Duration of untreated psychosis in two Arab samples from Egypt and Saudi Arabia: Clinical and sociocultural correlates

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Background

The duration of untreated psychosis (DUP) varies considerably across different cultures and settings. However, cross-cultural studies have mostly been either comparisons between developed and developing countries or comparisons between different ethnic groups in unicultural investigations. Studies comparing more socioculturally related countries, such as Arab countries, are required. To the best of our knowledge, no previous studies have compared DUP between Egypt and Saudi Arabia.

Aims

The aims of the study are to determine DUP in two samples of patients with first-episode psychosis from Egypt and Saudi Arabia; to explore the sociodemographic, clinical, and help-seeking characteristics that are associated with DUP in these two groups; to distinguish which of these sociodemographic, clinical and help-seeking correlates the DUP are shared by Egyptian and Saudi Arabian patient groups and which are more culture specific; and to test the hypothesis that severity of illness predicts the length of DUP.

Methods

A total of 96 (50 from Egypt and 46 from Saudi Arabia) consecutive attendees at two outpatient clinics with first-episode psychosis were assessed by semistructured interviews. In addition to the determination of DUP and help-seeking contacts, patients were assessed by the Positive and Negative Syndrome Scale.

Results

The mean DUP was 3.2 and 3.1 years for the Egyptian and Saudi Arabian patient groups, respectively. There were no significant differences between the two groups with regard to most of the variables studied. Variables that significantly correlated with DUP were entered into multiple regression analyses. The final model, which accounted for 56.9% of the variance in DUP, included only two variables: 'first contact' and 'mode of onset'.

Conclusion

In the two countries, patients with first-episode psychosis were found to have long DUP. First contact with a traditional (faith) healer and insidious mode of onset of psychosis were the two significant predictors of long DUP. Although severity of negative symptoms, as indicated by Positive and Negative Syndrome Scale negative subscale scores, was correlated with DUP, it could not be retained in the final regression model as a significant predictor. Our hypothesis that severity of illness predicts long DUP had to be rejected. Factors found to influence DUP should be taken into account in early intervention initiatives.

Keywords:
 duration of untreated psychosis, Egypt, first-episode psychosis, help-seeking, Positive and Negative Syndrome Scale, Saudi Arabia, traditional (faith) healer

Introduction

The duration of untreated psychosis (DUP), which represents the delay in initiation of treatment, is a concept of paramount importance in schizophrenia research, at least from the point of view of secondary prevention. Its importance began to be appreciated in the mid 1980s when the Northwick Park Study of first-episode schizophrenia found that the most important determinant of relapse was the duration of illness before starting antipsychotics [1]. Interest in the topic has increased even more in recent years, with a growing sense of optimism derived from the understanding that attention to the early phases of illness could result in a substantial reduction in morbidity and lead to a better quality of life. Moreover, although there is some controversy about whether long DUP is associated with poor outcome, the weight of evidence supports an association that, although not strong, is persistent; for example, [2–5]. Thus, in a systematic review of literature,

Marshall *et al.* [6] concluded that there is convincing evidence of an association, albeit small to moderate, between DUP and outcome. Similarly, literature review in low and middleincome countries by Farooq *et al.* [7] showed that the lack of treatment for psychotic illness early in its course is associated with poor outcomes, irrespective of the income or cultural status of the setting. Long DUP was frequently reported to be associated with increased mortality and poor prognosis [8,9]. The relationship between DUP and 1-year outcome, as demonstrated by two large studies from UK [10] and Australia [11], is curvilinear, with greater improvement in outcome if DUP is reduced from 6 to 3 weeks compared with reduction from 6 to 3 months. In other words, the maximum benefit of early intervention services will be obtained only by shifting patients to the shortest part of the DUP range.

However, the mechanism by which long DUP might lead to poor outcome is still uncertain. It has been postulated that a long DUP might lead to neurotoxic processes, manifested as persistent morbidity, treatment resistance, and symptom worsening [12], and that there is a critical period, postulated to be up to 5 years from the onset of psychosis, for intervention before psychosis can be established [13,14]. Biological mechanisms involving dopaminergic and glutamatergic processes have also been suggested to explain how prolonged active psychosis will result in treatment refractoriness. Recently, neuroimaging studies have demonstrated reductions in hippocampus volume [15] and temporal gray matter [16] in patients with long DUP. These findings could reflect a progressive pathological process that is active before treatment. In contrast, these abnormalities could be associated with a more insidious onset of illness and a later presentation to services. Thus, possible explanatory mechanisms would also include psychosocial processes, with prolonged untreated psychosis increasingly producing psychological and social dysfunction.

