

Adolescents' use of health services in Alexandria, Egypt: association with mental health problems

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الخلاصة. قُيِّمَت الدراسة نماذج استخدام الخدمات الصحية من قِبَل المراهقين وارتباط ذلك بمشكلات الصحة النفسية في الإسكندرية، مصر. شملت الدراسة عينة عشوائية متعددة الطبقات تضم 1577 من طلاب المدارس الذين تتراوح أعمارهم بين 14 و19 عاماً، استكملوا ملء استمارات تستكمل ذاتياً حول الوضع الصحي والديموغرافي، واستخدام الخدمات الصحية في السنة الماضية، إلى جانب قائمة جرد خاصة بالاكْتِئاب لدى الأطفال ومقياس العدوانية الذي يستكمل ذاتياً من قِبَل المراهقين. وقد أبلغ 97.1% من الطلاب أنهم استخدموا العيادات الصحية المدرسية مرةً أو أكثر من مرة في السنة التي سبقت الدراسة، وأن 93.7% منهم قد استخدم مراكز الرعاية الصحية الأولية وأن 16.8% منهم قد استخدم خدمات الصحة النفسية وأن 13.6% منهم قد استخدم الخدمات الصحية الأخرى. وقد تراكبت المعاناة من مرض عضوي في السنة السابقة (نسبة الأرجحية = 1.8) والمعاناة من أعراض الاكتئاب (نسبة الأرجحية = 2.93) والمعاناة من أعراض عدوانية (نسبة الأرجحية = 5.53) تراكباً يُعْتَدُّ به مع تكرار استخدام الخدمات الصحية (أكثر من 4 زيارات في السنة).

ABSTRACT The study assessed patterns of health service use by adolescents and the association with mental health problems in Alexandria, Egypt. A systematic stratified random sample of 1577 school students aged 14–19 years completed a self-report questionnaire about demographic and health status, use of health services in the previous year, and the Children's Depression Inventory and the Adolescent Self-Report Aggression Scale. Overall, 97.1% of students reported using school health clinics once or more in the year before the study, 93.7% primary health centres, 16.8% mental health services and 13.6% other health services. A history of organic illness in the previous year (OR = 1.80), having depressive symptoms (OR = 2.93) and having aggressive symptoms (OR = 5.53) were significantly associated with frequent use of health services (≥ 4 visits/year).

L'utilisation des services de santé par les adolescents à Alexandrie (Egypte) : association avec les problèmes de santé mentale

RESUME L'étude a analysé les schémas d'utilisation des services de santé par les adolescents et l'association avec les problèmes de santé mentale à Alexandrie (Egypte). Un échantillon aléatoire systématique stratifié de 1577 lycéens âgés de 14 à 19 ans a rempli un questionnaire d'autoévaluation sur la situation démographique et l'état de santé, l'utilisation des services de santé au cours de l'année précédente, ainsi que l'inventaire de dépression chez l'enfant « Children's Depression Inventory » et l'échelle d'évaluation « Adolescent Self-Report Aggression Scale ». De manière générale, 97,1 % des lycéens signalaient avoir utilisé les centres médicaux scolaires une fois ou plus au cours de l'année précédant l'étude, 93,7 % les centres de santé primaires, 16,8 % les services de santé mentale et 13,6 % d'autres services de santé. Des antécédents de maladies organiques au cours de l'année précédente (OR = 1,80), le fait d'avoir des symptômes dépressifs (OR = 2,93) et des symptômes agressifs (OR = 5,53) étaient associés de manière significative avec l'utilisation fréquente des services de santé (≥ 4 visites/an).

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Introduction

Many teenagers depend on multiple sources of health care, and school personnel are important sources of health-related information [1]. The expansion of school-based health services since the early 1970s is a specific response to meet the medical needs of youth [2]. Adolescents are often vulnerable to particular health risks and face multiple barriers to accessing health care. School-based clinics represent an alternative model of health care that responds to the unique health issues of adolescents by offering preventive, comprehensive services, including mental health and other sensitive services [3].

