التي توجّه التفاعلات بين الفرد ومحيطه. وبالتالي مدى درجة تنبؤها بالإصابة باضطراب شدة ما بعد الصدمة في حالة التعرض لأحداث صادمة. مما يساعدنا على اعتمادها في الوقاية أو في بناء برامج علاجية نفسية للتكيف مع الصدمة النفسية.

إجراءات الدراسة

اعتمدت الدراسة على المنهج الوصفي الإرتباطي المقارن، لدراسة العلاقة بين عدد كبير من المتغيرات في دراسة واحدة[2]. أجريت الدراسة في الفترة الممتدة من 20 ابريل/نيسان/افريل 2008 إلى 15 حزيران/يونيو/جوان 2009، في كل من المجمع الصحي و مركز مساعدة ذوي المصابين بالأمراض النفسية و في مؤسسة إعادة التربية و التأهيل بآريس- باتنة -الجزائر.واستعمل برنامج الحزم الإحصائية SPSS.V 18.0. لمعالجة البيانات.

العينة

شملت الدراسة على عينتين، الأولى استطلاعية لدراسة الخصائص السيكومترية الإحصائية لسلم إجهاد الصدمة المنقح، و تكونت من162 تلميذاً من السنة الثالثة ثانوي ممن تعرضوا لخطر الفيضانات التي حدثت في مدينة متليلي بولاية غرادية بالجزائر بتاريخ 2008/09/30. تراوح سنهم بين 18 و 30 سنة (م=18.81±0.90، الإناث 57.4). أجري تطبيق الإختبار في الأسبوع الثالث بعد التعرض لحدث الصدمة، في كل من ثانويتي بن بيتور و الثانوية التقنية. العينة الثانية الخاصة بالدراسة الأساسية، شملت108 فرداً وتكونت من ثلاث عينات فرعية في كل منهما 36 فرداً. تم اختيار العينة الفرعية الأولى من ضمن الذين تم تشخيصهم كحالة اضطراب شدة ما بعد الصدمة من قبل اختصاصيين في الطب النفسي ويتابعون علاجهم في مركز الصحة النفسية. بينما أفراد العينتين الفرعيتين الثانية والثالثة فقد تم اختيارهما من ضمن الأشخاص الذين تقدموا للحصول على شهادات طبية صحية عامة في المجمع الصحي بآريس ولاية باتنة لإستعمالها في الملفات الإدارية المختلفة و قبولهم الإجابة على أداتي الدراسة، و ذلك بعد إقرار الشخص بتعرضه أو عدم تعرضه لخبرة مؤلمة منذ أكثر من شهر على الأقل و أنه لا يعاني من اضطرابات نفسية أخرى.

أدوات البحث

اختبار إجهاد الصدمة المنقح : (Revised Impact of Events Scale "IES-R") من إعداد وايس و مارمر [34] (1997)، و يشمل كل الأعراض الواردة في معايير التشخيص التي أعتمدت في الدليل الإحصائي التشخيصي الثالث (DSM.III-) حول حالة رد فعل الصدمة الحاد أو اضطراب شدة ما بعد الصدمة. يحوي الإختبار على 22 عبارة، يتم تصحيحها وفق سلم ليكرت (0=أبداً إلى 4=دائما). تقيس ثلاثة أبعاد: تكرار معايشة الحدث (8 بنود)؛ تجنب الخبرة المعاشة (8 بنود)؛ فرط الإثارة (6 بنود). يتميز المقياس في نسخته الأصلية بخصائص سيكومترية جيدة[34]. يمكن إستعمال متوسط درجة كل بعد لتقييم درجة إجهاد الصدمة. وتختلف نتائج الدراسات [6، 9، 34] حول نقطة القطع أو التحول[6، 9] فقد تراوحت بين 1.36 و 1.63. وفي بحثنا هذا كانت 1.63 الموافقة لقيمة 36 من الدرجة الخام.