In an attempt to reduce DUP, many countries have implemented early intervention programs [17–19] as a target for secondary preventive efforts [20]. The aim of these programs is not limited to the reduction of DUP to improve outcome; they also attempt to promote recovery through the evidence-based use of drug treatments, cognitive behavioral therapies, and family interventions, provided in a setting specifically designed to be accessible and nonstigmatizing. Although some studies indicate that specialized early psychosis intervention programs can deliver a higher recovery rate and at a cost lower than that of standard public mental health services [21,22], other studies suggest that improvement in outcome is not as promising as hoped [23]. Addressing factors that have a strong influence on DUP and that are also changeable is important. This may be a key for the success of any program attempting to reduce potentially deleterious treatment delays [24].

Data on treatment delay in psychosis, however, are still rather limited, especially from developing countries. Most available studies indicate that DUP has an average of approximately 1–2 years [25]. It is noted that DUP varies considerably across different cultures and settings [25]. Thus, although DUP was found by Oliveira *et al.* [26] in São Paulo (Brazil) to be shorter than expected, with a mean of only 4.1 weeks, Nishii *et al.* [27] found that the mean of DUP in three cities in Japan (Tokyo, Toyama, and Kochi) was relatively long (20.3 months), and Haas and Sweeney [28] in New York (USA) found DUP to have a mean as long as 3 years. Our own pilot study in Zagazig (Egypt) that we reported in 2005 [29] found a still longer duration with a mean of 3.1 years.

Although the earliest manifestations of psychosis may be universal, the impact of individual, familial, social, and health service-related factors on psychiatric help-seeking behavior might vary according to different cultural contexts [25], and, although cross-cultural data on incidence and prevalence, rates of admission, psychopathological aspects, symptoms, course, and outcome are available [30,31], formal studies on DUP-related factors in different cultures are hard to find. Cross-cultural studies on the characteristics of the early course of psychosis and pathways to psychiatric care have mostly tended to be either comparisons between developed and developing countries [32] or unicultural studies that have examined the differences between different ethnic groups in one country [33,34]. Thus, data from studies comparing more socioculturally related countries, for example, studies between Arab countries, are required. Although both Egypt and Saudi Arabia represent Arab countries, there are many differences between them in terms of religious affiliation, level of secularism, level of democracy, and economic status [35]. These differences may have an influence on the factors associated with delay in treatment seeking. However, no previous studies, to the best of our knowledge, have compared DUP between these two countries.

Our aims in this study were to determine the DUP length in two samples of patients, from Egypt and Saudi Arabia, with first-episode psychosis, who had received no previous psychiatric treatment; to explore the sociodemographic, clinical, and help-seeking characteristics that are associated with DUP in these two groups; to distinguish which of these sociodemographic, clinical and help-seeking correlates of DUP are shared by Egyptian and Saudi patient groups and which are more culture specific, and (4) to find out whether severity of illness would predict the length of DUP at presentation. The null hypothesis (H_0) is that no significant correlation would exist between severity of illness and length of DUP. The alternative hypothesis (H_1) is that a significant correlation would exist between severity of illness and length of DUP.

Method
Participants
The study population comprised 96 consecutive first-episode never psychiatrically treated patients (50

Egyptian attendees of the outpatient clinic of a private psychiatric hospital, Zagazig, Egypt, and 46 Saudi Arabian attendees of an outpatient clinic of a private psychiatric hospital, Jeddah, Saudi Arabia) during the first half-year 2009 AD/1430 H.