According to Parker and Roy, the chances of becoming depressed in adolescence increased in the latter part of the 20th century and the onset of depression is observed at a younger age than before [4]. They added that adolescent depression is manifested either as melancholic symptoms or as irritability and anger.

The association between adolescents' use of health services and their mental health status is controversial. Pastore et al. found that the average users, frequent users and non-users of a school-based health centre did not differ in the mental health problems measured in their study [5], whereas others have found that depressive symptoms were associated with increased service utilization [6].

The aim of this study was to assess the patterns of use of different health services by secondary school adolescents aged 14–19 years in Alexandria, Egypt, and to examine the association between utilization and adolescents' most common mental health problems, namely depressive and aggressive symptoms.

Methods

Subjects

In a cross-sectional school-based study in 1996, 1577 students of both sexes were selected by systematic stratified random sampling from 12 secondary schools representing the 6 districts of Alexandria, Egypt.

Research instruments

A self-report questionnaire was designed by the researcher to be completed by secondary school students. It included demographic and personal data such as age, sex, birth order, number of friends, number of family members, degree of family coherence, satisfaction with school, history of dropping a class and history of organic illness in the year prior to the study. Respondents were asked how many times they had visited primary care centres, school health clinics, mental health services or other health services (e.g. private clinics, general or military hospitals) in the previous year. The questionnaire also included a question on cigarette smoking (never-, ever-, ex- or current smoker). The Arabic Social Class Scale [7] was applied to participants' responses. This uses the degree of parents' education, occupation and crowding index (number of family members divided by number of closed rooms in the accommodation).

To obtain a history of emotional disturbance in the previous year, students were asked if they had had any emotional or psychological problems that made them consult a doctor in the year before the survey. Two further tools were used to assess adolescent depression, which usually manifests either as melancholic symptoms or as irritability and hostility [4]:

- The Arabic version of the 27-item Children's Depression Inventory [8] covers an array of depressive symptoms. Each of the 27 items of the inventory assesses 1 symptom by presenting 3 choices arranged from 0 to 2 in the direction of increasing psychopathology and total score ranges from 0 to 54. The inventory's test-retest reliability was 0.9 and the cut-off score was 24, which means that adolescents having this score or above were considered to have depressive symptoms.
- The Arabic version of the 14-item Adolescent Self-Report Aggression Scale [9], covers an array of aggressive symptoms. Each of the 14 items of the inventory assesses 1 symptom by presenting 3 choices arranged from 0 to 2 in the direction of increasing psychopathology and total score ranged from 0 to 28. The scale's split-half reliability was 0.76 for boys and 0.65 for girls and the cut-off score was 18 for both sexes, which means that adolescents having this score or above were considered to have aggressive symptoms.

It took around 40 minutes for the students to complete the questionnaire and other scales during a class session.

Data processing and statistical analysis

Data coding, entry and management was made using the *Epi-Info* statistical program [10], followed by data analysis using *SPSS*, version 6 for Windows [11].

Ethical issues

To preserve confidentiality, no direct or indirect identification of respondents was used. The adolescent respondents gave their verbal consent to participate in the study. Pre-testing of the questionnaire was conducted on 100 students of both sexes before running the study.

Results

From the 12 secondary schools in Alexandria, 1577 adolescent students (49.8% male) completed the questionnaires and self-report scales. Their ages ranged from 14 to 19 years with a mean of 15.8 years (SD 1.3).

Table 1 shows the different utilization patterns of health services by adolescents. School health clinics had the highest rate of utilization; 97.1% of students used this facility once or more in the year before the

Table 1 Utilization of different health services by 1577 adolescents in the year before the study

No. of visits/year	Respondents visiting:							
	Primary care centres		School health clinics		Mental health services		Other health services	
	No.	%	No.	%	No.	%	No.	%
0	100	6.3	45	2.9	1312	83.2	1362	86.4
1	920	58.3	842	53.4	265	16.8	215	13.6
2	511	32.4	606	38.4	0	0	0	0
3	28	1.8	50	3.2	0	0	0	0
4	18	1.1	34	2.2	0	0	0	0

study, compared with 93.7% for primary health centres, 16.8% for mental health services and 13.6% for other health services. Only 17.0% of the sample used every type of health service studied at least once in the year before the study. About 57% of the sample reported having used more than 1 source of care in the year.