تمت ترجمة المقياس من قبل مختص في اللغة الإنكليزية. ثم تطبيق الإختبار على عينة صغيرة من 12 فرداً لمعرفة مدى وضوح التعليمات و محتوى العبارات. و عرضت النسخة المترجمة على أربعة من الإختصاصيين في علم النفس و الإختصاصيين في الطب النفسي لإبداء ملاحظاتهم حول صياغة بنود الإختبار و مدى تعبيرها عن كل من الأبعاد الثلاثة. وبعد الأخذ بإقتراحاتهم تمت إعادة صياغة بعض العبارات. وعرضت هذه القائمة على مختص في اللغة الإنكليزية للقيام بالترجمة العكسية، و تبين حسن تطابقها مع النسخة الأصلية و الحفاظ على الأمانة العلمية. و قد طلبنا الإذن من مؤلف المقياس من اجل إجراء ترجمته إلى اللغة العربية.

قائمة زامباردو لمنظور الزمن: (The Zimbardo Time Perspective Inventory) (ZTPI) من إعداد زامباردو و بويد[37] (1999) التي تمت ترجمتها و تقنينها للبيئة العربية من طرف جارالله و شرفي [4] (2009)، بعد الموافقة على طلب الترجمة. تحوي النسخة الأصلية وفي صورتها باللغة العربية على 56 بنداً، تقيس خمسة أبعاد. لها خصائص إحصائية مقبولة، ألفا كرونباخ لكل الإختبار (0.81) وفي الأبعاد الفرعية الخمسة تراوحت بين 0.69 و 0.83.أما في الثبات عبر الزمن فتراوحت معاملات الإرتباط بين 0.65 و 0.87. نتائج التحليل العاملي بينت صدق بناء بنود الإختبار، و بلغت قيمة مؤشر ملاءمة النتائج للتحليل العاملي 0.74 و فسرت العوامل الخمسة ما نسبته (34.52%) من التباين.

النتائج

الخصائص ا لأحصائية لمقياس إجهاد الصدمة المنقح.

الصدق: إستخدم التحليل العاملي الكشفي، واعتمدت طريقة المكونات الأساسية و القيام بتدوير العوامل تدويراً متعامداً Varimax-Rotation؛ و تم استخراج ثلاثة عوامل عند قيمة الجذر الكامن "1".و قد حدد أدنى معيار التشبع الجوهري للبند على العامل (0.30)، و هي القيمة الأكثر استعمالاً. بلغ مؤشر الملاءمة (KMO=0.86) ، و فسرت نسبة (47.49%) من التباين (جدول) 1.

جميع البنود تشبعت على عامل واحد على الأقل و العديد منها تشبع على أكثر من عامل. يفسر ذلك بتداخل الأعراض السريرية و صعوبة فصلها تماما عن بعضها بوضوح. من الناحية النفسية، فإن ذلك يدل على وجود ارتباط بين الأعراض لدى الفرد، و بالتالي ارتباطها بنفس العامل [9]. تشبع البند 5 على العوامل الثلاثة، كما تشبع إيجاباً ثلاثة عشر بنداً على عاملين، بينما تشبعت ثمانية بنود على عامل واحد فقط. و يمكن الإحتفاظ بالبنود المتشبعة على أكثر من عامل ضمن العامل الملحق لها ما دامت قيمة تشبعها أكبر من (0.30) وأن دلالة محتوى عبارة البند له نفس دلالة العامل و ما يقيسه.

العامل الأول: تكرار معايشة الحدث (نسبة تباين 16.11، جذر كامن=6.98) و يحوي كل من البنود 1، 2، 3، 6، 9، 14، 16، 20. و تراوحت قيمة تشبع البنود بين 0.38 و 0.69.

العامل الثاني: التجنب (نسبة تباين 15.91، جذر كامن=2.04) و يشمل كل من البنود 5، 7، 8، 11، 12، 13، 17، 22. و تراوحت قيمة تشبع البنود بين 0.30 و 0.73.

العامل الثالث: فرط الإثارة (نسبة تباين 15.47، جذر كامن=1.44) و يحوي كل من البنود 4، 10، 15، 18، 19، 21. أعلى نسبة تشبع 0.79 على البند 18، و أدنى قيمة 0.36 على البند 21.

