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Health status of the patients before lung transplantation: A report from Iran

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Summary

Background:

Breathing is essential for living. When someone is a lung transplantation candidate, it could be imagined that the breathing difficulties that he/she is experiencing has a great impact on his/her health status.

Material/Methods:

We asked all the patients on the lung transplantation waiting list at Masih Daneshvari Hospital to complete the validated Iranian version of Global Health Questionnaire (GHQ). It was the 28-item version of the questionnaire with scores ranging from 0 to 84. Patients filled the questionnaire while on routine out-patients visits. The higher scores represent greater distress.

Results:

Seventy patients were requested to participate in the present study out of which 64 filled the questionnaire completely. Mean \pm SD (min-max) scores of the questionnaire subscales were as follows: somatic symptoms =8.2 \pm 4.2; anxiety =8.1 \pm 4.9; 8-14, depression =4 \pm 4.2; social dysfunction =10.4 \pm 4 and the overall score =30.6 \pm 9.5. There was no significant difference in the subscales of the questionnaire based on gender and disease type. Higher age was associated with less social dysfunction ($r=-0.273$, $p=0.023$). Higher level of Prednisolone consumption and lower hemoglobin were associated with poorer somatic status ($r=0.644$, $p=0.033$; $r=-0.410$, $p=0.030$ respectively).

Conclusions:

Our findings indicate that lung transplantation candidates have extremely poor health state. It seems that pulmonary problems and activity limitations put more pressure on younger patients and causes social difficulties.

Key words

lung transplantation • general health • transplantation candidates

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BACKGROUND

The General Health Questionnaire (GHQ) is a tool currently used to evaluate mental health, and is a self-administered tool and is used for the screening of non-psychotic psychiatric illness. It is used both in clinical settings, and in epidemiologic studies on mental health status in general populations. A person with a high GHQ score is considered to have a high level of psychological distress, including depression, anxiety, and other psychiatric conditions [1,2].

The original questionnaire was first developed to be a 60-item instrument, however, currently a variety of shortened versions of it including the GHQ-30, the GHQ-28, the GHQ-20, and the GHQ-12 is also available. Ever since the development of the GHQ by Goldberg in the 1970s this tool has been used in various settings and different cultural backgrounds to a great extent [1-5]. Some of these are large national mental health surveys of the general population, for example UK household survey [6]. In Iran also, the GHQ-28 has acceptable psychometric properties [7] and had been widely used in Iran [8-15].

GHQ has been also used in transplantation settings, as well in pre-transplantation or transplantation waiting list [16-18]. These have made GHQ a useful measure in organ transplantation waiting lists.

In the present paper the results of a GHQ-28 given to patients in a lung transplantation waiting list in a single center in Iran are reported.

MATERIAL AND METHODS

The present study is a cross-sectional study that was carried out from August to September 2007 during the course of which 70 lung-transplantation candidates in the lung transplantation waiting list of the clinic of Masih Daneshvari Hospital were asked to enter the study. The inclusion criteria were as follows: stable clinical condition, absence of any acute concomitant disease or infection. The present study was approved by the ethics committee of Lung Transplantation Research Center, affiliated to the National Research Institute for Tuberculosis and Lung Disease (NRITLD), Shahid Beheshti University of Medical Sciences, Tehran, Iran. The participants signed an informed written consent for participating in the study.

Chronic Obstructive Pulmonary Disease (COPD) patients were considered candidates for lung

transplantation if their forced expiratory volume in one second was less than 25% of predicted standards and that their condition was continuing to deteriorate. For patients with bronchiectasis and cystic fibrosis, forced expiratory volume in one second less than 30% was taken as the key index; with patients who had restrictive diseases, such as the Idiopathic pulmonary fibrosis (IPF), vital capacity less than 60% and progressive condition was used.

Demographic data collected included gender, age, marital status and education. Candidates were asked to complete GHQ-28 in their first visit after they were placed in to waiting list. The questionnaire was completed by an assistant for uneducated subjects. We used Persian-language version of the GHQ-28 (13). GHQ-28 has 28 items, in 4 subscales, each consisting of seven items. The items are scored using Likert type that is 1, 2, 3, 4 these are then converted to a bimodal 0, 0, 1, 1 for response category. Total score and its sub-scores are the indicator of severity of the burden. [19].

Statistical analysis was performed using SPSS version 13.0 for Windows. Data was expressed as means \pm SD and percentile of total. Subjects were classified into those with low and high GHQ scores using a cut point of 8.8, 2.2 for each sub-score. We used t-test and one-way ANOVA to compare the sub-scores between different groups based on gender and disease type. We also used Pearson correlation coefficient to study the relationship between these sub-scores and age, laboratory findings, spirometry results and 6 minute walk test results.