Eligibility criteria included the following:

(1) First presentation to psychiatric services.
(2) Age range of 15–60 years.
(3) Presence of nonaffective psychosis. Diagnosis was based on *Diagnostic and Statistical Manual, version IV* criteria for schizophreniform disorder, schizophrenia, delusional disorder, or psychosis not otherwise specified.
(4) Residency in either Sharkiah governorate, Egypt, or in the western province, Saudi Arabia.
(5) Availability of a reliable informant who had stayed with the patient most of the period of illness and is able to recall the details about the patient's illness.
(6) Patient is willing to participate and gives a written informed consent.

Exclusion criteria were the following:

(1) Presence of organic conditions or use of substances that directly contribute to psychosis.
(2) Mental retardation.
(3) Epilepsy.
(4) Serious threat of suicide, violence, or other mental states that would not allow participation (e.g., stupor) or those who were judged as not having the capacity to give consent. This capacity was assessed with a four-item scale, three of which were based on those reported by Palmer *et al.* [36] to examine participants' comprehension of the purpose, risks, and benefits of the research protocol; the fourth question was to assess the voluntary nature of participation.

The inclusion and exclusion criteria were ascertained by careful clinical assessments based on interviews with patients and their families, physical examinations, and routine laboratory testing, supplemented with toxicological screening and other investigations as indicated.

The study was approved by the Research Ethics Committee of the Faculty of Medicine, Zagazig University, Zagazig, Egypt and the Local Research Ethics Committee of the Psychiatric Hospital, Jeddah, KSA.

Assessments
Patients were assessed by semistructured interviews attended by at least one close relative to confirm the information given by the patient. Assessments included the following:

(1) DUP determination: DUP was defined as the time between the onset of first psychotic symptoms (e.g., hallucinations, delusions, thought disorder, or inappropriate or bizarre behavior) and the time of receiving first adequate treatment. To determine the onset date, patients and family members were asked to state when the patient (or family member) first experienced (or noticed) behavioral changes that, in retrospect, appear to be related to the patient becoming ill. These changes must have lasted throughout the day for several days or several times a week and not be limited to a few brief moments. The patients (or family members) were asked again, after explaining psychosis in clear language, when they first experienced (or noticed) psychotic symptoms? When there were differences between patients and family members, the date given by the patient was taken because most of the time the exact onset of illness had been overlooked by the relatives [37]. The mode of onset of psychosis was operationally defined as acute (<1 month) or insidious (>1 month).
(2) Help-seeking contacts: Using a semistructured questionnaire, details were obtained about any contacts, medical or otherwise, that were made to obtain help for the patient's condition before approaching the psychiatric service. In addition, reasons for delay in getting psychiatric help were enquired about. Details about sociodemographic characteristics were also recorded.
(3) The Positive and Negative Syndrome Scale (PANSS) [38]: This is a 30-item test. Each item is rated from 1 (no evidence) to 7 (extreme). In addition to the total score for overall psychopathology (sum of all 30 items), PANSS has subscales that yield data on positive symptoms of psychosis (7 items), negative symptoms of psychosis (7 items), and general psychopathology (16 items). The α coefficients of reliability reported for the PANSS scale scores are 0.73 for the positive scale, 0.83 for the negative scale, and 0.79 for the general psychopathology scale [38]. All raters in the two sites were experienced in using PANSS. They were trained at the same center using face-to-face interviews with patients and videotaped cases. The intraclass correlations for total scores and subscale scores on the PANSS were in the range of 0.85–0.93.

Statistical analysis
Data were presented as arithmetic mean ± standard deviation (± SD), or as median (range) for continuous variables, and as absolute values with percentages for categorical measures. Differences between groups were analyzed using either the *t*-tests for independent samples for normally distributed variables or the nonparametric Mann–Whitney *U*-test when distributional assumptions were not met. Nominal variables were cross-tabulated, and relationships were assessed using the χ^2 test. Spearman's ρ was used to calculate correlations. To address the highly skewed distribution of DUP, we performed a logarithmic (base 10) transformation of the variable. Multiple linear regressions were used to explore the factors associated with DUP. Variables that showed significant correlation with log DUP were further analyzed using multiple linear regression, the stepwise method, with both forward selection and backward elimination ($P<0.05$ for entry and $P>0.10$ for removal), to evaluate their influence (as independent variables)