الثبات: معاملات ألفا كرونباخ تراوحت بين 0.78 و 0.80 و في كل الإختبار 0.89. قيم معاملات الإرتباط بين تطبيق وإعادة تطبيق الإختبار بعد أسبوع على عينة من 28 تلميذاً كانت مرتفعة (جدول 1). فالأداة تتمتع بثبات مقبول. و في النسخة الأصلية[34]، معاملات ألفا كرونباخ تراوحت بين 0.85 و 0.92 و في كل الإختبار بلغ 0.84.

جدول رقم (1): تشبعات البنود على العوامل الثلاثة لمقياس إجهاد الصدمة المنقح، معاملات الفا كرونباخ، معاملات الإرتباط وإعادة تطبيق الإختبار

	البنود	العامل 1 معايشة	العامل 2 التجنب	العامل 3 فرط الإثارة
1	كل تذكر للحدث يولّد مشاعر خاصة به.	**0,63**	0,36	
2	لدي اضطراب في النوم.	**0,57**		
3	مازالت اشياء كثيرة تجعلني أفكر في الحدث.	**0,69**		
4	شعرت بتهيج و غضب شديد .	0,36		**0,49**
5	أتجنب ما يثير انفعالي عندما أكون في حالة إعادة التفكير في الحدث أو يذكرني به أحد.	0,40	**0,34**	0,34
6	دون رغبة مني، أكرر و أعيد التفكير في الحدث.	**0,69**		
7	لدي انطباعاً بأن هذا الحدث لم يقع قط أو لم يكن حقيقياً.		**0,30**	
8	بقيت مُبتعداً عن أي شيء يجعلني أفكر في الحدث.		**0,60**	
9	برزت في ذهني صوراً عن الحدث.	**0,66**		
10	كنت متوتراً و انتابتني نوبات هيجان.		0,33	**0,74**
11	حاولت أن لا أفكر في الحدث.		**0,66**	
12	أعرف أنه ما زالت لدي الكثير من مشاعر التوتر إزاء الحدث، لكنني لم أواجهها.	0,41	**0,57**	
13	أحاسيسي نحو الحدث، بقيت كما هي أثناء وقوعه.		**0,59**	
14	قمتُ برد فعل و أحسستُ بالأشياء كما لو أنني مازلت في وقت الحدث .	**0,44**		0,42
15	كان عندي صعوبة في الخلود إلى النوم.	0,56		**0,40**
16	شعرت بنوبات من الأحاسيس الشديدة إزاء الحدث .	**0,49**	0,44	
17	حاولت أن أمحيها من ذاكرتي.		**0,73**	
18	كان عندي مشكلة في التركيز.		0,32	**0,79**
19	ما يذكرني بالحدث، يسبب لي ردود فعل بدنية، مثل التعرق ، ضيق التنفس، الغثيان أو خفقان القلب.		0,35	**0,72**
20	أثناء النوم، أحلم بوقائع الحدث.	**0,38**		0,66
21	بقيت في حالة حذر و ترقّب .		0,37	**0,36**
22	حاولت أ ن لا أتكلم عن الحدث.		**0,61**	0,40
	% تفسير التباين	*16.11*	*15.91*	*15.47*
	قيمة الجذر الكامن	*6,98*	*2,04*	*1,44*
	ألفا كرونباخ (كل الإختبار= 0.89)	*0.79*	*0.78*	*0.80*
	اعادة تطبيق (كل الإختبار= 0.90)	*0.85*	*0,87*	*0,87*

الخصائص الديموغرافية و قيم نتائج الإختبارات

تراوح سن أفراد عينة الدراسة الأساسية من 18 إلى 30 سنة (المتوسط=25,58)، أما الإنحراف المعياري=3,34، (الإناث 56,5%).صنفت حسب السن إلى فئتين، الأولى (18-25) سنة و الثانية (26-30) سنة و.يوضح (الجدول 2) نتائج تطبيق أداتي الدراسة. درجة متوسط العينة الفرعية الأولى المشخص لديهم اضطراب شدة ما بعد الصدمة بلغ 0,3±2,46 على سلم إجهاد الصدمة المنقح، و لدى المتعرضين بدون أعراض 1.17؛ بينما