The median number of visits to any of the categories of health services was 3 and the range was 0–10 visits. Adolescents were grouped into frequent users (4 or more visits/year) and infrequent users (0–3 visits/year). Overall, 467 (29.6%) of the sample were frequent users of health services. The percentage of adolescents frequently using health services distributed according to their age is shown in Figure 1. No significant difference in frequent utilization was noticed between different age groups.

The respondents' scores on the depression scale ranged from 1 to 43, with a mean of 13.2 (SD 6.17). After applying the cut-off score of 24, 69 (4.4%) of the sample were considered to have depressive symptoms. The adolescents' scores on the aggression scale ranged from 0 to 26, with a

mean of 11 (SD 4.4). Applying the cut-off score of 18, 78 (4.9%) of the sample were considered to have aggressive symptoms.

Overall, 190 (12.0%) students reported a history of emotional disturbance. There were significant associations between having a history of emotional disturbance and having depressive symptoms and aggressive symptoms (Table 2). Such association was examined before entering the history of emotional disturbance in the logistic regression model as a confounder to depressive or aggressive symptoms.

Adolescents who reported frequent use of primary health centres or school health clinics were more likely to have aggressive and depressive symptoms than infrequent users. The correlation coefficient between number of visits to health facilities and depression and aggression scores respectively were 0.14 and 0.139 ($P < 0.001$). The coefficient correlation between depression and aggression scores was 0.428 ($P < 0.001$) (data not shown in tables).

Table 3 shows the variables that were significantly positively associated with frequent use of health facilities in a multiple logistic regression model. These were: a

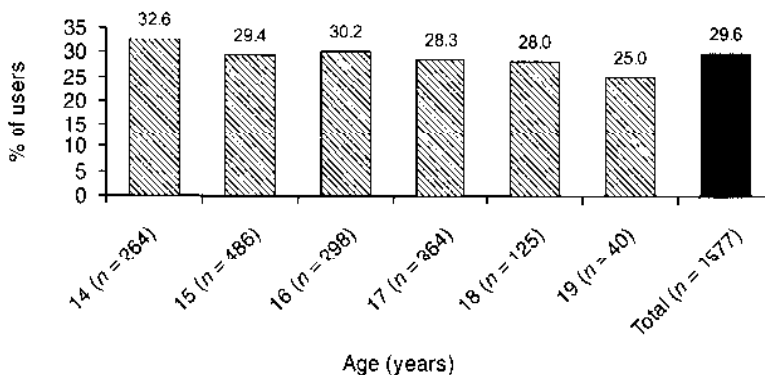


Figure 1 Distribution of frequent users of health services by age (n = total number of respondents in each age group)

Table 2 Association of depressive and aggressive symptoms with adolescents' history of emotional disturbance in the year before the study

Symptoms	History of emotional disturbance				Total	
	Yes		No		No.	%
	No.	%	No.	%		
<i>Depression</i>						
No	158	10.5	1350	89.5	1508	100.0
Yes	32	46.4	37	53.6	69	100.0
Mantel-Haenszel $\chi^2 = 3.99, P = 0.046$						
<i>Aggression</i>						
No	175	11.7	1324	88.3	1499	100.0
Yes	15	19.2	53	80.8	78	100.0
Mantel-Haenszel $\chi^2 = 80.19, P < 0.001$						
<i>Total</i>	190	12.0	1387	88.0	1577	100.0

history of organic illness in the year before the study (odds ratio (OR) = 1.80), having depressive symptoms (OR = 2.93) and having aggressive symptoms (OR = 5.53). Birth order (oldest child), history of dropping a class at school and history of emotional disturbance were significant negatively associated variables. Age, sex, social class score, satisfaction with school, number of friends, and family coherence were not significantly associated with frequent usage.