on the change of the logarithmically transformed DUP (as the dependent variable). Dummy variables were used for nationality (Egyptian = 1; Saudi = 0), sex (male = 1; female = 0), marital status (married = 1; unmarried = 0), occupation (yes = 1; no = 0), residence in Egypt (urban = 1; rural = 0), residence in Saudi Arabia (metropolitan = 1; nonmetropolitan = 0), family history (positive for psychiatric illness = 1; negative for psychiatric illness = 0), mode of onset (insidious = 1; acute = 0), diagnosis (schizophrenia = 1; other nonaffective psychoses = 0), and first help-seeking contact (traditional/faith-healer = 1; others = 0). A standardized beta estimate was used to determine which variable had the strongest effect on DUP. The SPSS statistical program, version 11.5 [SPSS for Windows, 2001 (SPSS Inc., Chicago, IIIinois, USA)], was used for all statistical analyses and sample size estimations. A two-tailed P value of less than 0.05 was considered significant.

Results

As shown in Table 1, most of the patients in the Egyptian and Saudi Arabian samples were unmarried, with the Egyptian patients significantly more often so than Saudi Arabian patients (80 versus 60.9%; $P = 0.039$). There were no significant differences between the two groups with regard to all other sociodemographic parameters. However, the two groups differed in the frequency distribution of the diagnostic categories ($P = 0.049$). The Egyptian patient group had more patients with schizophrenia, whereas the Saudi Arabian patient group had more patients with other nonaffective psychoses. In addition, when patients were subclassified by sex, there were more men (25 patients, 50%) than women (10 patients, 20%) with a diagnosis of schizophrenia among the 50 Egyptian patients ($\chi^2 = 13.909$; $df = 5$; $P = 0.016$), but there were no sex differences as regards diagnosis of

Table 1 Sociodemographic, clinical, and help-seeking characteristics of the Egyptian ($N = 50$) and Saudi Arabian patients ($N = 46$)

Characteristic	Patients		Analysis
	Egyptian	Saudi Arabian	
Sociodemographic characteristics			
Sex			
Male	28	25	$\chi^2 = 0.026$; $df = 1$; $P = 0.871$
Female	22	21	
Age (years)			
Mean ± SD	26.8 ± 9.42	28.6 ± 11.27	$t = 0.837$; $df = 94$; $P = 0.405$
Marital status			
Married	10	18	$\chi^2 = 4.244$; $df = 1$; $P = 0.039$
Unmarried[a]	40	28	
Education (years)			
Mean ± SD	9.8 ± 3.72	9.2 ± 3.21	$t = 0.905$; $df = 94$; $P = 0.368$
Occupation			
Yes	27	33	$\chi^2 = 3.217$; $df = 1$; $P = 0.073$
No	23	13	
Residence			
Urban/Metropolitan	28	30	$\chi^2 = 0.851$; $df = 1$; $P = 0.356$
Rural/ nonmetropolitan	22	16	
Clinical characteristics			
Family history			
Positive	16	13	$\chi^2 = 0.159$; $df = 1$; $P = 0.690$
Negative	34	33	
Age at onset (years)			
Mean ± SD	23.6 ± 10.01	25.5 ± 10.9	$t = 0.887$; $df = 94$; $P = 0.377$
Mode of onset			
Acute	19	25	$\chi^2 = 2.579$; $df = 1$; $P = 0.108$
Insidious	31	21	
Diagnosis group			
Schizophrenia	35	17	$\chi^2 = 11.099$; $df = 5$; $P = 0.049$
Schizophreniform disorder	4	8	
Schizoaffective disorder	4	10	
Brief psychotic disorder	2	4	
Delusional disorder	1	2	
Psychotic disorder NOS	4	5	
PANSS			
Total: Mean ± SD	92.0 ± 13.58	88.5 ± 12.16	$t = 1.358$; $df = 94$; $P = 0.178$
Positive: Mean ± SD	23.0 ± 4.54	21.6 ± 4.08	$t = 1.593$; $df = 94$; $P = 0.114$
Negative: Mean ± SD	22.2 ± 4.04	22.4 ± 3.17	$t = 0.315$; $df = 94$; $P = 0.753$
General psychopathology ± SD	46.8 ± 7.88	44.4 ± 8.71	$t = 1.423$; $df = 94$; $P = 0.158$
Help-seeking characteristics			
First contact			
Traditional (faith) healer	39	31	$\chi^2 = 1.894$; $df = 2$; $P = 0.388$
General practitioner/other professionals	5	9	
None before current (psychiatric) contact	6	6	
DUP (years)			
Mean ± SD	3.2 ± 2.16	3.1 ± 2.02	Mann-Whitney U = 1130.5; Z = 0.144; P = 0.885
Median (range)	3.0 (0.02–10.5)	3.0 (0.01–10.0)	