لدى غير المتعرضين للصدمة 0.27 .نتائج تطبيق قائمة زمباردو لمنظور الزمن لدى العينات الفرعية الثلاثة، أظهرت إرتفاع درجات متوسطات بعد الماضي السلبي 0,5±3,96 و الحاضر الحتمي 0,57±3,42 لدى أفراد عينة المتعرضين للصدمة و يعانون من اضطراب شدة ما بعد الصدمة. بينما انخفضت درجات متوسط اتهما لدى أفراد كل من العينة الفرعية الثانية(متعرضين للصدمة وبدون أعراض اضطراب شدة ما بعد الصدمة و العينة الثالثة من غير المتعرضين للصدمة.

جدول (2): قيم نتائج الإختبارات لدى العينات الفرعية الثلاثة و العينة الكلية

المجموعات	متعرضين بأعراض	متعرضين بدون أعراض	غير متعرضين	كل العينة
سلم إجهاد الصدمة المنقح (م±ع)				
تكرار معايشة	0,53 ±2,49	0,44 ± 1,26	0,22 ± 0,31	**0,99 ± 1,35**
فرط إثارة	0,56 ± 2,48	0,54 ± 0,81	0,18 ± 0,17	**1,08 ± 1,16**
تجنب	0,5 ± 2,41	0,55 ± 1,32	0,22 ± 0,29	**0,98 ± 1,34**
كل الإختبار	0,3 ± 2,46	0,3 ± 1,17	0,12 ± 0,27	**0,94 ± 1,3**
قائمة منظور الزمن (م±ع)				
ماضي سلبي	0,5 ± 3,96	0,39 ± 3,03	0,34 ± 2,26	**0,81 ± 3,08**
حاضر ممتع	0,55 ± 3,22	0,5 ± 3,49	0,49 ± 3,06	**0,54 ± 3,26**
مستقبل	0,5 ± 2,64	0,45 ± 3,78	0,42 ± 3,73	**0,69 ± 3,38**
ماضي إيجابي	0,67 ± 2,52	0,6 ± 3,79	0,31 ± 3,62	**0,79 ± 3,31**
حاضر حتمي	0,57 ± 3,42	0,66 ± 2,81	0,54 ± 2,52	**0,7 ± 2,92**

م=متوسط، ع=انحراف معياري

إن إرتفاع درجة متوسط كل من بعد الماضي الإيجابي0,6±3,79 و بعد المستقبل 0,45±3,78 لدى أفراد عينة المتعرضين للصدمة بدون أعراض هي أقرب إلى درجات متوسطات أفراد عينة الغير متعرضين للصدمة. عكس ما هي عليه لدى أفراد عينة المتعرضين للصدمة و لديهم أعراض اضطراب شدة ما بعد الصدمة، حيث درجة متوسط بعد المستقبل 0,5±2,64 و الماضي الإيجابي 0,67±2,52. أما درجات متوسطات بعد الحاضر الممتع في كل من العينات الفرعية الثلاثة متقاربة، تراوحت بين 0,49±3,06 و 0,5±3,49.

الفروق في التوجه نحو أبعاد منظور الزمن

استعمل تحليل التباين الأحادي لدراسة الفروق في درجات متوسطات التوجه نحو كل من الأبعاد الخمسة لمنظور الزمن بين العينات الفرعية الثلاثة. تبين النتائج (الجدول 3) أن قيم "ف" كلها ذات دلالة إحصائية عند مستوى أقل من 0.001، و في بعد الحاضر الممتع فهي دالة عند مستوى أقل من0.01. مما يعني أنه توجد فروق بين متوسطات درجات أبعاد منظور الزمن بين العينات الفرعية الثلاثة في تفضليهم التوجه نحو كل منهما، و هي فروق أصيلة.

