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While still relatively young as a publication the ME-JPA has now become the third most read of our medical publications, showing a great need in the region.

A copy of the Survey Results can be found in this issue.

Other articles this month cover the topics of cognitive and executive functions and their risk factors, for a variety of conditions, discrimination and stigmatization of spouses of those with HIV in India, analysis of correlates of autistic disorder in three Arab countries, prevalence of dementia in Saudi Arabia and the Culturally Adapted Arabic Version of Geriatric Depression Scale (GDS-11-A): Validity and Reliability.
Study of Cognitive and Executive Functions and their Relation with Coronary Risk Factors, Chlamydia pneumonia infection, Acute Inflammatory Factors and Carotid Blood Flow in Elderly Diabetics

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Abstract

Objectives: To assess the relation between cognitive impairment and executive dysfunction among the diabetic elderly with Chlamydia pneumonia infection, level of serum IL-1β and CRP and carotid blood flow.

Method: A case control study performed in Ain Shams University Hospitals. A case group; 60 elderly diabetic patients and 30 control participants. All participants underwent comprehensive geriatric assessment, block design test, digit span subtest -forward, digit span subtest-backward, animal naming task, clock drawing test and contrast program test. Then measurement of serum level of Lipids, Interleukin 1 β (IL1β), C- reactive protein (CRP) and Anti-Chlamydia Pneumoniae IgG was performed. Carotid Arterial duplex on both sides of the neck was done.

Results: In both groups the mean level of IL1β in participants with cognitive impairment was higher than among those without cognitive impairment. Significant correlations between verbal fluency and CRP level and between contrast programming and IL1β were found (P<0.05). 60% of cases with cognitive impairment had atheromatous plaque while cases without cognitive impairment 34% had plaques P= 0.34.

Conclusion: Levels of inflammatory markers were higher among diabetic elderly with cognitive impairment. Low HDL can be considered an important factor in developing cognitive and executive dysfunction. Cases with cognitive impairment had a higher percentage of atheromatous plaques.

Key words: Executive Functions, Chlamydia pneumonia, Acute Inflammatory Factors and Carotid Blood
Introduction
Cognitive dysfunction even in its mild form might affect everyday activities (1). The combination of several independent vascular risk factors predicts performance on cognitive tests of information processing capacity and speed in elderly men (2). The combination of cardiovascular disease and a pro-inflammatory cytokine response may be associated with cognitive impairment and dementia (3).

Direct effects of microbial infection on vascular wall cells might include cell lysis, transformation, lipid accumulation, proinflammatory changes, and augmentation of procoagulant activity. Indirect systemic effects may involve induction of acute-phase proteins, establishment of a prothrombotic state, hemodynamic stress caused by tachycardia, increased cardiac output, or a regional inflammatory activation in response to systemic endotoxemia and cytokinemia (4). Chlamydia pneumonia (C. pneumonia) is an intracellular pathogen and an important cause of respiratory tract infections in humans and more recently it has been associated with chronic diseases such as atherosclerosis. Numerous studies have been performed to show the "infectious" hypothesis of atherosclerosis by direct detection of the organisms within atheromatous plaques by seroepidemiological estimation and by animal, immunological and antibiotic interventional studies (5).

The relation between C. pneumoniae infection and asymptomatic carotid atherosclerosis was examined and results showed that the detection of C. pneumoniae seems to be a first-choice method to identify the patients at risk for endovascular chlamydial infection (6). The results suggested that carotid atherosclerosis, atherogenic lipoproteins, and C. pneumoniae infection as documented by the IgG and IgA seropositivity may be vascular dementia risk factors (7).

This study aimed at assessing the problem of cognitive impairment and executive dysfunction among the diabetic elderly and their relation with C. pneumoniae infection, level of serum acute inflammatory factors IL-1β and C reactive protein (CRP) and carotid blood flow.

Method
The study was a case control study conducted among two groups; a case group consisted of 60 elderly diabetic patients and 30 control participants. Patients were previously diagnosed as diabetic patients and on medical treatment. As for the control group it involved 30 elderly subjects, with no apparent evidence of disease after medical history, examination, and selected investigations. Patients who have not completed all phases of and scales needed for the study, or who refused to participate, and patients on regular medications known to affect the inflammatory markers, were excluded from the study.

Each participant was subjected to comprehensive geriatric assessment including detailed history, complete examination, mental state examination using the Arabic version (8) (El Okl 2002) of the Mini Mental State Examination (MMSE) (9), functional assessment using Activities of Daily Living (10) and Instrumental activities of daily living (IADL) (11).

Then each participant was subjected to the following tests for assessing executive functions:

I- Block design test (12).
II- Digit span subtest -Forward (12).
III- Digit span subtest-Backward (12).
IV- Animal naming task (13).
V- Clock drawing test (14).
VI- Contrast program test (15).

Participants were subjected to Electrocardiography (ECG). Resting standard 12- lead ECG was taken, then they were instructed to fast 12-14 hours. The following day 10 ml of venous blood was collected by venipuncture. Serum was separated by centrifugation and divided into two samples; the first sample was used for measurement of fasting blood sugar, kidney function, and liver function, while the second sample was frozen at -20°C until assayed in the central laboratory of Ain Shams University hospital. Serum level of Lipid profile (total cholesterol, HDL, LDL and TGD), CRP, IL-1β and Anti-Chlamydia Pneumoniae IgG levels were measured using enzyme linked immunosorbent assay (ELISA).

Statistical Analysis:
Analysis of data was performed by using the 14th version of Statistical Package for Social Science (SPSS). Description of all data in the form of mean (M) and standard deviation (SD) for all quantitative variables was obtained as well as frequency and percentage for all qualitative variables. Comparison between quantitative variables was done using t-test to compare the two groups and ANOVA (analysis of variance) to compare more than two groups. Post Hoc test was done to detect the least significant difference. Comparison of qualitative variables was done using the Chi-square test. Correlation coefficient also was done to find linear relation between different variables using r-test or Spearman correlation co-efficient.

Significant level was measured according to P value (probability); 
P>0.05 insignificant, P<0.05 significant and p<0.01 highly significant.

Results
The two studied groups had no statistical significant difference as regards age, level of education and smoking status (p<0.05).

Comparing both groups as regards executive functions revealed that among cases the mean score of all
<table>
<thead>
<tr>
<th>GROUPS</th>
<th>Range</th>
<th>Mean</th>
<th>± SD</th>
<th>T-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>t</td>
<td>P-value</td>
<td></td>
</tr>
<tr>
<td>Block design</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>0.0 – 25.0</td>
<td>6.433</td>
<td>± 6.910</td>
<td>-0.381</td>
</tr>
<tr>
<td>Group II</td>
<td>0.0 – 17.0</td>
<td>6.967</td>
<td>± 4.672</td>
<td></td>
</tr>
<tr>
<td>Verbal fluency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>0.0 – 4.0</td>
<td>3.700</td>
<td>± 0.869</td>
<td>-0.554</td>
</tr>
<tr>
<td>Group II</td>
<td>1.0 – 4.0</td>
<td>3.800</td>
<td>± 0.664</td>
<td></td>
</tr>
<tr>
<td>Clock drawing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>0.0 – 7.0</td>
<td>3.245</td>
<td>± 3.192</td>
<td>-0.885</td>
</tr>
<tr>
<td>Group II</td>
<td>0.0 – 7.0</td>
<td>3.929</td>
<td>± 3.377</td>
<td></td>
</tr>
<tr>
<td>Contrast program</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>0.0 – 10.0</td>
<td>8.033</td>
<td>± 2.571</td>
<td>-0.272</td>
</tr>
<tr>
<td>Group II</td>
<td>0.0 – 10.0</td>
<td>8.200</td>
<td>± 3.067</td>
<td></td>
</tr>
<tr>
<td>Digit span</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>0.0 – 11.0</td>
<td>4.000</td>
<td>± 3.075</td>
<td>-0.439</td>
</tr>
<tr>
<td>Group II</td>
<td>0.0 – 11.0</td>
<td>4.333</td>
<td>± 3.968</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Comparison between the two groups as regards executive functions

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>IL1β</th>
<th>CRP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
<td>P-value</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>-0.153</td>
<td>0.243</td>
</tr>
<tr>
<td>Group II</td>
<td>0.191</td>
<td>0.312</td>
</tr>
<tr>
<td>Verbal fluency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>-0.133</td>
<td>0.310</td>
</tr>
<tr>
<td>Group II</td>
<td>-0.213</td>
<td>0.259</td>
</tr>
<tr>
<td>Clock drawing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>0.056</td>
<td>0.701</td>
</tr>
<tr>
<td>Group II</td>
<td>0.057</td>
<td>0.775</td>
</tr>
<tr>
<td>Contrast program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>-0.405</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>Group II</td>
<td>-0.229</td>
<td>0.224</td>
</tr>
<tr>
<td>Digit span</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>-0.123</td>
<td>0.350</td>
</tr>
<tr>
<td>Group II</td>
<td>-0.439</td>
<td>0.015</td>
</tr>
</tbody>
</table>

Table 2: Correlation between the executive function tests and IL1β and CRP levels
tests was lower among cases than controls but the differences were not statistically significant (Table 1 previous page).

In both cases and controls the mean level of IL1b in participants with cognitive impairment was higher than among those without cognitive impairment, (189+95, 146+73) in cases and (153+44, 126+4) in controls. The same was found on studying the CRP levels (6.2+3, 5.2+3) in cases and (2.6+1, 3.6+2) in controls.

Correlating the results of the executive function tests with the level of IL1b and CRP revealed that among cases there was a significant positive correlation between verbal fluency score and CRP level and between contrast programming and IL1b (Table 2 previous page).

On the other hand correlating the executive function tests with C. pneumonia level revealed no significant correlation in both groups (P=0.05) (Table 3).

As regards the relation between the lipid profile and the executive functions, it was found that the level of HDL was correlating with the score of the block design test and contrast program in cases (Table 4 opposite). The MMSE score was correlated with the level of HDL level (r=0.3 and P=0.019); it was found also that the mean level of HDL is significantly lower among cases with cognitive impairment (47.7, 66.2mg/dl respectively).

Comparing both groups as regards Body Mass Index (BMI) and its relation to cognitive impairments revealed no significant difference between participants with cognitive impairment and those without as regards BMI category (Table 5 - page 8).

Studying the relation between the presence of atheromatous and cognitive impairment revealed that among cases 60% of cases with cognitive impairment had atheromatous plaque while among cases without cognitive impairment 34% only had plaques P=0.34. In the control group 50% of participants with cognitive impairment had plaques compared to 4% among those without cognitive impairment P=0.048.

Discussion
Discussing cognitive and executive functions among elderly diabetics has been demonstrated in several studies (18, 19).

The wide distribution of health promotion plans and measures leading to successful aging spotlight on the importance of dealing with reversible problems, especially affecting cognitive functions.
<table>
<thead>
<tr>
<th>GROUPS</th>
<th>Cholesterol</th>
<th></th>
<th>TG</th>
<th></th>
<th>HDL</th>
<th></th>
<th>LDL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
<td>P-value</td>
<td>r</td>
<td>P-value</td>
<td>r</td>
<td>P-value</td>
<td>r</td>
<td>P-value</td>
</tr>
<tr>
<td>Block design</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>0.172</td>
<td>0.189</td>
<td>0.416</td>
<td>&lt;0.001*</td>
<td>0.486</td>
<td>&lt;0.001*</td>
<td>0.184</td>
<td>0.160</td>
</tr>
<tr>
<td>Group II</td>
<td>-0.047</td>
<td>0.806</td>
<td>-0.153</td>
<td>0.421</td>
<td>-0.185</td>
<td>0.328</td>
<td>0.318</td>
<td>0.087</td>
</tr>
<tr>
<td>Verbal fluency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>-0.041</td>
<td>0.758</td>
<td>0.069</td>
<td>0.600</td>
<td>0.176</td>
<td>0.177</td>
<td>0.095</td>
<td>0.472</td>
</tr>
<tr>
<td>Group II</td>
<td>-0.144</td>
<td>0.447</td>
<td>0.042</td>
<td>0.824</td>
<td>-0.054</td>
<td>0.778</td>
<td>-0.040</td>
<td>0.835</td>
</tr>
<tr>
<td>Clock drawing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>-0.114</td>
<td>0.436</td>
<td>0.097</td>
<td>0.509</td>
<td>0.117</td>
<td>0.423</td>
<td>-0.101</td>
<td>0.488</td>
</tr>
<tr>
<td>Group II</td>
<td>0.242</td>
<td>0.214</td>
<td>0.097</td>
<td>0.624</td>
<td>-0.165</td>
<td>0.400</td>
<td>-0.176</td>
<td>0.369</td>
</tr>
<tr>
<td>Contrast program</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>-0.085</td>
<td>0.521</td>
<td>0.171</td>
<td>0.191</td>
<td>0.327</td>
<td>0.011*</td>
<td>0.177</td>
<td>0.175</td>
</tr>
<tr>
<td>Group II</td>
<td>0.270</td>
<td>0.149</td>
<td>0.137</td>
<td>0.471</td>
<td>0.063</td>
<td>0.743</td>
<td>0.020</td>
<td>0.915</td>
</tr>
<tr>
<td>Digit span</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>0.189</td>
<td>0.149</td>
<td>0.079</td>
<td>0.551</td>
<td>0.166</td>
<td>0.205</td>
<td>0.290</td>
<td>0.024*</td>
</tr>
<tr>
<td>Group II</td>
<td>0.101</td>
<td>0.595</td>
<td>-0.115</td>
<td>0.546</td>
<td>-0.038</td>
<td>0.844</td>
<td>0.139</td>
<td>0.465</td>
</tr>
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</table>