DUP, duration of untreated psychosis; PANSS, Positive and Negative Syndrome Scale; Psychotic disorder NOS, psychotic disorder not otherwise specified; SD, standard deviation.
[a]Unmarried, Single/Divorced/Widow.

schizophrenia among the Saudi Arabian patients. There were no significant differences in family history, age at onset, mode of onset, or PANSS scores between the Egyptian and Saudi Arabian patients. In addition, there were no significant differences in first contact or DUP between the Egyptian and Saudi Aabian patients. In both groups, the most common first contact was the traditional (faith) healer. Egyptian patients who first contacted traditional (faith) healers had significantly longer mean DUP (3.6 ± 2.17) compared with those who did not (1.7 ± 1.33) (Z = 2.770; P = 0.006). Saudi Arabian patients who first contacted traditional (faith) healers also tended to have longer mean DUP (3.5 ± 2.20) compared with those who did not (2.3 ± 1.28); however, this difference was not statistically significant (Z = 1.753; P = 0.080). The mean DUP was significantly longer in patients with a diagnosis of schizophrenia among both Egyptian and Saudi Arabian patients. Egyptian patients with a diagnosis of schizophrenia had a significantly longer mean DUP (3.8 ± 2.12 years) compared with patients with a nonschizophrenia diagnosis (1.9 ± 1.63 years) (Z = 3.357, P = 0.001), whereas the corresponding figures for the Saudi Arabian patients were 3.9 (± 2.12) years versus 2.6 (± 1.78) years (Z = 2.197, P = 0.028).

With the aim of studying the relationship between DUP and other variables, Spearman's rank correlation was used individually in the Egyptian and Saudi Arabian patient groups, using DUP as the dependent variable. Results are shown in Table 2. Variables that were significantly associated with DUP were entered into multiple regression analyses. For the Egyptian patient group, these variables included age at onset, education, residence, family history, mode of onset, diagnosis, scores on the negative subscale of PANSS, and first help-seeking contact. The variables included for the Saudi Arabian patient group were age at onset, education, residence, family history, mode of onset, diagnosis, scores on the

Table 2 Correlations of duration of untreated psychosis with the characteristics studied in the Egyptian patients (N=50) and Saudi Arabian patients (N=46)

Characteristic	Egyptian patients		Saudi Arabian patients	
	Rho	P	Rho	P
Sex	0.234	0.102	0.190	0.206
Age (years)				
Current	−0.210	0.144	−0.109	0.472
At onset	−0.269	0.059	−0.249	0.095
Marital status	−0.208	0.146	−0.159	0.290
Education	−0.276	0.052	−0.262	0.078
Occupation	−0.200	0.164	−0.216	0.149
Residence	0.383	0.006	0.310	0.036
Family history	−0.369	0.008	−0.335	0.023
Mode of onset	0.585	0.000	0.602	0.000
Diagnosis	0.447	0.001	0.574	0.000
PANSS				
Total	0.266	0.074	0.269	0.059
Positive	−0.250	0.094	−0.251	0.079
Negative	0.291	0.040	0.377	0.010
General psychopathology	0.275	0.053	0.241	0.107
First contact	0.591	0.000	0.527	0.000

PANSS, Positive and Negative Syndrome Scale.