استخدام اختبار "شيفيه" للمقارنات البعدية، الذي أوضح أن الفروق في درجة متوسطات أبعاد منظور الزمن بين أفراد العينات الفرعية الثلاثة دالة إحصائياً عند مستوى أقل من 0.05. فهي لصالح كل من العينتين اللتين أفرادهما لا يعانون من اضطراب شدة ما بعد الصدمة في كل من بعد المستقبل و بعد الماضي الإيجابي. وذلك يوضح دور توظيف محتويات هذه الأبعاد في تخطي أثر الصدمة النفسية من خلال استمرار الإعتماد على الأفكار الإيجابية التي اكتسبها الفرد و السعي لتحقيق الأهداف و المخططات المستقبلية. بينما الفروق في بعد الماضي السلبي و بعد الحاضر الحتمي فهي لصالح عينة المصابين باضطراب شدة ما بعد الصدمة. مما يدل على حالة اجترار الماضي وتثبيط للمستقبل، إضافة إلى الإنقياد و الإعتقاد بحتمية و قوع الأحداث التي تحصل في الحاضر وعدم المبادرة بمعالجة الموقف حسب ما يقتضيه الأمر. كما توجد أيضاً فروق بين كل من أفراد عينة المتعرضين بدون أعراض الصدمة و عينة غير المتعرضين للصدمة في كل من بعد الماضي السلبي و بعد الحاضر الممتع وهي لصالح عينة المتعرضين بدون أعراض الصدمة. نظراً لكون أفراد هذه العينة مازالت متأثرة بالحدث المؤلم الذي تعرضت له، و أن بعض آثارها لم تمحى بعد، لكن لم تؤثر على حياتهم النفسية.

جدول (3): الفروق بين مختلف المجموعات في درجات متوسطات أبعاد منظور الزمن

	الجنس	السن	العينات الفرعية الثلاثة	اختبار شيفيه		
أبعاد منظور الزمن	**ت(1، 106)**	**ت(1، 106)**	**ف (2، 105)**		**بدون أعراض**	**غير متعرضين**
ماضي سلبي	0,005	1,312	***152,451	**متعرضين**	* 0,93	***1,70**
				بدون أعراض	-	***0,77**
حاضر ممتع	0,141	0,917	**6,492	**متعرضين**	0,28	**0,15**

			بدون أعراض	-	**0,43**
مستقبل	-0,533	-0,186	***71,139	متعرضين	*1,14	**1,09**
			بدون أعراض	-	**0,05**
ماضي ايجابي	-0,041	0,601	***56,101	متعرضين	*1,27	**1,10**
			بدون أعراض	-	**0,17**
حاضر حتمي	1,227	0,126	***21,863	متعرضين	*0,61	**0,91**
			بدون أعراض	-	**0,29**

*دال عند مستوى> 0.05، **دالة عند مستوى >0.01، *** دال عند مستوى> 0.001.

تبين أيضاً نتائج (الجدول 3) ان قيم "ت" كلها غير دالة إحصائياً. لا توجد فروق في كل من الأبعاد الخمسة لمنظور الزمن التي تعزى إلى الجنس أو التي تعود إلى فئتي السن بين أفراد العينة الكلية. و توافق بدرجة كبيرة ما ورد في دراسة ملفانت [25] حول الفروق بين الإناث والذكور ماعدا في بعد الماضي السلبي. كما تتوافق مع نتائج دراسة فيولان و ابستولديس، أولفيتو[13]حول الفروق التي تعود إلى اختلاف السن في درجة اعتماد الأبعاد الخمسة لمنظور الزمن ما عدا في بعد الحاضر الممتع. بينما لا تتوافق مع تلك التي وردت في دراسات زمباردو و بويد[37]،حيث أن عينة هذه الدراسة شملت فئات عمرية مختلفة (من 16 إلى 62 سنة).