Table 3: Correlation between the executive function tests and C. pneumonia
<table>
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<th>BMI</th>
<th>Obese</th>
<th>Overweight</th>
<th>Normal</th>
<th>Underweight</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>2</td>
<td>18</td>
<td>20</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>%</td>
<td>3.33%</td>
<td>30.00%</td>
<td>33.33%</td>
<td>33.33%</td>
<td>100.00%</td>
</tr>
<tr>
<td>N</td>
<td>1</td>
<td>17</td>
<td>21</td>
<td>2</td>
<td>50</td>
</tr>
<tr>
<td>%</td>
<td>3.33%</td>
<td>28.33%</td>
<td>33.33%</td>
<td>33.33%</td>
<td>100.00%</td>
</tr>
<tr>
<td>N</td>
<td>7</td>
<td>5</td>
<td>9</td>
<td>5</td>
<td>26</td>
</tr>
<tr>
<td>%</td>
<td>23.33%</td>
<td>16.67%</td>
<td>30.00%</td>
<td>16.67%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chi-square</th>
<th>X²</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>3.114</td>
<td>0.374</td>
</tr>
<tr>
<td>Normal</td>
<td>0.00</td>
<td>1.056</td>
</tr>
<tr>
<td>Overweight</td>
<td>83.33</td>
<td>0.788</td>
</tr>
</tbody>
</table>

Table 5: Relation between cognitive impairment and BMI
The importance of assessing the relationship between cognitive and executive function and coronary risk factors, chlamydia pneumonia infections, acute inflammatory factors, and carotid blood flow in elderly diabetic patients is to determine whether early prevention is possible thus decreasing cost and complications.

It was important to put into consideration other confounding factors that could affect cognitive and executive function, such as sex, age, education, smoking and drugs being used, as well as presence of visual and auditory impairment (16, 17). Matching between cases and controls regarding those factors were considered and there was no statistically significant difference as regards age, education and smoking.

Regarding C. pneumoniae infection which has been contemplated as a risk factor for cognitive and executive impairment, this study has examined the relation between a variety of cognitive and executive function tests covering all executive function domains and presence of C. pneumoniae IgG antibody. The importance of asserting the relation between C. pneumoniae and cognitive and executive function is exploring possibilities of prophylactic antibiotic therapy and assessing benefits versus side effects of such treatment.

Correlating the executive function tests with C. pneumoniae level revealed no significant correlation. This supports Carusone et al., 2004(20) and Strandberg et al., 2003(21) although still studying the impact of C. pneumoniae is an important issue for studying.

Acute inflammatory markers have long been implicated as a risk factor for cognitive impairment. This study has found that in both cases and controls the mean levels of IL1b and CRP in cases with cognitive impairment was higher than among those without cognitive impairment. On the other hand correlating the results of the executive function tests with the level of IL1b and CRP revealed that among cases there was a significant positive correlation between verbal fluency score and CRP level and between contrast programming and IL1 b. Putting into consideration the results of previous studies about this; there is no independent association with baseline CRP levels. It is possible that cognitive impairment may result from the vascular disease rather than a direct association with CRP(22). Different sample size and using a different battery of tests to assess cognitive function may attribute to the difference. On the other hand other studies (23) reported no evidence of a link between CRP, a marker of inflammation, and decrements in cognitive function. A need of further studies is recommended to settle this relationship.

Regarding the relation between the lipid profile and executive functions, it was found that the level of HDL was correlating with the score of the block design test and contrast program in cases. This support Van Exel et al., 2002(24) who concluded that part of the association between HDL cholesterol and cognitive function is independent of atherosclerotic disease. Putting into consideration the assessing of the lipid profile among all elderly individuals in a regular pattern especially diabetic patients, can be an important issue of consideration in predicting cognitive and executive dysfunction.

Similarly increased BMI is another coronary risk factor that has been researched as a risk factor for cognitive impairment as well. Despite that it was agreed that BMI is positively related to cognitive impairment in young and middle aged adults; recent evidence has shown that this may not be the case for elderly. On the other hand Te-Pin et al., 2008(25) reported that low BMI with chronic comorbidity was independently associated with poor cognitive performance.

The current study could not support the issue and this can be attributed to the small number of participants. Previous studies (26) have reported that poor cognitive performance is associated with plaques above 1 for all cognitive tests in men and this was supported by the current study and this may introduce the importance of evaluating the presence of carotid arteries among diabetic patients.

In conclusion: Levels of inflammatory markers were higher among diabetic elderly with cognitive impairment. Low HDL can be considered an important factor in developing cognitive and executive dysfunction. Cases with cognitive impairment had a higher percentage of atheromatous plaques.

Acknowledgment: We acknowledge all our participants.

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Psychosocial characteristics and experience of discrimination and stigmatization among Spouses of HIV/AIDS Infected Husbands: A study from India

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Abstract

The strains of those caring for people with HIV/AIDS are enormous. The purpose of this study was to ascertain the sociodemographic characteristics of spouses of HIV/AIDS infected husbands, frequency of depression/depressive symptoms and the various correlates associated and the experience of discrimination and stigmatization. Thirty caregivers were recruited from a rehabilitation agency where their husbands were admitted. Spouses were interviewed using structured instruments. The majority were within 40 years of age; with primary education, married for the last 5 years with good- satisfactory marital life. 24(80%) tested as positive and were aware of the implications of their illness; 27 (90 %) fulfilled a criteria for a depressive disorder. It was found that in almost all settings of life stigma and discrimination was seen. However the community reactions were comparatively lesser than in other settings. The implications of the findings are discussed in the light of interventions proposed for the spouses.

Key words: HIV AIDS, Depression, Discrimination, Stigmatization, Community attitudes

Introduction

Current research has tended to exclude the well being of caregivers in favour of focusing on HIV patients. The carers are the people formally and informally giving care to the infected people for their physical, mental and social well-being. The impact of caring for a chronically ill person or a person with a disability, on the physical and mental health of the caregivers, has long been recognized and studied (Baumgarten(1989); Pinquart & Sörensen 2003; Pinquart & Sörensen 2007; Prachakul & Grant 2003; Pruchno 1990; Saunders 2003 ; Savage & Bailey 2004; Vitaliano et al 2003).

On the whole caregivers were significantly depressed, experienced more stress, and had lower self-efficacy than non-caregivers (Pinquart & Sörensen 2003).

Results from review studies have suggested that socio-demographics, such as gender, lower socio-economic levels, relationship between caregivers and patients, lack of social support, poorer physical health status and risky health behaviours are associated with mental ill-health of caregivers(Connell et al 2001 ; Cooper et 2007; Haley 2003; Klassen et al 2007; Savage & Bailey 2004; Van der Vooopr, et al 2007).

The caregivers in many situations are predominately female and the people they care for are usually their partners or older adults. The spouses are one of the main care givers in the family. The strains on those caring for people with HIV/AIDS are enormous. The carers are a precious resource. The quality of care they provide and their ability to do so over a sustained period depends on the protection of their own well-being and morale.
The acute and chronic aspects of HIV disease place profound demands on the spouses for practical support. The unpredictability of the disease, the uncontrollability of symptoms and the debilitating effects of disease contribute to stress and depression of spouses (Cohen, & Lazarus1979). Unlike professional caregivers, partners do not have the protection of a limited work day or professional distance. In addition many spouses have not taken care of a seriously ill person, nor have they seen someone die.

Care giving to people with chronic illnesses has been found consistently to have negative effects on the informal care giver’s health and well-being. It has been documented that care givers experience various physical health problems; depression; disruption in interpersonal relationships, social life; work life and financial strain associated with care giving (Given & Given 1998).

Depressive mood is the distressing emotion most frequently reported in care givers of people with AIDS (Given & Given 1998; Bergman-Evans 1994; Knop et al 1998; Turner & Catania 1997; Flaskerud & Tabora 1998; Wight 2000; Land et al 2003).

In a study where depressive mood was considered an outcome measure it also found it was a strong predictor of poorer physical, social and role functioning, as well as perceived physical health (Flaskerud & Tabora 1998). Although this is well recognized in principle, care for the carers is rarely given the priority it deserves.

Stigmatization and discrimination
Social reactions to people with AIDS have been overwhelmingly negative. Stigma is triggered by many forces, including lack of understanding of the disease, myths about how HIV is transmitted, prejudice, lack of treatment and irresponsible media reporting on the epidemic. HIV/AIDS related stigma and discrimination also interact with pre-existing fears about contagion and disease. The existence of HIV/AIDS-related stigma has been widely documented all over the world (Herek & Capitiano 1999; Klein et al 2002; Snyder et al 1999; Herek 1999; McGrath et al 1993; Ambati et al 1997; Bharat & Aggleton 1997; Bharat et al 2001).

HIV infection fits the profile of a condition that carries a high level of stigmatization (Herek 1999; Goffman 1963; Jones et al 1988).

According to UNAIDS, HIV/AIDS related stigma and discrimination are linked to the actions and attitudes of families, communities, and societies (UNAIDS, 2002).

The impact of HIV/AIDS on women is particularly acute. The existing social inequalities, especially those of gender, sexuality, and race are at the root of HIV-related stigma. In many developing countries, women are often economically, culturally and socially disadvantaged and lack equal access to treatment, financial support and education.

HIV-related stigma manifests itself in various ways. HIV-positive individuals, their loved ones, and even their caregivers are often subjected to rejection by their social circles and communities when they need support the most. Stigmatized individuals may suffer discrimination that can lead to loss of employment and housing, estrangement from family and society, and even increased risk of violence (Herek 1999; Gielen et al 1997; Zierler 1997). The forms of discrimination against women included being refused shelter; denied a share of family property; denied access to treatment and care; being blamed for husband’s HIV diagnosis when the diagnosis is made soon after marriage (Bharat 1996). HIV/AIDS related stigma compromises the well-being of people living with the disease.

Family responses to the infected relative are influenced by community perception of the disease and such responses included fear of isolation and ostracism (McGrath et al 1993; Bharat & Aggleton 1999 Warwick et 1998) leading to concealment of diagnosis leading to stress and depression within the family, (Bharat & Aggleton 1999).

The present study aimed to assess the frequency of occurrence of depressive symptoms/clinical syndrome and frequency of occurrence of stigma and discrimination and its nature in spouses of HIV/AIDS infected persons and the various correlates of the same.

Materials and Methods
The sample was recruited from the Rehabilitation Centre for HIV/AIDS, Mangalore which comprised 30 spouses of HIV/AIDS infected husbands who were admitted to the facility for management of infections and other symptoms. Permission was sought from the authorities of the centre and as the study did not involve any interventions, no ethical clearance was required at that period when the study was conducted. The purpose and format of the study were explained and consent was taken. Of the forty five who were approached to participate in the study fifteen declined. Interviews were conducted in privacy. A clinical interview was conducted to generate ICD-X diagnosis. The interview seemed to provide an outlet for the expressions of emotions for the participants, as many were overwhelmed with the experience of care giving and worried about their own health and future. Consequently each interview lasted from 1.5-2 hours. Extensive notes were taken to record the qualitative comments of the spouses, in addition to their responses to the structured questionnaires. Those satisfying the inclusion criteria were taken. Standardized tools were used for sociodemographic data which included details such as age of the spouse, education, and religion and employment status. Details such as the head of the family, family type, sero status of the spouse and child/children, reactions of the family, marital details such as duration of marriage and quality of marriage were recorded. In addition social support and coping strategies were also enquired about. To quantify depression, the Hamilton Rating
Scale for Depression (Hamilton 1960) and Beck’s Depression Inventory (Beck et al 1974) were used. The schedules to evaluate the experience of stigma and discrimination among wives of patients with seropositivity in various settings were assessed.

**Instruments**

**Hamilton Rating Scale for Depression - HDRS (1960)**

The Hamilton Depression Rating Scale has been the gold standard observer rated scale for the assessment of depression for more than 40 years. The Hamilton Depression Rating Scale (HAM-D) (Hamilton 1960) has become the most widely used depression severity rating scale in the world. It was originally published by Max Hamilton in 1960 (Hamilton 1960) to measure severity of depression in previously diagnosed depressed inpatients. Since that time, multiple versions of the scale have been created. In addition, structured interview guides, self-report forms, and computerized versions have been developed in an effort to standardize administration of the scale and improve the psychometric characteristics of the individual items. Many of the psychometric properties of the Hamilton depression scale are adequate and consistently meet established criteria. Internal reliability estimates ranged from 0.46 to 0.97. Retest reliability for the Hamilton depression scale ranged from 0.81 to 0.98. The 24-item version was used. Items on the HAM-D are scored 0 to 4. The rater enters a number for each symptom construct that ranges from 0 (not present) to 4 (extreme symptoms). The cut off is as follows: 0 - 4 normal, depending on age, education, complaints, 5 - 8 mild; 8 - 11 moderate; and 12 - 15 severe. Ratings are completed by the examiner on the basis of patient interview and observations.