Table 3 Regression analysis of variables significantly associated with the duration of untreated psychosis in the Egyptian (N=50), Saudi Arabian (N=46), and overall study patients (N=96): final models

Explanatory variable	B	SE	Beta	t	P
Egyptian patient sample[a]					
(Constant)	1.126	1.415		0.769	0.430
First contact	0.296	0.044	0.622	6.680	0.000
Mode of onset	0.991	0.414	0.230	2.395	0.021
Diagnosis	0.044	0.019	0.205	2.294	0.026
Saudi Arabian patient sample[b]					
(Constant)	9.487	1.242		7.638	0.000
First contact	0.139	0.012	0.837	11.562	0.000
Mode of onset	0.031	0.013	0.165	2.344	0.024
Diagnosis	0.194	0.088	0.160	2.208	0.033
Total sample[c]					
(Constant)	6.288	1.038		6.058	0.000
First contact	0.112	0.011	0.695	10.230	0.000
Mode of onset	0.291	0.086	0.230	3.378	0.001

[a]Adjusted R^2=0.641; F=30.2; P=0.000.
[b]Adjusted R^2=0.781; F=54.6; P=0.000.
[c]Adjusted R^2=0.569; F=63.8; P=0.000.

negative subscale of PANSS, and first help-seeking contact. For the overall study population, we included, in addition to the variables already entered for the two groups, nationality of the patient (Egyptian/ Saudi) as an independent variable. As shown in Table 3, the final models for both the Egyptian and Saudi Arabian patient groups contained three variables: first help-seeking contact, mode of psychosis onset, and diagnosis. The final model for the total sample included two variables: first contact and mode of onset. That is, only the first contact and mode of onset remained as significant predictors for longer DUPs. This final model accounted for 56.9% of the variance in DUP and was statistically significant (F = 63.8, P = 0.000).

Discussion

This may be the first study to compare DUP between two Arab countries. We found no significant difference between the mean DUP of patients from Egypt (3.2 years) and that of patients from Saudi Arabia (3.1 years). The DUP mean of patients from both countries is very long compared with those reported from other countries, especially from developed ones [33,39–41], indicating that prolonged treatment delay is of major clinical concern in both Arab cultures. Borrowing support from the currently established association between prolonged DUP and poor outcome of psychosis [7], the significance of our finding could be extended to argue against the presumed wisdom that 'schizophrenia carries a better prognosis in developing countries' [42]. The first long-term study of the outcome of schizophrenia in an Arab country was conducted by Okasha *et al.* [43]. They found that a 10-year outcome of a sample of Egyptian patients 'was not better than that reported in developed countries', despite the putative protective factors, including family support. It may be that these factors, if any, would only have limited protective power during the long period of illness without treatment.

In addition to the similarity between Egyptian and Saudi Arabian patients in having a long DUP, there were a number of similarities between the two groups in terms of sociodemographic, clinical, and help-seeking characteristics. In both groups, there were more men than women, but this did not reflect in a significant sex difference in DUP between Egyptian and Saudi Arabian patients. Previous studies examining this association showed discrepant results. Thorup *et al.* [44], for example, reported that men had a longer DUP than women. By contrast, Køster *et al.* [45] found that women had longer DUP. However, Large and Nielssen [46] examined more than 100 published studies of DUP and found that fewer than one third had mentioned the DUP of men and women separately. This could suggest that in most studies, in accordance with our results, sex difference in DUP may not have been significant [46].

We tried to conduct this study in comparable settings as far as possible. Patients for the two study groups were recruited from outpatient clinics of private psychiatric hospitals. However, the place of residence of the Egyptian patient group was classified into urban and rural, whereas it was classified for the Saudi Arabian group into metropolitan and nonmetropolitan. Nevertheless, the Egyptian rural residence and the Saudi Arabian nonmetropolitan residence correlated similarly with long DUP. This is at variance with the finding of an 'association between rural place of residence and shorter DUP', as reported by Sharifi *et al.* in Iran [47]. In defense of their case, Sharifi *et al.* [47] argued that patients from rural areas might have been detected better by the active case finding of their national mental health programs in rural areas. Nevertheless, the Iranian study did not disprove the possibility that patients residing in rural areas might be encountering difficulties in accessing psychiatric hospitals, so that only those with recent onset and severe psychosis were brought to hospital, whereas those with chronic illness might have remained untreated in the community (and hence escaped inclusion in the study). Our contrasting finding, however, is in accordance with our earlier study [29]. We could further argue that rural families of schizophrenia patients in Egypt, or nonmetropolitan families in Saudi Arabia, are perhaps more able to compensate and cope with the dysfunctional ill member and hence keep him/her untreated for several years.