أثر أبعاد منظور الزمن على الإصابة بإضطرابات شدة ما بعد الصدمة

تبين معاملات الإرتباط بين المتغيرات (جدول 4)على وجود علاقة ارتباط قوية بين أبعاد منظور الزمن كمتغيرات مستقلة و درجة إجهاد الصدمة كمتغير تابع. حيث أظهر نموذج تحليل الإنحدار الخطي المتعدد و بطريقة "الإدخال" للمتغيرات المستقلة بأن أبعاد منظور الزمن تنبئ بدرجة الإصابة بإجهاد الصدمة ماعدا بعد الحاضر الممتع، ارتبط إيجاباً في كل من بعد الماضي السلبي(0.823) و الحاضر الحتمي مع درجة إجهاد الصدمة. بينما ارتبط سلباً كل من بعد المستقبل (-0.625) و بعد الماضي الإيجابي (-0.625) وكل القيم دالة عند مستوى أقل من 0.001.هذه العلاقة توضح قدرة المتغيرات المستقلة على التنبؤ بدرجة الإصابة بإجهاد الصدمة. و أن نموذج العلاقة التأثيرية لكل أبعاد منظور الزمن فسرت 0.729 من تباين درجة إجهاد الصدمة، ف(5 ، 102) =58.63؛ مستوى الدلالة أقل من 0.001.

جدول (4): معاملات الإرتباط بين أبعاد منظور الزمن و إجهاد الصدمة، نتائج تحليل الإنحدار.

النموذج	ر	β	ت	مستوى الدلالة
(الثابت)		-	1.400	0.05<
ماضي سلبي	0.823	0.670	9.372	0.001>
حاضر ممتع	0.072	-0.034	-0.643	0.05<
مستقبل	-0.625	-0.191	-2.709	0.01>
ماضي إيجابي	-0.625	-0.154	-2.344	0.05>
حاضر حتمي	0.479	-0.037	-0.561	0.05<
ملخص تحليل الإنحدار : $ر^2$ = 0.729،ف (5، 102) = 58.630***				

***دال عند مستوى> 0.001.

للأحداث والإنقياد لما يحدث دون بذل أي جهد فكري أو نشاط حركي.

بَعْد المستقبل له علاقة قوية مع بعد الماضي الإيجابي، في حالة ارتفاع درجتيهما يتضح دور كل منهما في استمرار تناغم ربط الماضي بالمستقبل[16]. أما في حالة انخفاض درجة التوجه نحوهما فهذا يؤدي إلى استمرار المعاناة من أعراض المرض و ديمومته، و هو ما تم التعرف عليه لدى عينة الأفراد المصابين باضطراب شدة ما بعد الصدمة. بينما دور التوجه نحوهما و ارتفاع درجة تفضيلهما لدى الأفراد المتعرضين للصدمة بدون أعراض إضطراب شدة ما بعد الصدمة ساعدهم في المحافظة على استمرار نشاطهم من أجل تحقيق أهدافهم و مخططاتهم المستقبلية، أي أنهم مثل أفراد عينة غير المتعرضين للصدمة النفسية. وهذا يدل على مدى أهميتهما في التغلب على الخبرة المؤلمة و استمرار نشاط الحياة المعتاد لدى الفرد بصورة سليمة.

تفضيل التوجه نحو بعد الحاضر الممتع درجاته متقاربة جداً في كل من العينات الثلاثة[26]. يدل ذلك لدى فئة المتعرضين للصدمة على محاولة إضفاء بعض الإثارة على حياتهم للتخلص من الأعراض التي يعانون منها. بينما لدى أفراد العينتين الثانية والثالثة على تحقيق رغبات ممكنة والتمتع بما يقومون به.

تدل هذه النتائج على أن ارتفاع درجة توجه الفرد نحو اعتماد محتويات سجل الماضي السلبي من جهة، و انخفاض توجهه نحو اعتماد محتويات كل من سجل الماضي الإيجابي و سجل المستقبل من جهة أخرى يؤدي إلى ارتفاع خطر الإصابة.