**Beck Depression Inventory (Beck et al 1967)**

Beck Depression Inventory (BDI) (Beck et al 1974) is a 21 item, self rated inventory with each item rated with a set of four possible answer choices of increasing intensity. When the test is scored, a value of 0 to 3 is assigned for each answer and then the total score is compared to a key to determine the depression’s severity. The total score ranges from 0 to 84. Scores of 0 to 9 are considered minimal; 10 to 16, mild; 17 to 29, moderate; and 30 to 63, severe. Internal consistency has been high in numerous studies. The reliability figures here were above .90. Internal consistency studies demonstrated a correlation coefficient of .86 for the test items, and the Spearman-Brown correlation for the reliability of the BDI yielded a coefficient of .93. Validity is supported by correlation with other depression measures. Because it is a self-report instrument, it is sometimes used to screen for major depression, for instance in medical outpatients.

**Schedule to evaluate discrimination and stigma**

A schedule to tap the discrimination and stigma in various settings such as hospital, family, community, schools and work place was prepared by the authors after going through the previous literature related to the topic and in consultation with the experts who validated the same.

**Data Analysis**

Statistical analysis was carried out with the Statistical Package of Social Sciences (SPSS). Descriptive statistics were used to determine the background characteristics of the sample such as age, education, religion, employment status and family type. Mean scores were computed for depression. Due to small sample size appropriate statistics could not be applied.

**Results**

The mean age of the spouse was 33.6(S.D.7.94) with a range of 19-56 years and the infected husband was 36.00(S.D.7.78) with a range of 25-60 years. The majority of the spouses i.e., 50% were in the age group of 31-40 or 21-30 years (23%). As regards education 40% had primary education; 27% high school and about 20% had attended college. The distribution of religion of the spouses was 37% Hindus, 30% Christians and 23% Muslims and 10% from other religions.

Employment status of the spouses varied; working in semiskilled or unskilled jobs - 40%; professionals - 10% and rest were housewives; the majority were from a rural or semi urban background; 50% hailing from nuclear families and the rest from non-nuclear families. In 43%, the husbands and 33% of spouses were the main bread winners and 60% of husbands were the head of the family. The socioeconomic status ranged from lower to lower middle class.

The duration of marriage - 36% were married for 1-3 years and 47% were married between 3-10 years. Regarding the quality of marital life, 57% rated their marriage to be good-satisfactory.

Of the 26 spouses, who tested their blood for HIV, 24(80%) tested as positive and except for 17%, the rest were aware of the implications of their illness. There was not much difference in the duration of contact of HIV in husbands and their spouses. Among the spouses in 23.3% the duration of infection was less than 1 year; 20% >1-3 years; 20% >3-5 years and in 20.6% 5-10 years. Among the spouses who tested their children (mean number of children 1.2) 24(80%) tested as positive.

The most commonly reported physical manifestations among the spouses were: STD (17%); skin lesions (13%); fever and cough (10%); and lymphadenopathy (10%); and tuberculosis (7%).

The spouses described their emotional reactions towards their husbands after diagnosis was confirmed; 64% denied any emotions; 43% were angry; 30% sympathetic and 17% continued to care for their husbands as they had done earlier. Many of them reported more than one reaction.

In the sample 27(90%) fulfilled a criteria for a depressive disorder and 3(10%) a mixed state of depression and anxiety.
The mean BDI scores were 28.8 (S.D. 8.7) with an observed range of 14-53 and on the HDRS the mean were 45.4(S.D. 10.7) with an observed range of 30-69. On BDI 18(60%) fell in the moderate degree of depression and 36.7% a severe degree, on the other hand on HDRS all of them were in the severe category of depression.

The most frequently reported symptoms given in a rank order, were sadness -1 (95%); hopelessness -2 (85%); sleep problems - 3 (83%); guilt - 4(67%); blame oneself -5 (65%); being punished - 6(63%).

The coping strategies commonly utilized by spouses were consulting relatives/friends/professionals, 87%; pray to God, 80%; try to think of alternatives, 20%; and excess caffeine intake, 13%. The social support networks were poor. 37% reported just one or two members in their network from whom they could derive assistance, whereas about 43% had up to 5 members to contact in times of need.

Stigmatization and discrimination
The discrimination and stigma towards the spouses in the various settings and contexts are described separately. In all the contexts, the reactions towards the spouses were more than one.

Family context
The most common reactions of the family members toward the spouse is given in a rank order; 21 (70%) stigmatized the infected spouses as of loose character 1; 15(50%) physical isolation at home 2; 11(37%) denial of share of property 3; 9(30%) blamed as passing virus to others 4; and 6 (20%) had a severed relationship/deserted 5.

Social and educational settings
The nature of discrimination against children is given in rank order, 20 (67%) experienced discrimination and separation from others 1; 16 (53%) were prohibited to mingle with friends and others 2; 8 (27%) experienced denial of admission to institutions 3; 10 (9%) were dismissed from school 4.

Attitudes of the community towards the couple
The usual types of attitudes of discrimination towards the couple is put in a rank order 18(60%) stigmatization as loose character 1; 15(50%) labeling and name calling 2; 13 (43%) blocked entry to common areas 3; 13(43%) restricted from attending religious ceremony 3 and 3(10%) denial of death ritual to husbands 4.

Public/community reactions
Of the thirty spouses 11(37%) experienced reactions such as being insulted or teased by others 11(37%) and 11(37%) respectively and 8(27%) reported being belittled by the public.

<table>
<thead>
<tr>
<th>Variable</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>Mean Age of the spouse(wives)</td>
<td>33.6</td>
</tr>
<tr>
<td>S.D.</td>
<td>7.94</td>
</tr>
<tr>
<td>Range</td>
<td>19-56</td>
</tr>
<tr>
<td>Mean Age of Husbands</td>
<td></td>
</tr>
<tr>
<td>S.D.</td>
<td>7.78</td>
</tr>
<tr>
<td>Range</td>
<td>25-60</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
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</tr>
<tr>
<td>High school</td>
<td>27.00</td>
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<tr>
<td>College</td>
<td>20.00</td>
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<tr>
<td>Religion</td>
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<tr>
<td>Hindus</td>
<td>37.00</td>
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<tr>
<td>Christians</td>
<td>30.00</td>
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<tr>
<td>Muslims</td>
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<tr>
<td>Other</td>
<td>10.00</td>
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<tr>
<td>Employment status</td>
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<td>Semi-skilled</td>
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<tr>
<td>Housewives</td>
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<tr>
<td>Type of Family</td>
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<td>50.00</td>
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<tr>
<td>Non-nuclear</td>
<td>50.00</td>
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<tr>
<td>Main bread winner</td>
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<tr>
<td>Husband</td>
<td>43.00</td>
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<tr>
<td>Self (wives)</td>
<td>33.00</td>
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<tr>
<td>Others</td>
<td>24.00</td>
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<tr>
<td>Head of family</td>
<td></td>
</tr>
<tr>
<td>Husband</td>
<td>60.00</td>
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<tr>
<td>Others</td>
<td>40.00</td>
</tr>
<tr>
<td>Duration of marriage</td>
<td></td>
</tr>
<tr>
<td>&lt; 1 year</td>
<td>13.00</td>
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<tr>
<td>1-3 years</td>
<td>23.00</td>
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<tr>
<td>3-5</td>
<td>20.00</td>
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<tr>
<td>5-10</td>
<td>27.00</td>
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<tr>
<td>&gt; 10</td>
<td>17.00</td>
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</tbody>
</table>

* Figures are in percentages

Table 1: Distribution of Sociodemographic characteristics of the sample
Figure 1: Distribution of Age groups in the sample

Figure 2: Quality of Marital life
Figure 3: Distribution of spouses blood result

<table>
<thead>
<tr>
<th>Variable</th>
<th>BDI*</th>
<th>HDRS$</th>
</tr>
</thead>
<tbody>
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<td>Mean</td>
<td>28.8</td>
<td>45.4</td>
</tr>
<tr>
<td>S.D.</td>
<td>8.7</td>
<td>10.7</td>
</tr>
<tr>
<td>Observed Range</td>
<td>14-53</td>
<td>30-69</td>
</tr>
</tbody>
</table>

**Severity**
- Normal: --
- Mild: 1
- Moderate: 18
- Severe: 11
- Total: 30

* BDI- Beck Depression Inventory
$ Hamilton Depression Rating Scale

Table 2: Distribution of Mean, S.D. and Severity of BDI & HDRS

Many had more than one symptom listed

Table 3: Distribution of Common Depressive Symptoms
Hospital and health care settings
The total sample of thirty spouses 16(37%) reported that they and their husbands were refused treatment; followed by physical isolation in the wards 15 (50%); refused admission in hospitals 13(43%); easily discharged from the hospitals 13(43%) and 10(33%) experienced the unnecessary use of protective gear by hospital staff.

Work settings
Of the thirty spouses 20(67%) of them faced social distance in the society; followed by the 15(50%) labeling and name calling; 8(27%) removed from their job; 5(17%) forced resignation and 5(17%) withdrawal of health insurance benefit.

Discussion
In the present study both the infected husbands and their wives were in their third or fourth decade of life and in stage IV of family life cycle i.e., couple with preschool children (Olson, 1989). In this stage of life and family life cycle the sources of stress are multiple. Most of them were married for the last 5 years and usually in the early phase of marriage; partners are still in
the process of building up close relationship with spouses. In addition to developing careers, caring for their dependent children and other members if they are in an extended family. In this study fifty percent were from joint or extended families. Thus spouses of people with AIDS are premature in their care giving role due to their age compared with traditional caregivers. This premature characteristic of care giving can create additional stress over and above the stress associated with care giving.

In a high proportion of the sample, spouses suffered from moderate to severe depression, with depressive cognitions and sleep disturbance as the formal assessment indicated. Periods of extreme distress, grief, despair, hopelessness and helplessness may be common among care givers. In addition many of them had various physical symptoms and infections related
Community responses to couple

![Diagram showing different responses of the community towards the couple.

- Community to couple
- Loose character
- Labelling
- Blocked entry places
- Restricted ceremonies
- Denial of death rituals

Figure 8: Community responses towards the couple

Community reactions to spouses

![Pie chart showing different reactions of the community to the spouses.

- Community reactions
- Insulted
- Teased
- Belittled

Figure 9: Public responses to couple
AIDS. The disease progression in their partner portends not just the loss of the partner but their own psychological vulnerability to the extent they see their partner’s disease progression as a forecast of their own future and they are physically vulnerable as their own disease progresses (14). HIV+ care givers whose own health deteriorates are likely to be concerned about being able to provide care while also needing to receive care. Depressive mood is the distressing emotion most frequently reported in care givers of people with AIDS (Given, & Given 1998; Bergman-Evans 1994; Knop et al 1998; Turner & Catania 1997; Flakerud, & Tabora 1998).

Sleep problems in caregivers of people with AIDS, occur frequently and seem to be associated intimately with the care giving experience (Knop et al 1998; Flakerud, & Tabora 1998). Sleep problems are also highly correlated with depressive mood and anxiety (McEnany et al 1996). The existing literature...

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**Figure 10: Responses from health care settings**

**Figure 11: Stigmatization & Discrimination in Work settings**

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suggests that caring for a loved one with human immunodeficiency virus (HIV) presents unique demands for the caregiver. Because many HIV caregivers are sexual partners of the care recipients, they may struggle with concerns about their own health risks in addition to that of their partner (Turner, & Catania 1996).

The physical and psychiatric morbidity of care giving have been recognized and are usually transient and circumscribed to the period of care giving. But in the case of informal caregivers, especially in spouses, it is not transient and circumscribed. These findings explain the presence of depressive symptoms associated with care giving in those without a prior psychiatric history (Schulz, et al 1990). Spouses who experience a conflict between their work and care giving roles are faced with a dilemma. On the other hand, spouses have major commitment to their partner’s well-being.

In this study many spouses tried to cope with stress either by consulting relatives, friends or professionals or praying to God. Seeking social support and religious coping are strategies that involve elements of both problem-focused and emotion-focused coping. Support seeking may include asking for advice, concrete aid, emotional support, or justification for one’s perceptions and/or actions (Thoits, 1986). Similarly, religious coping, which includes prayer, is generally considered a form of emotion-focused coping, but may involve asking for advice or even concrete aid. The study of religious coping strategies is as yet in its infancy (Pargament 1997). In general, religious coping may be most helpful with uncontrollable stressors (Aldwin 1994) or people facing chronic stressors such as caregiving, especially those in lower socioeconomic status groups (Cupertino et al 2000).

It is evident from this study that the spouses were discriminated against in all the settings, intimate as well other more impersonal or public settings. In most societies, AIDS is associated with groups whose social and sexual behaviour does not meet with public approval (Ambati et al 1997). Negative responses and attitudes towards people suffering from AIDS are strongly linked to general levels of knowledge about AIDS and HIV and, in particular, to the causes of AIDS and routes of HIV transmission (Ambati et al 1997). Studies have reported that younger and more highly educated people typically manifest lower levels of HIV-related stigma than older people and those who are less educated (Herek 1999).