We also found that positive family history of psychiatric illness in both patient groups was equally common and negatively associated with the length of DUP. Although our results are in contrast to those of some other studies, [48] they are in agreement with others [49]. The presence of another family member who has been receiving psychiatric treatment plays an important role in the early presentation of psychosis. Conceivably, previous contact with a psychiatric patient potentiates the awareness of psychiatric symptoms and their significance. Chen *et al.* [49] emphasize that educational efforts directed at the family should be an essential part of any strategy for the early detection of psychosis.

In line with recent studies indicating that mode of onset is a determinant of DUP [50,27] we found in both Egyptian and Saudi Arabian samples that insidious mode of onset was associated with long DUP. Understandably, more abrupt changes in experience and behavior are more likely to be identified as a product of some pathological processes and are more likely to trigger help-seeking behavior compared with insidious changes. Conversely, if psychosis develops insidiously, the chance is greater for the occurrence of a gradual adaptation, as a result of which the patient and his/her family become gradually desensitized to the presence of abnormal behavioral signals indicative of a psychotic illness and become less motivated to overcome obstacles to help seeking, such as stigma.

The Egyptian and Saudi Arabian patient groups were similar in many respects but differed in others. For example, Egyptian patients were divorced, widowed, or never married and had a diagnosis of schizophrenia significantly more often than did Saudi Arabian patients. These differences, however, were not reflected in a difference in DUP.

Symptom severity as measured by PANSS was not, however, different between Egyptian and Saudi Arabian patients. In both groups, severity of negative symptoms, but not positive symptoms or general psychopathology, was associated with DUP. Although this finding contradicts a few studies that failed to find evidence that a longer period before treatment was associated with more severe illness [51], it is consistent with the results of many studies, including the meta-analyses provided by Marshall *et al.* [6] and Perkins *et al.* [52]. Nevertheless, when multiple regression analysis was performed and the PANSS negative subscale score was entered as an independent variable, this variable failed to be retained in the final regression model, indicating that it is not a significant predictor of DUP. In contrast, first contact remained as the most significant predictor for long DUP in the final model for the Egyptian, Saudi Arabian, and total samples. It was noted that the traditional (faith) healer was the most frequent help-seeking first contact in both groups. In contrast to studies from non-Arabian countries, which indicate that patients with psychotic disorders contact the general practitioner practice more frequently than do other types of patients [53], our results showed that general practitioners play a minor role. The major role played by traditional and religious healers in primary psychiatric care in Egypt was first noted by Okasha [54]. In one study it was estimated that 60% of outpatients at the university clinic in Cairo serving low socioeconomic classes have been to traditional healers before approaching a psychiatrist [55]. Recently, in a large community survey in upper Egypt, Rakhawy, and Hamdi [56] concluded that mentally disordered people have considerable tendency toward faith healing. Interestingly, our results, not only for the Egyptian patient group but also for the Saudi Arabian patient group, are in accordance with this conclusion. They also draw attention to the failure of other agencies in directing patients to seek help. Continued public education about psychosis, thereby improving the knowledge of potential patients, their

relatives, and other people or organizations involved, would be an important component in an overall strategy to achieve early detection of psychosis and shorten DUP.

Our study, however, has a number of limitations. First, patients as described above were taken from different population areas. Egyptian patients came from urban and rural areas of one governorate (Sharkia), whereas Saudi Arabian patients were from the metropolitan area of Jeddah city and from some of its surrounding nonmetropolitan areas. Second, patients recruited were from those presenting to private psychiatric service only, making it an false representation of Egyptian or Saudi Arabian samples. Third, the sample size was modest, and further study comprising a larger group of patients would be worthy. Fourth, although a systematic approach with the use of standardized instruments and a semistructured interview was adopted, the DUP and pathway data are based on patients' descriptions and are subject to recall bias. To enhance validity, all data were confirmed by at least one family member who was present during the interview. Moreover, some patient-related factors such as lack of insight, poor social adjustment, or other psychopathologies that might contribute to treatment delays were not controlled for.

Conclusion

The limitations noted above signify that conclusions should be viewed with some caution.