المناقشة

أوضحت هذه الدراسة أن التوجه نحو بعد الماضي السلبي أكبر دال على أثر الصدمة النفسية وهو ما يوافق كل الدراسات التي أقرّت باجترار الماضي السلبي لدى ضحايا الصدمات النفسية[19]. بينما ارتفاع درجته لدى عينة المتعرضين لحدث صادم و بدون أعراض مقارنة بغير المتعرضين فهو يدل على أن الخبرة الأليمة التي عايشها الفرد لم تمحى آثارها و إنما الفرد قد تقبلها وتكيف معها.أما ارتفاع درجة التوجه نحو بعد الحاضر الحتمي لدى فئة المتعرضين للصدمة بالمصابين باضطراب شدة ما بعد الصدمة و انخفاضه لدى عينة المتعرضين للصدمة النفسية بدو ن أعراض و عينة غير المتعرضين للصدمة، يدل من الناحية النفسية المعرفية لدى العينة الأولى على حالة عجز التركيز وضعف التفكير لإتخاذ القرارات المناسبة للمواقف وتدبير شؤونهم اليومية وبالتالي الإستسلام

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وكشفت نتائج البحث أنه لا توجد فروق في درجة اعتماد منظور الزمن بين الذكور و الإناث و بين فئتي السن في العينة الكلية. مما يعكس نوعية المعلومات المعرفية والسلوكات التي يميل الأفراد إلى توظيفها.وكذلك النشاط النفسي المعرفي في التعامل مع الأحداث الخطيرة و التكيف أو عدم التكيف مع الواقع يكون بنفس نوعية التوجه نحو توظيف المكتسبات المعرفية في أبعاد السجلات الزمنية الثلاثة، و لا يرتبط بنوع الجنس أو السن.

تحليل التباين الأحادي كشف عن وجود فروق بين متوسطات درجات أبعاد منظور الزمن بين العينات الفرعية الثلاثة في تفضليهم التوجه نحوها.قيم "ف" كلها ذات دلالة إحصائية عند مستوى أقل من 0.001، و في بعد الحاضر الممتع فهي دالة عند مستوى أقل من 0.01. أظهر إختبار "شيفيه" للمقارنات البعدية أن درجة التوجه نحو كل من بعد المستقبل و بعد الماضي الإيجابي هي لصالح كل من العينتين اللتين أفرادهما لا يعانون من اضطراب شدة ما بعد الصدمة. توظيف محتويات هذه الأبعاد يساهم في المواجهة و التكيف مع الصدمة النفسية من خلال استمرار الإعتماد على الأفكار الإيجابية التي اكتسبها الفرد و السعي لتحقيق الأهداف و تنفيذ المخططات المستقبلية. بينما الفروق في بعُد الماضي السلبي و بعد الحاضر الحتمي فهي لصالح عينة المصابين بإضطراب شدة ما بعد الصدمة. مما يدل على حالة تأثير الذكريات الماضي الأليم و تحجر المستقبل، مع حالة الإستسلام و الإعتقاد بحتمية و قوع الأحداث وفقدان المبادرة . توجد أيضا فروق في التوجه نحو كل من بعد الماضي السلبي و بعد الحاضر الممتع بين أفراد عينة المتعرضين و بدون أعراض الصدمة و عينة غير المتعرضين للصدمة و هي لصالح عينة المتعرضين و بدون أعراض الصدمة التي مازالت تتذكر من حين لآخر حدث الصدمة الذي تعرضت له.

أظهرت نتائج تحليل الإنحدار أن أبعاد منظور الزمن لها قدرة التنبؤ باضطراب شدة ما بعد الصدمة أو التكيف مع الأحداث الصادمة في حالة التعرض لها. حيث أن ارتفاع درجة توجه الفرد نحو اعتماد محتويات سجل الماضي السلبي يؤدي إلى ارتفاع خطر الإصابة، و أن انخفاض توجه الفرد نحو اعتماد محتويات كل من سجل الماضي الإيجابي و سجل المستقبل يؤدي أيضاً إلى ارتفاع خطر الإصابة باضطراب شدة ما بعد الصدمة، مما يوضح دور توازن توظيف منظور الزمن في الحفاظ على الحالة الصحية النفسية، و كذلك في التنبؤ بالسلوكات التي تكمن فيها أخطار صحية.