With these findings in mind, it is perhaps not surprising that virtually every Indian setting in which HIV-positive people interact with other people provides a back-drop for discrimination, stigmatization, and denial. Studies have documented HIV/AIDS-related DSD in contexts such as the family, the community (Bharat & Aggleton 1999; Bharat et al 2001; Bharat 1996; Warwick et al 1998); the health care system, (Tirelli et al 1991; Shisam 1993; Daniel & Parker 1990; Ogola 1990; Bharat 1996) and the workplace (Chinai 1995).

Due to stigma and HIV/AIDS-related discrimination, the rights of people living with HIV/AIDS and their families are frequently violated simply because they are known, or presumed, to have HIV/AIDS. This violation of rights hinders the response and increases the negative impact of the epidemic. Freedom from discrimination is a fundamental human right founded on principles of natural justice that are universal and perpetual. The basic characteristics of human rights are that they are inherent in individuals because they are human and that they apply to people everywhere (Fact Sheet: UNAIDS HIV/AIDS 2001). Stigmatization can cause denial of treatment to patients. This study is limited by small convenience sampling, the number of participants involved and the settings of the study. This may limit the generalizability of the results. Nevertheless, the study throws some light on the psychological status of the spouses of HIV+/AIDS infected husbands and the various correlates.

**Implications**

This study has important therapeutic implications. Detailed assessment of caregivers should be a routine which helps in a comprehensive intervention programme. Therapies should be tailored to the spouses or other caregivers’ psychosocial, cultural and economic situation. Mental health professionals should be actively involved in treating depressive mood, anger, anxiety and sleep problems in care givers.

To conclude, the level of care giving needed by persons with AIDS can be all-consuming and utterly exhausting emotionally as well as physically. Health professionals can play an important role validating the caregiver’s experience, helping them anticipate what is ahead, and guiding them to obtain additional practical and emotional support. Legal protections are essential components of the societal response to stigma and discrimination. The recognition of the negative consequences of HIV/AIDS stigma, for individuals as well as for public health, have led to the enactment of statutory provisions for people living with HIV disease in many Western countries and we have a long way to go before we achieve a society where HIV related discrimination ceases to exist.

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Analysis of the correlates of Autistic Disorder among children in three Arabic countries

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Abstract

Background and aim: Although Autistic Disorder (AD) is a global disorder, relatively little is known about its cultural comparison in Arab countries. The present research examined influences of many independent variables such as country of origin, gender, IQ, educational and socioeconomic status on the severity of autistic symptoms and challenging behaviors in Arab children.

Method: We examined a sample of 60 Arab children (38 boys and 22 girls) from 3 countries (22 Jordanians, 19 Saudis and 19 Egyptians). The diagnosis of Autistic Disorder was based on DSM-IV criteria supplemented by direct observation according to the Indian Scale for Assessment of Autism (ISAA) and assessment of Intelligent Quotient (IQ). Parents rated their child on the Achenbach Child Behavior Checklist (CBCL).

Results: Analysis of variance (ANOVA) showed a significant main effect of country of origin, and intellectual functions, particularly emotional responsiveness of ISAA and externalizing behavior problems of CBCL. The socioeconomic level and the gender had a significant effect on the communication problems of ISAA and externalizing behavior problems of CBCL.

Conclusions: The country of origin, gender and the socioeconomic level had a significant effect on some of the autistic symptoms and maladaptive behavior in autistic children. Although these findings are preliminary in nature, psychiatrists and parents need to identify which factors cause difficulty to the autistic children. Such an undertaking is likely to help formulate diagnosis and treatment techniques as well as provide a basis for assessment of the magnitude of ASD in the Arab world.

Keywords: Autistic disorder, sociocultural factors, country of origin, IQ

Introduction

Autism Spectrum Disorders (ASD) is referred to as Pervasive Developmental Disorders (PDD) in the Diagnostic and Statistical Manual of Mental Disorders (4th edition, text revised; DSM-IV-TR) and the ICD-10 Classification of Mental and Behavioral Disorders, Clinical Descriptions and Diagnostic Guidelines (1,2). The concept of ASD comprises autism, Asperger syndrome, and PDD not otherwise specified (PDDNOS), including atypical autism. ASD is a disorder of the developing brain, mainly presenting with a distinct pattern of social deficits, communication impairment, and rigid ritualistic interests (2). These symptoms often manifest within the first three years of life, and persist throughout the life span. Associated with mental retardation and seizure disorder in a significant number of cases, it is influenced mainly by genetic factors: 90% of the variance is said to be caused by genetic factors (3). Since the epidemiological data on autism was published (4), a number of studies have been reported, but the prevalence rates vary considerably from one study to another. While infantile autism is known to occur in 3-4 per 10,000 children (5), atypical autism and the spectrum of ASD are considered to have a much higher prevalence of up to 60 per 10,000 (6). In the UK, current estimates suggest that ASD may be present in about 1% of the population (7,8). As regards the gender difference, recent studies on ASD report a male to female ratio of approximately 3:1 (8). Sex differences are reported to be more pronounced when autism is not associated with learning disability(9,10). Among coexisting moderate to severe learning disability, the median male to female ratio is approximately 2:1, while within the normal range of intellectual functioning it is approximately 5-6:1 (6). Since the 1970s, there has been a dramatic rise in the number...
of reports documenting increasing rates of ASD cases, especially in Western countries (11); however, few reports have been published about the occurrence of autism in developing countries, especially those of the Middle East, a gap that underscores the need for increasing awareness among professionals in these countries (12). This is the first study that attempts to examine the problem in three Arabic countries: Egypt, Saudi Arabia and Jordan. Indeed, a great deal of similarity between the nations exists. Foremost among these similarities are language and religion given that they share a sizeable portion of the Arabic heritage. Lastly, there is good relations and mutual respect between the people of the three countries. Notwithstanding, there is a room for differences in cultural, ethical and social structures. The national income of Saudi Arabia is much higher than that of Egypt and Jordan, while the rate of social change is faster in Egypt and Jordan than that of Saudi Arabia. In comparison to Saudis, Egyptians and Jordanians are less conservative. This could be seen in (manifold) respect pertaining to the degree of following customs and traditions. (13). The present study examined influences of many independent variables such as country of origin, gender, IQ, educational and socioeconomic status on the severity of autistic symptoms and challenging behaviours in Arab children with ASD. Such an undertaking is likely to help formulate diagnosis and treatment techniques as well as provide a basis for assessment of the magnitude of ASD in the Arab world.

Patients and Methods Participants
We examined 60 children (38 boys and 22 girls) with a diagnosis of autistic disorder, who were recruited from the Center for Early Diagnosis of Children’s Disabilities (EDCD), Amman Jordan (22 children), child psychiatry settings in Mansoura University Hospital, MUH, Egypt (19 children) and Al-Ahsa Psychiatric Hospital, Saudi Arabia (19 children). To be eligible for the study, patients had to present with the typical triad of symptoms of autism: social deficits; communication impairment; and rigid ritualistic interests. Diagnosis of autistic spectrum disorders (also referred to as pervasive developmental disorders) was based on the DSM-IV-TR criteria (2) and included the categories of autistic disorder; Asperger’s disorder and Pervasive Developmental Disorder Not Otherwise Specified (ASDNOS). Patients were diagnosed by child psychiatrists in each country after direct interviews with the child and the parents. Autistic disorder was diagnosed in 34 boys and 21 girls, the PDDNOS in four boys and only one girl. None was diagnosed with Asperger’s disorder. The clinical diagnosis was corroborated using the Arabic version of the Indian Scale for Assessment of Autism (ISAA). Given the range in age and level of ability, various intelligence tests were used to assess intellectual functioning. In 60 patients, IQ was assessed using the Arabic version of the Wechsler Intelligence Scale for Children (WISC) (n=22) and the Stanford Binet Intelligence Test (n=33). Clinical assessment was used to define intellectual disabilities in five participants. In all, 43 patients were taking psychotropic medications for the purpose of comorbid disorders. The study was approved by the local medical ethics committee in the three countries and informed consent from the parents of the children had been obtained.

Tools
A semi-structured questionnaire The questionnaire includes the various demographic and academic characteristics including age, gender, educational status (that includes whether the autistic child attended a special school or not and parental educational status either above or below secondary school; entry of these variables combined resulted in 6 probable possibilities) and socioeconomic status probes such as family size (less than 5 members or more), income (satisfactory, unsatisfactory), residence (rural or urban), parental occupational status (professional or semi-professional occupations or manual workers). Entry of these variables combined resulted in 8 probable possibilities.

Indian Scale for Assessment of Autism (ISAA)
The ISAA was commissioned by the National Institute for the Mentally Handicapped (14) as a suitable tool for identification and rating the severity of autism in developing countries as opposed to the present tests that have mostly Western parameters e.g., Childhood Autism Rating Scale (CARS). Children were rated according to the ISAA, based on behavioral observation and interaction with the examiner and parents. The ISAA evaluation was completed by an independent qualified child psychiatrist, blinded to the DSM-IV-TR diagnosis. The scale has 40 items, divided under six domains: social relationship and reciprocity; emotional responsiveness; speech, language and communication; Behaviour problems; Sensory aspects and Cognitive problems. Participants’ behaviors were rated on a five point scale (rarely, sometimes, frequently, mostly, and always). According to the ISAA manual, autism is defined by a score of 70 points. Total scores of 70 to 106 indicate mild autism, 107-153 moderate autism, and scores of 153 and above indicate severe autism. The cut-off point had a sensitivity of 94.3% and a specificity of 92.0%. The Cronbach alpha coefficient of internal consistency was 0.97 and the inter-rater reliability coefficient was 0.83 (p<0.001). The criterion test validity of ISAA was determined by comparison of total scores obtained on the tool with those on CARS. Pearson Product moment correlation was computed and the resulting correlation r = 0.77 (p<0.001) reveals that ISAA has as high degree of validity as that of CARS.

The child behavior checklist (CBCL)
The CBCL is a standardized instrument for the assessment of a child’s behavioral problems. It is suitable for children aged from 4 years to 16 years and can be completed in 15-17 minutes by the parents. The instrument is easily
applied, and there are many data about its high test-retest reliability and discriminate validity, including the Arabic version (15). The items of the CBCL are divided into eight domains, each of which takes different aspects of behavior into account: withdrawn, somatic complaints, anxious/depressed state, social problems, thought problems, attention problems, delinquent behavior and aggressive behavior. Most of the eight domains within the CBCL can be subdivided into two subscales: internalized problems and externalized problems. These two subscales reflect a distinction between inhibited/anxious behavior (internalizing) on the one side and aggressive, antisocial, behavior (externalizing) on the other side. The internalizing subscale is a summation of withdrawn, somatic, complaints, and anxious/depressed state. The externalizing subscale is comprised of aggressive behavior and delinquent behavior (16). In addition, the sexual behavior problems in boys and girls were identified by the parents' reports on the CBCL sex problems scale (16). Norms for these standardized questionnaires in the Arab countries have not yet been established. According to the American norms, standardized T scores of 65-69 fall into the ‘borderline clinical’ range, while scores of 70 and above can be regarded as clinically significant (16).

Procedures Parents, who were largely mothers, were interviewed by three experienced child psychiatrists employing a clinical interview according to DSM-IV-TR criteria for autistic disorder in the first visit. The second visit involved IQ assessment of the child while ISAA and CBCL forms were self-completed by one of the parents, mostly mothers.

Results Sample characteristics Most of the autistic children belong to families of low socioeconomic standard living in urban areas with unsatisfactory income (85%), especially in Egypt and Jordan and lower parental education with occupying of non-professional jobs. Mean age of the total sample was 8.2 ± 2 with a range from 4 to 11 years. The mean age of the males was 7.9 ± 2.1 and highly comparable with the mean age of the females 8.6 ± 1.9. The same was true for intellectual ability: mean IQ in boys was 60.7 ± 20.2 and in girls 61.3 ± 21.9.

Analysis of variance models An analysis of variance (ANOVA) with SPSS software was conducted for the child outcomes on ISAA, and CBCL scores. The ANOVA included the effect for independent variables such as country of origin, age, gender, education (school placement, education of father and mother), socioeconomic status (occupation of father and mother, residence, family size and income) and IQ. The effect of interaction of some of these variables on ISAA scoring is in the Tables 1 and 2 and on CBCL scoring in Tables 3 and 4. The small number of children in the sample doesn’t permit SPSS to realize ANOVA with interaction of five independent variables. We analyzed the effect of each variable and interaction between two and sometimes between 3 variables with Dependent Variables ISAA and CBCL scores.

Table 1 (next page) displays that for country of origin, gender and IQ, values of F indicate significant main effects of Country of origin for the social relationship, Speech, Language, communication, cognitive components and total ISAA scores. But the IQ has a significant effect on all ISAA subscales and total scale as compared to gender, which was non-significant. Similarly the interaction between Country of origin - gender, and IQ - gender, were non-significant. However, the effect of Country of origin - IQ has a significant effect on total ISAA scale. Interaction of the three variables was only significant for emotional responsiveness scale.

Table 2 (page 27) shows that for variables country of origin, gender, education and socio-economic status, values of F indicate significant main effect of country of origin for social relationship, of gender and socioeconomic standard for Speech, Language, and communication, education for emotional responsiveness scale. Moreover, the interaction between gender-education and education -socioeconomic status was statistically significant on emotional responsiveness scale.