Patients with first-episode psychosis in both Egypt and Saudi Arabia have a long DUP, which should be of major clinical concern. In the two study sites, we found that first contact with a traditional (faith) healer and insidious mode of onset of psychosis were the two significant predictors of long DUP. Although severity of negative symptoms, as indicated by PANSS negative subscale scores, was correlated with DUP, it could not be retained in the final regression model as a significant predictor of DUP. Therefore, our hypothesis that severity of illness at presentation would strongly predict long DUP had to be rejected. Factors found to influence DUP should be taken into account in early intervention initiatives.

Acknowledgements

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الملخص العربي
مدة الذهان غير المعالج في عينتين عربيتين: من مصر و السعودية

خلفية: تتفاوت مدة الذهان غير المعالج تفاوتا كبيرا بين مختلف الثقافات و البيئات. غير أن معظم الدراسات عبر الثقافية(الثقافات المختلفة) اتجهت الى المقارنات بين الدول المتقدمة والدول النامية أو مقارنات بين جماعات عرقية مختلفة في الثقافة الواحدة. تنقصنا الدراسات التي تقارن البلدان المختلفة و التي ترتبط في نفس الوقت بروابط اجتماعية-ثقافية أقوى، كالبلدان العربية مثلا. على حد علمنا لا توجد دراسات تقارن بين مدة الذهان غير المعالج في مصر و السعودية.

الأهداف: (1) تحديد مدة الذهان غير المعالج في عينتين من المرضى من مصر و السعودية، لديهما ذهان النوبة الأولى. (2) استكشاف الخصائص الاجتماعية-الديموجرافية، و الاكلينيكية، و طلب المساعدة المصاحب لمدة الذهان غير المعالج في هاتين المجموعتين (3) تمييز أي الارتباطات بمدة الذهان غير المعالج مشتركة بين مجموعتي المرضى المصريين و السعوديين و أيها محددة الخاصة بالثقافة الخاصة لكل منهما. (4) اختبار فرضية أن شدة المرض تتنبأ بمدة الذهان غير المعالج.

الطرق: تم تقييم ستة وتسعين (50 من مصر و 46 من السعودية) مترددا متتاليا على عيادتين خارجيتين لديهم ذهان النوبة الأولى باستخدام مقابلات شبه-مبنية. بالإضافة إلى تحديد مدة الذهان غير المعالج و اتصالات طلب المساعدة، تم تقييم المرضى باستخدام مقياس المتلازمة الإيجابيّة و السّلبيّة (PANSS).

النتائج: كان متوسط مدة الذهان غير المعالج (3.2) و (3.1) سنة لكل من مجموعتي المرضى المصرية و السعودية على الترتيب، ولم تكن هناك فروق ذات دلالة بين المجموعتين في معظم المتغيرات التي قمنا بدراستها. و تم ادخال المتغيرات التي ارتبطت بدرجة ذات دلالة بمدة الذهان غير المعالج في تحليلات احصائية للانحدار المتعدد. و كان النموذج النهائي، والذي استأثر ب (56.9%) من التغاير في مدة الذهان غير المعالج، مشتملا على متغيرين اثنين: "الاتصال الأول" و "طريقة بداية المرض".

الاستنتاج: في البلدين، كان مرضى ذهان النوبة الأولى لديهم مدة الذهان غير المعالج طويلة، وكان الاتصال الأول بمعالج (ديني) تقليدي و طريقة البداية البطيئة(المتدرجة) للمرض هما المتنبئان ذاتا المغزى للمدة الطويلة للذهان غير المعالج. و بالرغم من أن شدة الأعراض السلبية، حسب ما دلت على ذلك درجات تحت-مقياس السّلبيّة لمقياس (PANSS)، كانت مرتبطة بمدة الذهان غير المعالج فإنه لم يمكن الاحتفاظ بها في نموذج الانحدار النهائي كمتنبئ ذات(ذو) مغزى، وكان علينا رفض فرضية أن شدة المرض تتنبأ بطول مدة الذهان غير المعالج.

(ولذلك ننصح)ينبغي أن يؤخذ في الاعتبار في مبادرات التدخل المبكر العوامل التي وجد أنها تؤثر في مدة الذهان غير المعالج.