رغم إقتصار الدراسة على عينة صغيرة و في منطقة محددة، فإن الإحاطة بتعقيدات الصدمة النفسية بما في ذلك التعرف على نوعية التوجه في توظيف محتوى السجلات الزمنية لدى الأفراد المصابين وغير المصابين، الذي يسمح لنا بكشف دور منظور الزمن في الحفاظ على التوازن النفسي. فإن الموضوع يتطلب إجراء مزيد من البحوث الميدانية حول دور منظور الزمن في مواجهة الأحداث الصدمية و في السلوكات التي تكمن فيها أخطار صحية خاصة منها اضطرابات القلق و الإدمان على المخدرات، قيادة السيارات الخطيرة إلى غير ذلك. وهذا يفتح آفاق بحث واسعة في ميدان العلوم النفسية كمتغير نفسي معرفي ينظم و يقوّم مسار حياة الفرد. كما يمكن اعتمادها في الوقاية أو في بناء برامج علاجية نفسية.

الخلاصة

توضح نتائج هذه الدراسة أن اضطراب شدة ما بعد الصدمة يؤدي إلى اختلال تناغم توظيف محتويات السجلات الزمنية التي تعبر عن منظور الزمن لدى الفرد وبالتالي استمرارية الإضطراب وديمومته. كما توصلت الدراسة إلى أن الإتزان في التوجه نحو توظيف محتوياتها يساعد الفرد على التكيف و تجاوز خطر الإصابة باضطراب شدة ما بعد الصدمة. مما يبين أن دور الوعي بمعادلة الزمن يجعل الفرد يحافظ على اتزان حالته النفسية.

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تعليمات للباحثين

تصدر المجلة العربية للطب النفسي منذ عام 1989 عن إتحاد الأطباء النفسيين العرب في الأردن. وتصدر المجلة مرتين في السنة .في شهر مايو (أيار) وشهر تشرين ثاني (نوفمبر) الكترونياً و ورقياً. الأوراق المرسلة قد تكون بحوثاً أصيلة، مراجعات، وكذلك الأوراق التي تصف الممارسة العملية للطب النفسي، وتقبل الأوراق على أنها خضعت للمعايير الأخلاقية والقانونية المحلية والدولية. و أن لا تكون قد نشرت في السابق وتقبل باللغتين العربية أو الإنجليزية مع ملخص باللغتين، ترسل الأوراق لرئيس تحرير المجلة.

ترسل الأوراق بالبريد الإلكتروني على أن تشمل:

- عنوان الورقة (لا يزيد عن 40 حرف)، ويكون بالإنجليزية والعربية، وتكون أسماء الباحثين بلا ألقاب أو عناوين وباللغتين.
- ملخص باللغة الإنجليزية (لا يزيد عن 200 كلمة). ويجب أن يتبع شكلاً منظماً (الأهداف، الطريقة، النتائج، الاستنتاج). ويتبعه الملخص العربي حسب نفس الترتيب
- يتبع الملخصين الكلمات ألمفتاحيه (لا تزيد عن 5).
- الإعلان عن أي دعم أو تضارب في المصالح بعد الكلمات ألمفتاحيه.
- الأسماء الكاملة للباحثين وألقابهم وعناوينهم، وعنوان الباحث المراسل تكون في نهاية الورقة.
- الشكر على الدعم والإرشاد لأشخاص يكون لهم أسهام في انجاز البحث تضاف بعد المراجع.
- الصفحات يجب أن تكون مرقمة.

الجداول

يجب طبع الجداول بمسافات مضاعفة وعلى صفحات خاصة وترقم بالأرقام (1،2،3) وتعطى أسماءاً مختصرة.

الصور

الصور التوضيحية يجب أن تكون بضعف الحجم الذي ستظهر به بالطباعة.

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