In Table 3 for variables country of origin, gender and IQ, values of F indicate significant main effect of country of origin for the somatic problems, social problems, delinquent behavior, aggressive behavior, externalizing behavior and total CBCL score. But the gender, country of origin-gender and IQ-gender have a non-significant effect on all CBCL subscales. The IQ has a significant effect on most CBCL subscales. However interaction between all independent variables has a non-significant effect on all CBCL subscales except country of origin-IQ for externalizing behavior and country of origin-gender-IQ for delinquent behavior.

In Table 4 for variables Country of origin, gender, education and socio-economic status values of F indicate significant main effect alone and all combination on the externalizing problem scale, aggressive behaviour, social problems and thought problems.

Discussion Analysis of variance (ANOVA) showed a significant main effect of country of origin, and intellectual functions, particularly emotional responsiveness, of ISAA and externalizing behavior problems of CBCL. The socioeconomic levels and the gender had a significant effect on the communication problems of ISAA and externalizing behavior problems of CBCL. Age was largely unrelated to ISAA and CBCL. This finding contradicts previous findings that there is general tendency of modest improvement and decline in ISAA and CBCL in typically developing children across studies, despite wide variation in design, measurement and diagnostic criteria (17-19).

Past research has examined four individual characteristics in addition to age that may be important
In terms of an association between gender and autism symptoms, findings are mixed. A recent cohort study that included 118 children with autism followed into adolescence reported more significant social impairment among females than males (23). However, other studies have not found gender differences in language level, unusual verbal behaviors, or the level of repetitive behaviors (24).

Furthermore, Hartley and Sikora (25) proposed that gender was significantly correlated with the CBCL. Sleep Problems and Emotionally Reactive syndrome scales and boys with AD had higher scores than girls. Nyden et al (26) also ascertained that girls with AD have a slightly more severe presentation than boys although, gender differences are limited.

Our findings that gender was associated with differences in communication problems of ISAA and externalizing behavior problems of CBCL support previous research in both developed (25) and developing countries (27,28). In Saudi Arabia Al-Salehi et al (28) suggested that externalizing symptoms (e.g., hyperactivity and impulsivity) were more easily detected than the internalizing symptoms among Saudi children with ASD because of the additional burden to the children’s caregivers, particularly in boys with ASD, whereas internalizing symptoms (e.g., depression, withdrawal) in girls may be attributed to shyness in a cultural setting that expects the girls to be more conservative and less outgoing than boys. In patriarchal societies such as those from the Arab world, females are at a socio-cultural disadvantage in relation to males (29). In many Arab communities, boys in the family are regarded as capital investments to the social prestige of the family while females are relegated to burdensome and a potential source of shame (30). Cultural differences in the ways in which males and females are perceived and treated extend to individuals with developmental disabilities and may further influence the phenotypic expression of some developmental disabilities (31).

In this study, it was found that intellectual functions as determined by IQ yielded the strongest significant

<table>
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Table 1: The effect of various variables (Country of origin, gender and IQ) on ISAA scoring
Table 2: The effect of various variables (country of origin, gender, education and socioeconomic status) on ISAA scoring
variance for most of the ISAA and CBCL scores. This finding is consistent with research in older children and adults with ASD (21), and indicates that across the lifespan, individuals with low functions and adaptive behaviours are at a greater risk for maladaptive behaviours than high functioning individuals. Also, having mental retardation is frequently related to greater severity of autism symptoms, poorer overall outcome, and a decreased likelihood of improvement (17,21).

Previous studies have reported the beneficial effect of early intervention programs and higher level of education of parents for children with ASD. Stahmer et al (32) found comprehensive outcomes on standardized assessments as well as communication skills, social interaction skills and play skills of 20 children with autism in an inclusive setting, with 90% of children using a functional communication system at exit compared to 50% at entry. McGee, Feldman and Morrier cited on improvements in proximity of the child with autism to typical peers, with 71% of children showing improvement on this measure. A recent study by Koegel et al (33) showed that compared to typical peers, children with autism interacted just as much with adults in the classroom, but that they rarely interacted with other children. However, Koegel et al (33) showed that children with autism could be taught to initiate interaction with adults and peers and that overall outcome for these children was much better than for children with autism who initiated at low levels. Also, in a study examining the pre-school children with AD, Leventhal et al (34) found that children whose mothers were more highly educated were receiving doctor visits, educational services, and psycho-social services while children whose mothers had fewer years of education were receiving doctor’s visits only. This difference in receipt of services could indicate that children with autism whose mothers were more highly educated might have had more opportunity to participate in early intervention than children whose mothers had fewer years of education, thereby perhaps mitigating other developmental problems such as cognitive impairment. In our study the effect of education (attendance of the child to a school, education of the father and mother) had a significant direct effect and in interaction with socioeconomic status on emotional response, social problems, thought problems, delinquent behavior, and Country of origin. This may be accounted for by the fact that the majority of children with ASD in this study, nearly 60%, resided at home with their families which represents a departure from many North American and European countries. In these countries, families of autistic individuals generally have access to and utilize various educational options. Autistic school-age children in these countries are generally enrolled in regular or special education schools (35). In contrast, the Arabic experience with ASD care appears to be based on a “home-grown” service.

A few researchers have attempted a comparative approach or explicitly addressed cultural factors in ASD. They have assumed that autism is rare in non-Western countries (36) or ‘an illness of modern civilization’ (37). Others have claimed that there is little variation in behavioral manifestation of autism (38) and that it is constant across culture, ethnicity, and social class (39). Morgan (40) has argued that not only are the same behavior patterns seen, but also 'the problems of the individuals and their families are virtually the same, and the required responses are quite similar'. Cuccaro et al (39) have posited a related explanation: because autism is believed to be a neurobiological condition, the non-biological aspects of the condition appear less relevant. At the other extreme, Delay (22) sees autism as a universal disorder which like schizophrenia occurs in all cultures, though it is still susceptible to cultural influences in expression and course. In an earlier study, Lotter (41) visited six countries in Africa with the aim of identifying possible causes of autism and comparing symptoms with a British sample. Lotter concluded that autistic symptoms, particularly repetitive or stereotyped behaviors, are less common in Africa than in Britain, and that autistic children come from a higher social class. A number of Lotter’s findings can be explained by methodological factors, for example, Lotter obtained his sample from institutions for mentally disabled, whereas many African families do not send their disabled children to schools or institutions (42-43). He also included indices of competence such as demonstrating an ability to complete a form board, ride a tricycle and eat with a knife and fork; measures of adaptive functioning that may not be relevant to many African children. However, recent research appears to be drawing more from the international field of autism, such as testing various assessment tools in other cultures, but the hallmark of this body of research still is the use of a cultural sample without any explicit discussion of cultural factors (22). In this study, a significant main effect of Country of origin on the ISAA and CBCL was noted which could be accounted for by differences in initial symptom recognition, the age of the child, and the course of action taken; help-seeking behavior and diagnosis, subjective experiences with professionals and the process of diagnosis; treatment used, including all schools, medications and other interventions, parent satisfaction with or concerns about services for their children, explanatory models of cause, characteristics and treatment of autism; and parental concerns and future expectations.

Another line of research placing autism in a sociocultural context focuses on class factors. Early descriptive studies conducted among individuals with autism found a preponderance of parents from high social class backgrounds, as defined by their occupation, education, or intellect level (44). Recent investigations have not observed any association between higher social class and autism (45). The significant effect observed in this study of the socioeconomic standard as defined by the occupational status of parents, residence, level of income and family size (particularly externalizing behavior problems of CBCL than particularly emotional responsiveness of ISAA) could be explained by the
small sample size, inadequate comparison groups and varying measures of social class which may limit the interpretation of the results.

Several limitations of our study should be considered. The study group included a predominance of children with autistic disorder and relatively few with PDDNOS compared to the latest estimates on relative sizes of ASD subgroups (46). Further, there were many children with low intellectual level. Thus, our sample though from several countries, cannot be seen as representative of the entire population of Arab children with ASD, and the generalizability of our results is limited. In addition, information from parents concerning the child’s medical and developmental history is absent thus the extent to which children had comorbid syndromes (e.g., Fragile X syndrome) or medical problems that may have impacted their autistic symptoms, or coexisting behavior problems, is not known.

The major challenge in our paper is dissecting the difference between inherent, biologically determined characteristics of children with ASD, and cultural influences on the manner in which autism is expressed either as judged by parents or as a result of parenting. We note there are markedly different parenting patterns for children with ASD as well as very likely large differences in expectations. That raises the possibility that the scores on the two main scales reflect deviation from cultural expectations for boys and girls as much, or perhaps even more, than inherent differences in expression of autism characteristics.

Future studies should include a comparison group, such as children with mild intellectual disability but without autism, and may further clarify the parental expectation differences for both boys and girls in other groups with IDDs compared with autism as well. Also, because the co-occurring behavior problems were gleaned from parent-report in the CBCL, the potential effects of parental biases must be considered. Additional assessment by structured clinical interviews and observational measures would have been desirable to provide a more comprehensive view of the participant’s problems. The country of origin, gender and the socioeconomic level had a significant effect on some of the autistic symptoms and maladaptive behavior in autistic children. Although these findings are preliminary in nature, psychiatrists and parents need to identify which factors cause difficulty to the autistic children. Such an undertaking is likely to help formulate diagnosis and treatment techniques as well as provide a basis for assessment of the magnitude of ASD in the Arab world.

References


Prevalence of dementia and associated risk factors in a tertiary hospital in Saudi Arabia

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Mostafa Amr (2)

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Abstract

Objectives: To determine the prevalence and severity of dementia as judged by the Clinical Dementia Rating (CDR) scale among patients older than 50 years attending the Neurology outpatient clinic.

Patients and Methods: The study included 485 patients older than 50 years screened for the presence and severity of dementia using CDR scale including six domains: memory, orientation, judgment and problem solving, community affairs, home and hobbies, and personal care.

Results: The study included 485 patients; 312 males and 173 females with mean age of 71.8±8.5 years. The majority of patients were widows and smokers. About 36.7% were living with their families, 11.5% were living with the other partner alone and 10.7% were living with a family member. About 23% had multiple morbidities, while 40% of patients had one additional morbidity. The majority of patients had very mild to moderate affections of items of CDR score with about 36% of patients in the range of 6-8, about 15% in range of 5-6, and about 10% were in the range of 4-5, while another 10% of patients were in the range of 8-9. There was a positive significant correlation CDR score with both patients’ age and presence of additional co-morbidities.

Conclusion: Among people older than 50 years there is affection of certain mental and behavioral functions and despite being very mild it is a reality and must be evaluated and followed-up. The CDR scale is an easy and applicable diagnostic scoring system for screening and follow-up of such subjects.

Keywords: Dementia, prevalence, severity, clinical dementia score scale
Introduction
Dementia accounts for 2% of years of life lived with disability, ahead of other chronic diseases, such as cerebrovascular disease and diabetes mellitus. With the worldwide demographic trend of population aging, dementia-related disorders are becoming more prevalent. Intellectual impairment and cognitive disease, such as that associated with many dementias, constitute a serious threat to the wellbeing of older adults (1).

Estimates of the prevalence of dementia vary worldwide. A consensus study indicated a world prevalence of 24.3 million in 2001, for a rate of 3.9% among those aged > 60. The rate is expected to double every 20 years (2). Rates increase with age, so that for Western Europe, prevalence is 1.5% of those aged 65-69, rising to 24.8% of those aged > 85 and over one third of those over age 90 in Germany (3). Milder forms of cognitive impairment are even more prevalent. At least 14% of the young-old, i.e., those between 60 and 79 years of age are expected to develop mild cognitive impairment. The rate increases sharply with age, with estimates reaching 98% in some studies (4).

One of the more common behavioral manifestations of dementia-related disorders is severe problems with out-of-home mobility which is critical for numerous aspects of an older persons’ quality of life. Cognitive impairment and dementia are among the major threats to maintaining out-of-home functional capacity and preferred mobility patterns. One behavioral manifestation of dementia is wandering which includes checking, trailing, aimless walking, walking directed towards an inappropriate purpose, excessive activity, and attempts to “leave the house” and is estimated in 20-25% of community-dwelling dementia patients (5).

The Clinical Dementia Rating (CDR) is a global clinical scale with an established diagnostic and severity-ranking utility that has been widely employed in epidemiological studies, case series and clinical trials in an international context (6). It has also been adapted for routine clinical use in tertiary clinics and chronic care facilities (7, 8).

The CDR was developed at Washington University School of Medicine and first published in 1982 (6) and was last revised in 1993 (9). The CDR employs a semi-structured interview with both the patient and a reliable informant and has established inter-rater reliability and can be administered by any trained personnel (10, 11).

The present observational study aimed to determine the prevalence and severity of dementia as judged by the Clinical Dementia Rating scale among patients older than 50 years attending the Neurology outpatient clinic.