Discussion

The association between adolescents' psychiatric symptoms and the pattern of utilization of health services has to our knowledge never been studied before in Alexandria. However, the study relied only on self-report questionnaires that, despite being easy to apply, might yield inaccurate responses. The study should therefore be viewed as preliminary.

The results of the current study noted under-utilization of mental health services

by adolescents. Cohen and Hesselbart mentioned that the under-use of services of middle income and rural children might reasonably be ascribed to access problems [12]. Kulka et al. indicated that people of lower socioeconomic status have a lower rate of mental health service utilization [13]. This is inconsistent with our findings, which showed no significant association between utilization of all types of health facility and the social class of the study sample. We also showed that there was no significant association between frequency of utilization of health facilities and the adolescents' sex, which is similar to what Thompson et al. found in their study [14]. Adolescents' age also had no association with utilization. Ryan et al. mentioned that age and sex were more important in predicting use of illness-related care than routine use of medical care [15].

The under-utilization of mental health services could be a resort to avoid the stigma of being mentally ill, lack of confidentiality on visiting the crowded general hospitals or because health insurance for

Table 3 Independent variables associated with frequent use of health services (4+ visits/year) by 467 adolescents in stepwise logistic regression analysis

Variable	OR	95% CI	P-value
Aggressive symptoms	5.53	3.33–9.19	< 0.001
Depressive symptoms	2.94	1.71–5.06	< 0.001
History of organic disease	1.80	1.18–2.77	< 0.001
Higher birth order	0.92	0.85–0.99	0.02
History of dropping a class	0.70	0.51–0.97	0.03
History of emotional disturbance	0.60	0.41–0.89	< 0.001

OR = odds ratio.

CI = confidence interval.

adolescents is not extended to private clinics. Ziv et al. found that adolescents underutilized physician offices and they were more likely to be uninsured than other age groups [16]. Ryan et al. concluded that having a regular source of care and health insurance were strong predictors of using medical care [15].

School health clinics were the most highly utilized facility in the current study. Only 2.9% of the sample did not use this facility in the year before the study because all school students in Alexandria, Egypt, are medically insured within the school health clinics, school health polyclinics and school health hospitals. That was in comparison with 6.3% who had not used primary health centres, 83.2% not using mental health services, or 86.4% not using other health services. School-based clinics staffed by an interdisciplinary team of health care professionals are among the pioneering efforts that address both health and education of adolescents [17]. School

health clinics can also increase students' health knowledge and access to health-related services [18].

Adolescents who reported more frequent use of primary health centres or school health clinics were more likely to have aggressive and depressive symptoms than others. Consistent evidence has shown that a substantial proportion of people with emotional problems and mental disorders are treated in the physical health sectors [19,20]. Alegria et al. found that subjects with high scores for psychiatric symptoms were also found to make more use of general health services [21]. Johnson et al. found that major depression and depressive symptoms were associated with increased service utilization [6]. Hansson et al. also concluded that patients in contact with psychiatric services were more frequent users of other medical services [22]. In contrast, Katerndahl and Realini concluded that subjects with panic symptoms reported higher rates of health care utiliza-

tion despite having less insurance coverage and experiencing barriers to access [23]. The high utilization pattern of general health facilities by adolescents with depressive or aggressive symptoms in the current study could be explained if adolescents increased their utilization of general health services when psychiatric services utilization was reduced. It could also be assumed that somatization occurs in response to stress for the predisposed personality, which in turn would increase utilization of the general health services.

Conclusion and recommendations

Depressive or aggressive symptoms were associated with increased utilization of school health clinics and primary health

centre facilities. To achieve the goal of mental health care for all Africans, psychiatry should be included in the primary health care programme. Physicians actually provide services to more patients with depressive symptoms than to patients with formally defined conditions of depressive disorders. For those working with adolescents, it is important to take into account all aspects of the individual's world. Cumulative life stress, friendship networks and self-esteem should be considered when working with non-clinical as well as clinical populations.

We recommend further study using standardized personal interviews to establish a psychiatric diagnosis for adolescents in addition to reviewing utilization patterns from health facility records instead of self-reported use of health services.

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