RESULTS

Seventy patients were requested to participate in the present study, 64 of which filled the questionnaire completely. Table 1 presents the frequency of age group, gender, underlying lung disease in lung transplant candidates.

The mean scores of the questionnaire subscales were as follows: somatic symptoms 8.2 ± 4.2 ; anxiety 8.1 ± 4.9 ; depression 4 ± 4.2 ; social dysfunction 10.4 ± 4 and the overall score was 30.6 ± 9.5 .

45.3% of the population report that they had a degree of non-psychotic mental health burden, in the previous month, the most frequent problem was social dysfunction (53.1%) and the least frequent was depression (29.7%). Somatic symp-

Table 1. Frequency of age group, gender, underlying lung disease in lung transplant candidates in Iran (n=64).

		Frequency	Percent
Age	15 or less	2	3.1
	15-24	13	20.3
	25-34	15	23.4
	35-44	12	18.8
	45-54	14	21.9
	55 or higher	8	12.5
Gender	Female	19	29.7
	Male	45	70.3
Disease	Bronchiectasis	23	35.9
	Fibrosis	23	35.9
	Emphysema	5	7.8
	COPD	5	7.8
	PPH	4	6.2
	Histiocytosis	2	3.1
	Bronchiolitis obliterans	1	1.5
	Sandblast	1	1.5

toms (46.9%), and anxiety (42.2%) fell between the above mentioned disorders. Table 2 presents the results after the analysis of the GHQs in lung transplant candidates in Iran.

There was no significant difference in the subscales of the questionnaire based on gender and disease type. Higher age was associated with less social dysfunction ($r=-0.273$, $p=0.023$). Higher level of Prednisolone consumption ($r=0.644$, $p=0.033$) and lower hemoglobin level ($r=-0.410$, $p=0.030$) were associated with poorer somatic status.

DISCUSSION

The present study showed that 45.3% of patients in lung transplant waiting lists report a degree of non-psychotic mental health burden, in the previous month. The most frequent problem was social dysfunction (53%) and less was depression (30%). Somatic (47%), and anxiety (42%) fall between the above mentioned disorders. Age was linked to poorer social dysfunctionxx, higher level of prednisolone consumption and lower hemoglobin were associated with poorer somatic complaints.

Table 2. Results of GHQ in lung transplant candidates in Iran (n=64).

GHQ total (cut point 8.8)	Good	35	54.7
	Poor	29	45.3
GHQ somatic (cut point 2.6)	Good	34	53.1
	Poor	30	46.9
GHQ anxiety (cut point 2.6)	Good	37	57.8
	Poor	27	42.2
GHQ social interactions (cut point 2.6)	Good	30	46.9
	Poor	34	53.1
GHQ depression (cut point 2.6)	Good	45	70.3
	Poor	19	29.7

Very similar to our reported frequency of general psychological distress, according to the related literature, up to 47% of patients who are lung transplant candidates meet the criteria for at least one psychiatric disorder [20]. This is related to end-stage pulmonary disease which is associated with significant psychological distress [20-22].

Unlike solid-organ transplantation, short-term and long-term outcomes of lung transplantation take longer times to manifest, with survival rates of 1 year for 3/4 and 5 years for 1/2, for patients who went under surgery and receive lung transplant [23]. The post lung transplantation outcomes will be poorer with the presence of psychosocial problems, namely more rejection episodes, [24] increased length of hospitalization [25], and higher levels of emotional distress. [26,27] To this fact, we should add the scarcity of donor lungs. These all together highlight the need for careful screening of potential lung transplant candidates to ensure optimal outcomes.

According to the literature, this screening process involves a thorough medical evaluation, alongside a full psychological assessment [28]. But even after entering the waiting list, there are chances of increasing rates of psychological and psychiatric problems. Among the main stressors in this phase are separation from the support system as a result of relocation, a progress in the course of the illness, and the fear of not receiving the donor lungs in time, [29]. One out of 5 patients will acquire psychiatric symptoms while they are on the lung transplant waiting list, and this brings the signifi-

cance of continuing the mental health follow-up during waiting list to light, not just as a screening carried out at the initial evaluation. There is, however, some hope, since improvement in the psychological functioning, is reported following the implementation of psychosocial intervention. Moreover, greater improvement could be expected as soon as psychiatric disorders in lung transplant candidates are treated. [28]

CONCLUSIONS

It can be stated to conclude, focusing on the month before the patient filled the questionnaire, psychological burden exists in a little less than half of lung transplant candidates, the most frequent problem seems to be social dysfunction, followed by somatic symptoms, anxiety, and then depression. These means in pre-transplantation state, lung candidates should be also screened for other frequent psychological conditions as well, as opposed to the well-known and well-focused aspects such as depression which tend to attract more attention, most important of these aspects can be social dysfunction.

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