Patients and Methods
This prospective screening study was conducted at the Neurology Department, King Faisal University Hospital, KSA between January 2008 until January 2010 so as to screen all attendants older than 50 years for the presence of dementia, irrespective of its type or underlying disease process, using the Clinical Dementia Rating (CDR) scale. Demographic and anthropometric data in conjunction with health status were also documented. The obtained data were stratified and analyzed to determine the global prevalence among the study group and among each stratum and to find out correlations in-between.

The CDR rates performance in six domains: memory, orientation, judgment and problem solving, community affairs, home and hobbies, and personal care. Each domain is rated according to one of five levels of impairment: 0=none, 0.5=questionable, 1=mild, 2=moderate, 3=severe and CDR score of 0 indicates no dementia. CDR scores of 0.5, 1, 2 and 3 indicate very mild, mild, moderate, and severe dementia, respectively. For quantitative measures for dementia severity, the rating in each of the six categories was totalled to yield the sum ranging between 0 and 18 (10). The CDR 0.5 category can be further divided into two diagnostic subcategories: (1) very mild or incipient dementia and (2) uncertain dementia, comprising individuals with cognitive impairment of insufficient degree to interfere with everyday functioning or possessing another potentially reversible condition (such as depression) that may account for the questionable impairment (12). Two additional stages are included for the most severe stages of dementia; Stage 4 describes profound dementia, in which persons have severe impairment in language or comprehension, inability to walk or eat without assistance, problems recognizing their family, and incontinence and Stage 5 refers to terminal dementia, in which persons require total care and are completely uncommunicative, bedridden, vegetative and incontinent (13).

Validity and reliability were measured through kappa coefficient. Agreement to gold standard dementia diagnostic criteria, The National Institute of Neurological and Communicative Disorders and Stroke/Alzheimer’s Disease and Related Disorders Association (NINCDS-ADRDA) criteria for probable Alzheimer disease and the National Institute of Neurological Disorders and Stroke and Association Internationale pour la Recherche et l’Enseignement en Neurosciences (NINDS-AIREN) for probable vascular dementia were the gold standard (Kappa=0.82). The Mini Mental State Examination (as a screening test at study entry) were also applied (Kappa=0.75).

Results
The study included 485 patients; 312 males and 173 females with mean age of 71.8±8.5 years. The majority of patients were widows and smokers who had either stopped or were still smoking. Care provision was variant despite 36.7% were living with their families, 11.5% were married and living with the other partner alone and 10.7% were living with a family member. Details of patients’ enrollment data are shown in Table 1.

The majority of patients were clean and well-nourished. Only 6.6% were
### Table 1: Patients’ enrollment data

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<td>112</td>
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<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>91</td>
<td>18.8%</td>
<td></td>
</tr>
<tr>
<td>Widow</td>
<td>251</td>
<td>51.8%</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>31</td>
<td>6.4%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Smoking</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>154</td>
<td>31.8%</td>
<td></td>
</tr>
<tr>
<td>Stopped</td>
<td>196</td>
<td>40.4%</td>
<td></td>
</tr>
<tr>
<td>Still</td>
<td>135</td>
<td>27.8%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Care provision</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Living alone with the other partner</td>
<td>56</td>
<td>11.5%</td>
<td></td>
</tr>
<tr>
<td>Living with the family</td>
<td>178</td>
<td>36.7%</td>
<td></td>
</tr>
<tr>
<td>Living care provider</td>
<td>134</td>
<td>27.6%</td>
<td></td>
</tr>
<tr>
<td>Living in elderly home</td>
<td>65</td>
<td>13.4%</td>
<td></td>
</tr>
<tr>
<td>Living alone with family member</td>
<td>52</td>
<td>10.7%</td>
<td></td>
</tr>
</tbody>
</table>

Data are presented as numbers & mean±SD; percentages & ranges are in parenthesis.

### Table 2: General health status assessment data

<table>
<thead>
<tr>
<th>Data</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>General appearance</td>
<td></td>
</tr>
<tr>
<td>Clean</td>
<td>352 (72.6%)</td>
</tr>
<tr>
<td>Moderately clean</td>
<td>102 (21%)</td>
</tr>
<tr>
<td>Neglected</td>
<td>31 (6.4%)</td>
</tr>
<tr>
<td>Apparent nutritional status</td>
<td></td>
</tr>
<tr>
<td>Nourished</td>
<td>221 (45.6%)</td>
</tr>
<tr>
<td>Borderline malnourished</td>
<td>151 (31.1%)</td>
</tr>
<tr>
<td>Malnourished</td>
<td>113 (23.3%)</td>
</tr>
<tr>
<td>Mobility</td>
<td></td>
</tr>
<tr>
<td>Freely mobile</td>
<td>287 (59.2%)</td>
</tr>
<tr>
<td>Limited mobility</td>
<td>112 (23.1%)</td>
</tr>
<tr>
<td>Mobile on chair</td>
<td>54 (11.1%)</td>
</tr>
<tr>
<td>Immobile</td>
<td>32 (6.6%)</td>
</tr>
<tr>
<td>Visual impairment</td>
<td></td>
</tr>
<tr>
<td>No impairment</td>
<td>65 (13.4%)</td>
</tr>
<tr>
<td>Impaired</td>
<td></td>
</tr>
<tr>
<td>Corrected &amp; see adequately</td>
<td>231 (47.6%)</td>
</tr>
<tr>
<td>Corrected &amp; see inadequately</td>
<td>94 (19.4%)</td>
</tr>
<tr>
<td>Corrected &amp; just see adequately</td>
<td>63 (13%)</td>
</tr>
<tr>
<td>Not be corrected</td>
<td>32 (6.6%)</td>
</tr>
<tr>
<td>Hearing impairment</td>
<td></td>
</tr>
<tr>
<td>No impairment</td>
<td>281 (57.9%)</td>
</tr>
<tr>
<td>Impaired</td>
<td></td>
</tr>
<tr>
<td>Corrected with hearing aid</td>
<td>177 (36.5%)</td>
</tr>
<tr>
<td>Refused to use hearing aid</td>
<td>27 (5.6%)</td>
</tr>
</tbody>
</table>

Data are presented as numbers; percentages are in parenthesis.

Table 2: General health status assessment data
imobile, 11.1% were mobile on chair, while the others could move with a varying range of mobility. Sixty-five patients had no visual impairment and 281 patients had no hearing impairment. Details of patients’ general health status are shown in Table 2 (previous page).

The majority of patients had variant affections of items of CDR score ranging between very mild to moderate affection, (Table 4). Numerical evaluation of CDR scores showed that about 36% of patients were in the range of 6-8, about 15% of patients were in the range of 5-6, and about 10% of patients were in the range of 4-5, and about 10% of patients were in the range of 4-5.

These data point to a fact that there may be affection of certain score items and but mostly not all items are affected and that people older than 50 years have dementia, even if limited to some life aspect other than other aspects. This finding illustrated the impact of life stresses on the development of dementia and indicated that the continuity or aggravation of these stresses while getting older will lead to more deterioration. In support of such assumption, there was a positive significant correlation between age and CDR score.

In line with these findings, Lui et al. (14) studied 66 Chinese community-dwelling older adults (aged from 65 to 87 years) using CDR for manifestation and scoring of dementia and reported that 33 (50%) participants were diagnosed with very mild or mild dementia and concluded that even patients with very mild dementia can show substantial deficits in certain capacities.

Siewert et al. (15) tried to predict the resulting rise in age-related diseases in the German population at 2020 in relation to the year 2005 as a baseline and reported that the largest increases in case numbers are predicted for dementia (+91.1%), myocardial infarction (+28.3%), diabetes mellitus (+21.4%), and incident colon carcinoma (+31.0%).

About 46% of enrolled patients were nourished, while 31% and 23% were either borderline malnutrition or malnourished, respectively. This finding goes in hand with Hassan et al (16) who assessed the nutritional status of 130 Qatari patients aged 65 to 90 years and reported a high prevalence of under-nutrition among these long-term care residents and indicated that appropriate nutritional assessment and nutrition care were not fully implemented during their stay in the facility. Also, Khater & Abdouelezz (17) who studied the nutritional status of 120 adults older than 60 years and reported that according to the mini-nutritional assessment, 48.3% of the sample study were well nourished, 40.8% were at risk of malnutrition and 10.8% were malnourished; such difference could be attributed to the differences in community resources and quality of foods.

About three hundred patients had additional morbidity and 109 patients of them had multiple additional morbidities with diabetes, hypertension and cardiac lesions are the most frequent additional morbidities either alone or in combination with each other or other diseases. These data indicated a possible relation between previous or concurrent medical problems and development of dementia and goes in hand with that previously reported in literature. Cankurtaran et al (18), (2005) reported that depressed patients suffered from a wide range of other diseases; the number and prevalence of which were as follows: Alzheimer’s disease (12.5%), vascular dementia (9.9%), hypertension (77.3%), diabetes mellitus (23.4%), osteoporosis (66.7%), atherosclerotic coronary artery disease (32.6%), cardiac failure (8.5%) and osteoarthritis (48.8%) and the correlation between depression and concomitant diseases was statistically significant in hypertensive, demented and osteoporotic patients, as determined in a large elderly population.

Also, Rosenbaum et al. (19) found an increased frequency of dementia conditions in a Turkish population of elderly (> 60 years old) compared to the expected prevalence in the Danish population and found an increased frequency of diabetes Type 2. Mizrahi et al (20) retrospectively reviewed charts of 707 patients admitted for rehabilitation after an ischemic stroke and found age, gender, diabetes, dementia, and previous stroke emerged as the statistically significant parameters with which diabetes was associated with an increased risk of cognitive impairment.

The study relied on the Clinical Dementia Rating score for diagnosis and severity scoring and this was
was dependent on the previous work by Chaves et al (21), (2007), who tried to determine the diagnostic value and agreement analyses between Clinical Dementia Rating and dementia diagnostic criteria as a gold standard in a sample of 343 Southern Brazilian participants and reported that CDR detection of dementia among healthy elderly or questionable dementia was 86% and 80% sensitive, respectively, and 100% specific for both settings and concluded that agreement of CDR global score with the gold standard was good, and diagnostic values were high. Also, Lim et al (22), (2007), reported that from a diagnostic standpoint, the CDR is congruent with the Diagnostic and Statistical Manual of Mental Disorders approach of dementia diagnosis, exhibits excellent discriminatory ability in the very mild stages of dementia and a useful property that is germane to the surging interest in mild cognitive impairment and related concepts.

It could be concluded that among people older than 50 years there is affection of certain mental and behavioral functions and despite being very mild it is a reality and must be evaluated and followed up. The CDR scale is easy and an applicable diagnostic scoring system for screening and follow-up of such subjects.

### References


Culturally Adapted Arabic Version of Geriatric Depression Scale (GDS-11-A): Validity and Reliability

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Abstract

Background: Depressive disorders are a public health problem in developing countries. Culture specific recognition systems for depression are particularly needed especially in older people.

Aim: To develop and validate a culturally adapted Arabic version of the Geriatric Depression Scale (GDS). The optimum cut off points of the scale in detecting clinically significant depression would be determined from the study with exploration of possible differences in response to the scale between males and females.

Methods: 88 cognitively intact older adults aged 60 years and above participated in this study. Convergent validity of the Arabic scale was done by matching of its results with scores of previously validated Arabic versions of Beck Depression Inventory (BDI-II). Reliability was done by test re-test. Different GDS cutoff points were used to estimate the sensitivity, specificity, positive predictive value and negative predictive value for the diagnosis of clinically significant depressive symptoms.

Results: After omitting items 2, 6, 9 and 15 (items showed no correlation with Beck total score), the new GDS 11 yielded the highest sensitivity at 2/3 cut off point (97.1) and an Area Under the Curve of 0.85 (95% CI: 0.76 - 0.96).

Conclusion: The culturally adapted Arabic GDS 11 (GDS-11-A) could be a good screening tool for depressive symptoms among Arab older people.

Key words: Arabic, culture adaptation, depression, elderly, GDS
Methodology
A cross-sectional study was conducted on a convenience sample of older people 60 years old and higher in the Geriatrics and Gerontology department and its outpatient clinic, Ain Shams University hospitals with the overall response rate reaching 82%. The study was done in two phases:

Phase I, in which validity and reliability of the Arabic version of GDS -15 were assessed among 88 participants. All GDS-15 items were translated into Arabic language and back translated to the original language with no significant difference between the original and the back translated forms. Convergent validity of the Arabic scale was done among 60 participants (30 men and 30 women) by matching of its results with scores of previously validated Arabic version of Beck Depression Inventory (BDI) (10). The elderly people were subjected to BDI at first then to GDS at the same setting.

Reliability was done by test re-test (within 48 hours of administration) among a sub-sample of 30 participants.

Phase II, in which we omitted the least significant items for development of the culturally adapted version of GDS. Validity and reliability of the shorter culturally adapted versions of GDS were assessed. The optimum cut-off points of the scale for detection of depression among Egyptian elderly compared to Beck were determined from the study.

Data Management and Statistical Analysis:
Data collected was revised and validated and expressed in the form of frequency tables for categorical variables and mean and standard deviation for continuous variables. Spearman correlation coefficient was used to test correlation between different items of the questionnaire and the total score. Cronbach’s alpha was used to test reliability of different questionnaire items. Sensitivity, specificity, positive and negative predictive values were calculated for different cutoff points of the modified versions of GDS. Area under the curve was calculated and illustrated to display the discriminating ability of the modified versions of GDS at different cutoff points with its 95% confidence limit. Kappa statistics were calculated for each item of the test-retest GDS questionnaire to assess reliability of different items at different points of times. All statistical manipulations were performed using the 16th version of SPSS.

Results
Eighty eight participants (46 male and 42 female) ranging in age from 60 to 86 years were included in this study. Twenty six participant (43.3%) were from 60 to below 65 years old, 26 (43.3%) were from 65-74 years old and only 8 (13.3%) were 75 years old and above. The mean age of total sample population was 67.67 years (±6.78 SD). 52.3% of the participants were males. 61% of the participants were married and the rest lived without a spouse. Nearly 60% of the participants were illiterate and 16% can only read and write and are without formal education.

Table (1) demonstrates the correlation of the GDS-15 items to the total score and to Beck total score. Items 6 and 9 showed no significant correlation with the total Beck score for all patients regardless of their sex. Figure (1) displays the correlation of the total Beck score with the newly invented GDS-11 total score (after omitting the items 2, 6, 9 and 15 which showed the lowest correlation with Beck total score) for all patients and for male and female groups individually. Spearman correlation coefficient was 0.927 for males, 0.816 for females and 0.871 for total.

Figure 1 (page 41) displays the correlation of the total Beck score with the newly invented GDS-11 total score (after omitting the items 2, 6, 9 and 15 which showed the lowest correlation with Beck total score) for all patients and for males and females groups individually.

To increase the validity of GDS among females, more items have been omitted (in GDS-7) namely 1, 2, 3, 4, 6, 9, 11 and 15. Such omissions yielded a highest sensitivity of 100.0 and highest specificity of 84.6 at 3/4 cutoff point with AUC reached 0.92 (95% CI: 0.8-1.04). GDS-11 yielded the highest percentage of participants with depressive symptoms than both GDS-15 and GDS-7. The highest yield was for GDS-11 at 2/3 cutoff point being 64.4% for males and 69% for females.

Spearman correlation coefficient was 0.927 for males, 0.816 for females and 0.871 for total.

Figure 2 (page 41): displays that GDS-11-A had a satisfactory reliability. Correlation between test-retest results of GDS-11 administration for reliability was 0.938 showing almost the same results (Figure-2). For individual items reliability Kappa statistic showed a significant reliability; the highest being for items 5, 6, 10 and 15 and the least for item 14. GDS-11 revealed the highest sensitivity (97.1%) at 2/3 cutoff point (the sensitivity was 91.2 at 3/4 and 4/5 cutoff points) while the highest specificity (84.6%) was shown at 4/5 cutoff point (the specificity was 73.1 and 80.8 at 2/3 and 3/4 cutoff points respectively) as well as the highest (PPV) positive predictive value (88.6) at cutoff point 4/5 (PPV was 82.5 and 86.1 at 2/3 and 3/4 cutoff points respectively). The (NPP) negative predictive value was 95, 87.5 and 88 at 2/3, 3/4 and 4/5 cutoff points respectively. Figure 3 demonstrates the discriminating ability of the GDS-11 at different cutoff points (2/3, 3/4 and 4/5). A relatively accepted AUC (area under the curve) was obtained for GDS-11 [0.851 (95% CI: 0.74-0.96), 0.86 (95% CI: 0.75-0.96) and 0.879 (95% CI: 0.78-0.98)] at different cutoff points respectively.

Figure 2 (page 41): displays the correlation between test-retest results of GDS-11 administration for reliability was 0.938 showing almost the same results.
Table 1: Correlation of the 15 items of GDS with the total GDS Score and to the Beck Inventory II total score using Spearman correlation coefficient

<table>
<thead>
<tr>
<th>Item</th>
<th>Males GDS 15 Total Score</th>
<th>Males Beck Total Score</th>
<th>Females GDS 15 Total Score</th>
<th>Females Beck Total Score</th>
<th>Total GDS 15 Total Score</th>
<th>Total Beck Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 1</td>
<td>0.842**</td>
<td>0.838**</td>
<td>0.236</td>
<td>0.229</td>
<td>0.593**</td>
<td>0.619**</td>
</tr>
<tr>
<td>Item 2</td>
<td>0.344</td>
<td>0.379*</td>
<td>0.225</td>
<td>0.088</td>
<td>0.293*</td>
<td>0.249*</td>
</tr>
<tr>
<td>Item 3</td>
<td>0.702**</td>
<td>0.648**</td>
<td>0.377</td>
<td>0.189</td>
<td>0.545**</td>
<td>0.462**</td>
</tr>
<tr>
<td>Item 4</td>
<td>0.693**</td>
<td>0.669**</td>
<td>0.408*</td>
<td>0.339</td>
<td>0.562**</td>
<td>0.523**</td>
</tr>
<tr>
<td>Item 5</td>
<td>0.812**</td>
<td>0.747**</td>
<td>0.674**</td>
<td>0.615**</td>
<td>0.743**</td>
<td>0.660**</td>
</tr>
<tr>
<td>Item 6</td>
<td>0.250</td>
<td>0.072</td>
<td>0.183</td>
<td>0.103</td>
<td>0.219</td>
<td>0.076</td>
</tr>
<tr>
<td>Item 7</td>
<td>0.917**</td>
<td>0.819**</td>
<td>0.668**</td>
<td>0.450*</td>
<td>0.792**</td>
<td>0.660**</td>
</tr>
<tr>
<td>Item 8</td>
<td>0.546**</td>
<td>0.560**</td>
<td>0.629**</td>
<td>0.590**</td>
<td>0.571**</td>
<td>0.514**</td>
</tr>
<tr>
<td>Item 9</td>
<td>0.092</td>
<td>0.063</td>
<td>0.096</td>
<td>0.004</td>
<td>0.102</td>
<td>-0.008</td>
</tr>
<tr>
<td>Item 10</td>
<td>0.576**</td>
<td>0.520*</td>
<td>0.600**</td>
<td>0.578**</td>
<td>0.569**</td>
<td>0.487**</td>
</tr>
<tr>
<td>Item 11</td>
<td>0.751**</td>
<td>0.725**</td>
<td>0.442*</td>
<td>0.116</td>
<td>0.620**</td>
<td>0.553**</td>
</tr>
<tr>
<td>Item 12</td>
<td>0.792**</td>
<td>0.732**</td>
<td>0.535**</td>
<td>0.462*</td>
<td>0.665**</td>
<td>0.616**</td>
</tr>
<tr>
<td>Item 13</td>
<td>0.627**</td>
<td>0.669**</td>
<td>0.556**</td>
<td>0.622**</td>
<td>0.583**</td>
<td>0.604**</td>
</tr>
<tr>
<td>Item 14</td>
<td>0.798**</td>
<td>0.696**</td>
<td>0.395</td>
<td>0.522**</td>
<td>0.622**</td>
<td>0.600**</td>
</tr>
<tr>
<td>Item 15</td>
<td>0.433*</td>
<td>0.321</td>
<td>0.378</td>
<td>0.402*</td>
<td>0.375**</td>
<td>0.281**</td>
</tr>
</tbody>
</table>

* Statistically significant, ** Highly significant

A relatively accepted AUC (area under the curve) was obtained for GDS 11 [0.851 (95% CI: 0.74-0.96), 0.86 (95% CI: 0.75-0.96) and 0.879 (95% CI: 0.78-0.98)] at different cutoff points respectively.

**Discussion**

The Geriatric Depression Scale (GDS) unlike other screening instruments for depression does not contain items regarding physical symptoms that are very prevalent in the elderly due to physical disorders. Instead, it contains questions for memory and concentration which are more common in later life depression than early life depression. In addition, each item of the GDS is reported as ‘Yes’ or ‘No’, which enhances its inter-rater reliability and shortens its administration time in the elderly (11). The performance of the GDS-15 was equally good for both community-dwelling older adults and those in primary care settings, and for both forms of the GDS (examiner administered vs. self-administered) (12). In Cannon et al (13), the authors reported a significant correlation between oral and written administrations of GDS among the higher cognitive functioning participants. This is in particular would be appropriate for cultures with high illiteracy rates like the Egyptian community. (68.8% of Egyptians above 60 years old are illiterate and 11% can only read and write) (14). The original version of the GDS as a screening tool has 30 different items (15), but a shortened version of the GDS-15 has been developed and shown to be valid and less time-consuming (16). The GDS has been translated and used in many countries including Arabic countries. Cultural factors should have no impact on the performance of an instrument used as a screening tool. Possible cultural difference of Arabic people may necessitate more than translation for the development of the Arabic version of GDS. That
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<table>
<thead>
<tr>
<th>Corrected Item-Total Correlation</th>
<th>Cronbach’s Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDS 1</td>
<td>.543</td>
</tr>
<tr>
<td>GDS 3</td>
<td>.465</td>
</tr>
<tr>
<td>GDS 4</td>
<td>.495</td>
</tr>
<tr>
<td>GDS 5</td>
<td>.681</td>
</tr>
<tr>
<td>GDS 7</td>
<td>.743</td>
</tr>
<tr>
<td>GDS 8</td>
<td>.441</td>
</tr>
<tr>
<td>GDS 10</td>
<td>.460</td>
</tr>
<tr>
<td>GDS 11</td>
<td>.568</td>
</tr>
<tr>
<td>GDS 12</td>
<td>.593</td>
</tr>
<tr>
<td>GDS 13</td>
<td>.476</td>
</tr>
<tr>
<td>GDS 14</td>
<td>.551</td>
</tr>
</tbody>
</table>

Figure 3: ROC (receiver operating curve) displaying the discriminating ability of GDS 11 in both males and females

had a satisfactory reliability and concurrent validity (17). After omitting items 6, 9 and also item 2 (“Have you dropped many of your activities and interests?”) [It is not so clearly understood by many elderly Egyptians] and item 15 (“Do you think that most people are better off than you are?”) [It is not matching with cultural and religious beliefs that discourage comparison between self and others] which showed the lowest correlation with the Beck total score, the GDS-11 Arabic version was developed (GDS-11-A). GDS-11-A had satisfactory reliability (Cronbach’s alpha and test-retest reliability) and significant concurrent validity with Beck total score. The GDS-11-A detected all clinically significant depression with the highest sensitivity at 2/3 cutoff point while 4/5 revealed the highest specificity as well as the highest PPV. To increase the validity of GDS among females, more items which showed lower correlation with Beck total score have been omitted (in GDS-7) namely item 1 (“Are you basically satisfied with your life?”), item 3 (“Do you feel that your life is empty?”), item 4 (“Do you often get bored?”) and item 11 (“Do you think it is wonderful to be alive now?”). Such omissions yielded a sensitivity of 100.0 at 3/4 cutoff point and 84.6 specificity. But, GDS-11 yielded the highest percentage of participants with depressive symptoms than both GDS-15 and GDS-7. The highest yield was for GDS-11 at 2/3 cutoff point and the frequency of participants with depressive symptoms was 64.4% for males and 69% for females.

Without adjusting the scale according to local culture, it is expected to have different psychometric properties unless different cutoff values were used. That is why formally developed Arabic GDS (Lebanese version) had the best psychometric properties reported for a higher cutoff 7/8 (12). Also, variations in cut-off scores might reflect differences in methodologies across the studies (18). The short-form of GDS-11-A was generated with better reliability and validity indices. It seems that these items (2, 6, 9 and 15)
Figure 1: Scatter plot displaying correlation of BECK total score and GDS 11

Figure 2: Scatter plot displaying correlation between test-retest results of GDS 11

$r=0.938^*$
might not be implicated in the depression concept in our culture. The developed GDS-11-A takes a shorter time and omitting of the questions with cultural conflict can help to make the questionnaire more understandable and to make the elderly more cooperative with the administrator helping to complete the questionnaire and provide more accurate interpretation of the test results. General practitioners may benefit from the systematic use of the shorter valid GDS Arabic version (GDS-11-A) to increase detection rates of depression among the elderly. One major limitation of the present study was the sample size. The sample size was not large enough to examine the influences of the various socio-demographic variables such as age and education.

References
A personal view: The story of searching for Mr Good, challenges and opportunities for women (in the 21st century)

Ebtisam Elghblawi

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Ebtisam Elghblawi, MBBCh, MSc, ADD,
Tripoli-Libya
Email: Ebtisamyya@yahoo.com

The call
A woman can spend her whole life searching for Mr. Right if he exists. The question comes to mind, does that ideal man exist, and if he does exist, will that man satisfy a woman’s needs from all aspects; spiritually, physically, socially, and mentally. Sometimes women just accept Mr. Good to get settled and do not mind not finding, nor demanding Mr. Perfect, as perfection does not exist anywhere.

The man that we are looking for is on paper, and simply does not exist in reality. Sometimes women state that they overlooked men, who might have turned out to be a good husband, due to their checklist of instant spark rather than of solid partner criteria. Somehow, as long as men have existed they have not been perfect nor have we ‘women’ as we are all imperfect humans, all humanity. Perfection by all means cannot be found in terms of everlasting love, however divine connection and strong attraction are probably what matters the most. We can satisfy ourselves with the phrase ‘he is The One’ even if it does happen sometimes a year, or many years later.

Should you settle?
Some people define settling down by a physical attraction and passionate love, but the question, if that does happen, will that last forever. Many stories that started with all that sparkles do not survive through the little problems in life, and end up badly, due to not using the mind before the heart in making that choice, or ignoring all that from the outset. Assuming Mr. Perfect was found, do we think that passion would last 24/24. I presume the most important in all this is looking for what’s important most and letting go of things that do not matter that much. Even if each woman sat down, and made a check list for her own priorities and needs, would that all make her happy if she ever found it, despite the fact it cannot be all found, nor granted generally speaking. Men themselves find it difficult settling all the time in one place and with one woman. Maybe that is men’s nature; however some women disagree with that concept, as some women would have the same tendency. Women by nature are more patient, appreciating, thoughtful, and considerate and non demanding as men, but would that give men excuses to treat women that way.

Women still blame society, fate, for their luck and involuntary being single. Good fortune rarely comes to you in the form you are expecting it. Desperate but picky
Some women become too picky in their search for the long term partner ‘a husband’, and make a long checklist to apply and fit in. We often leave that to luck and destiny, but does that help. If a woman is all the time inside her own place, and not socialising enough, would that help her meet Mr. Right. Some women cannot bear that idea and start looking everywhere and hoping to find that Right man and the story is ongoing.

Nowadays many women are fooled by finding men online. The point is, if you cannot find them decent, faithful and honest in real life, would the internet substitute for that. I personally do not think so, as the internet can deceive and mislead us easily. You cannot see the other party or make an assumption about the reality of them. Many women, even men, have been deceived that way and many problems are consequences of such conduct.

Women in the west for instance, will not leave finding Mr. Right to chance; some go beyond that and seek a sperm donor to have their choice of having the baby they always wanted despite the fact that they do not know the father of that sperm, but are quite content with that achievement deep inside themselves. Because she knows quite well if she cannot have what she wants during her fertile age, there will be even less chance when she is older.

Many of those women are self aware of themselves and their needs, and are capable, and independent and successful in their career and do not even need men in their life to ruin it, or make it a misery. Of course, not all men are bad, but we are talking about the general measure. So, women have begun to think about controlling their own life if they cannot find the perfect partner, who is willing to share their success and ambitions. Most men in the Arab world are demanding and controlling, and do not appreciate a powerful women with charisma who has ambitions and aspirations. I believe they fear
such a woman that she might over take them and thus they feel inferior. They could take it the other way around, as a perfect competitive partner, each in their discipline to complement each other. That’s what I think personally.

We women wish to have the perfect quality man to settle with and establish a life; we can be selective, very specific, and quite picky, but what do we expect in return if we are not; will that man appreciate that woman in her choice of him. I doubt this in most cases.

Any successful relationship between a man and a woman would involve understanding, ‘and plenty of it’, attitude and behaviour appreciation, flexibility, mutual respect for each other’s wishes and aspirations without over-taking or controlling to dominate, sharing life and willing to fix things when needed as well as trying to do the right thing and have done it when it was needed to save the relationship.

Many relationships end in a divorce which is an outcome either due to (1) fights, ongoing conflicts and destructive criticisms and another due to (2) disappointment rather than fight and anger. Some think if marriage is not going to work, better to get a divorce and look for happiness somewhere else as you might be happier than where you are. It is not easy though and sometimes we cannot help it practically due to many constraints.

We cannot find everything we like in one party, so if we want to have it, we need to compromise and accept it the way it is in some cases. Many women are aware of that and know it’s hard to please. What is more, women think if she can find Mr. Good, he can be upgraded to Mr. Right hopefully if you are in love with him, despite the fact he is not what you would have ordered in a wonderful world. Some women believe that a combination of being smart and lucky in their 30s instead of 40s is an asset to find a man closer to your best match. It has been searched carefully and if found, then the three musts for any relationship, are intellectually curious, kind-friendly and financially stable. Other criteria are downgraded to wanting.

Many times in real life, women marry the wrong guy and the perfect men remain those they never met. This is all controlled by many factors like the held beliefs around love, the place you come from and the values you grow up with. Chemistry is an issue where both parties feel that instant click but this can be dangerously misleading on many occasions.

An author, ‘Lori Gottlieb’ wrote a book explaining her views about settling with Mr Good while waiting for Mr Right, otherwise the chance of missing out is high whereby you end up too old and lonely. She argued the common sense of marrying younger and when fertile rather than marrying old and emphasised the idea of selling out women’s dreams by shutting down their hearts.

However those men who would fit women’s cultural image of Mr Right, are still smart, interesting, and not movie stars attractive.

Gottlieb criticised herself in that she is 42 years old, went to Stanford medical school, wrote many books, and has a 4 years old boy from a sperm donor, stating she missed the boat because she was choosy and dreamt of a super husband - romantic, baggage free, catchy and fantastic, and she stated that in her culture she is been taught and told that she is the best, and deserves the best, and that we probably have a false perception of our worth. We just want the ten out of ten man because we think we are ten out of ten and actually we are not.

Women and marriage in Islam
Marriage sounds like a life sentence. In many Muslim societies women do not even benefit from the rights and privileges that Islam has given her. This can be due to many factors, like a combination of traditional masculine-dominated perceptions, local customs and traditions, narrow-minded understanding of Islamic teachings and economic factors, all of which have prevented women from achieving their dreams and aspirations.

The contentment of the family depends in the first place on a range of human values that should play between a husband and his wife in their shared life, whereby the concrete, the spiritual and ethical connections, the definite of the happiness of family circles, and the greater ability to endure the shocks of life. Our Prophet PUH said, “Best of my people is the man who shows his family not harshness but perfect kindness and goodness.”

Islam gave specific directions for the settlement of family quarrels. Islam has dignified women, and neither encouraged nor condemned the practice of domestic violence. On the contrary, Islam has established the rights of women to life, to ownership, to education, and to work and trade, making her choices, and having her rights, and condemned the idea of wives to be abused.

The family has always been at the centre of life in Arab societies, held in great value among young and old alike.

Marriage and marrying older
The phenomenon of women commonly marrying ‘older men’ is particularly prominent in the Arab societies for many reasons. The Arab societies gave men the right to marry and re-marry even if he gets older, to marry a much younger girl. Does that make any sense logically? I do not think so. Men in older age would not understand that concept. They grown up with that fake idea that a man can marry at any time and any age. Will that work in real life? Most girls who do that, do it for money point of view and for a secure life financially. The women then could have the same. She could choose a man at any age and settle with if she is convinced inside herself, but I personally do not favour that idea. I think the natural call for such a thing, and the healthy way, is to marry who is closer to your age group, for better understanding and sharing the same interests and values as well.
Marriage in the Arab world is therefore both an individual and a family matter.

Conventional principles surrounding girls' virginity and family honour play a key role in Arab families' decisions to get their daughters married at young ages without further education. They think marriage is the best option for them.

Optimistic and hopeful
More-educated women also generally marry later than their less-educated counterparts. Thus high-quality women are unable to find a suitable partner because of a limited pool of suitable candidates. Single women in the Arab world do not have an easily distinct or secure place in society.
Firstly we thank all regional academics and readers who took part in this survey and who contributed survey questions.

The reply/return rate from academics was 73% and participating academics came from a range of universities and medical schools representing Iraq, Egypt, Lebanon, Saudi Arabia, Libya, Iran, Turkey, Pakistan, UAE and Jordan.

Your needs and wishes
Data from the survey returns, and comments, were remarkably consistent and showed clear needs and preferences of readers, practitioners and academics.

On the academic side, the free to air archives of previous issues were used 'often' by all but one respondent, (the highest response of the survey) making this a clear need as a research tool. While these archives can be accessed free on our own websites many respondents (also) wanted them on various databases that were either used or preferred by their national academic bodies.

Database presence
We are currently listed on Ebsco databases (including EbscoHost, DynaMed and Cinahl), and Al Manhal database and we have applied for listings on ISI. We will advise further once we hear.

All articles are being given a DOI (Digital Object Identifier) as they go on to the Al Manhal database.

In one Middle East country we have submitted the journals to the national academic bodies and have had them meet the national academic criteria, and become accepted, making this another route of journal acceptance for academics publishing their research.

Most readers wanted ‘an email reminder of new issues out’ and more CME. Both of these will be implemented as from next issue (February 2012) and you can click the following email address to be put onto the email distribution list for the Journal Alerts emails. Contact: admin@mediworld.com.au.

These Alerts will carry journal titles and their authors, for the current issue, with the ability to click directly to the online article.

Readers almost unanimously liked the variety of topics, the relevance of topics and the fact that regional issues were covered. They were also appreciative of the journals as a free resource and most have requested no advertising on the journals. A full report of both surveys can be found further below.

Impact factor / Health Index
These tend to be produced on a publishers’ own database (and therefore reflect that company’s or databases journals only) or can be worked out via formulae/statistics or via Google search engine.

The accepted formula is:
The impact factor for a journal is calculated based on a three-year period, and can be considered to be the average number of times published papers are cited up to two years after publication. For example, the impact factor 2011 for a journal would be calculated as follows:

A = the number of times articles published in 2009-2010 were cited in indexed journals during 2011
B = the number of articles, reviews, proceedings or notes published in 2009-2010
Impact factor 2011 = A/B

You can also use the following formula to find out the number of citations on an (your) individual author’s /academic’s own articles:

http://code.google.com/p/citations-gadget/
Take a sample 3 year old issue and apply these formulae to it.

Webstats
The other report we will make available to you on a quarterly basis will be sourced from our ‘webstats’ software which has been running behind the journals since their launch and where we’ve seen our combined journal readership grow until its current level of circa 1,000,000 readers / month.

The top (8) MESA/MENA countries reading the journal are: India, Egypt, Pakistan, Jordan, Saudi Arabia, Yemen, Turkey, United Arab Emirates, and Bangladesh.
The top international reader countries are: USA, Australia, United Kingdom, Russian Federation, Indonesia, Malaysia, Canada and South Africa.

Most used search engines are: b3090789.crawl.yahoo.net; crawl-66-249-67-18.googlebot.com; 213.186.122.2.utel.net.ua; imparser12.yandex.ru; msnbot-207-46-199-37.search.msn.com

Most common access points (after a direct request for the website) are for articles on surgical management, antibiotic sensitivity, and CME.

Academic Survey
The reply/return rate from academics was 73% and contributing academics came from a range of universities and medical schools from Iraq, Egypt, Lebanon, Saudi Arabia, Libya, Iran, Turkey, Pakistan and Jordan.

Top three most read journals were: (1) Middle East Journal of Family Medicine/ World Family Medicine (MEJFM/WFM), (2) Middle East Journal of Nursing (ME-JN) and (3) the Middle East Journal of Psychiatry and Alzheimers (ME-JPA). The latter was only launched in 2011 but its early high readership shows a regional need for information on this topic.

Most academic readers (75%) read ‘articles of interest’ mainly, but 10% read every article. All but one respondent accesses the archives ‘often’.

In regard to ‘new titles’ there was most interest in, in order, a Journal of Public Health, a Journal of Epidemiology and a Journal of Paediatrics. Other journal topics of interest to the region are: Medical Education and Accreditation; Women’s health and other issues related to women, Emergency Medicine; Social medicine.

Most academics did not want to see advertising in the journal.

Preferred article types were consistently:
* Original contribution/Clinical investigation
* Review articles
* Education and training
* CME

New topics academic readers would like to see covered include: Medical education research and operational research; Special Education and Evaluation

Consistently readers like the diversity of the topics, the relevance of the topics and the coverage of regional research.

Negative comments were: many wanted ‘theme issues’ and some wanted a colour cover/image. While the possibility of ‘theme issues’ will depend on the quality, number and type of articles submitted - we will in future provide a colour cover, but are conscious that this may add a cost to those organisations who print them out for their members so we would like to hear any negative feedback on this point.

Comments ticked in agreeance (top 6 in order):
* I would like an email reminder that there is a new issue out.
* I appreciate that it is a free resource for doctors of the region.
* I would like to see more research
* The MEJFM deals in real medicine relevant to the Middle East region
* I am happy with the publication in its current form
* I would like to see theme issues

Most readers or authors would also like a pdf copy of the individual articles, in addition to the full pdf. This will be instituted from February 2012.

Academic Competencies
As some respondents answered nationally and others for their particular medical school we could not make national assumptions from the data collected. The following is a link to a recent article and survey done on this topic which probably provides a more complex overview. See: www.mejfm.com/July2010/globalcompetencies.htm

Research in the Region
Data showed:
Allocation of research budget to academic institutions has been graded as average to poor
Allocation of qualified personnel was graded as average to good
Most students have free access to online medical databases and a variety of databases are used, and there are no limits on which can be used free in most institutions
Most existing research facilities (computer and other) were graded average.
Most have compulsory research activities for students and most have established guidelines.

Most countries have: Subsidised medicine, Spreading/diffusion of medical insurance and Universal access to medical facilities and most found the focus of their medical school as socially accountable.

National situation
There were widespread shortages of both nurses and GPs/family physicians reported across the region and primary care was undertaken in either hospital outpatients (mostly) or a variety of other locations such as government provided health centres, schools, health houses, industry, armed forces and other.

The percentage of health and medical care provided through primary care was reportedly between 39% (Egypt) and 80% (Iraq).