

# DEPRESSION, ANXIETY AND SELF-ESTEEM IN RELATION TO QUALITY OF LIFE IN PATIENTS WITH CYSTIC FIBROSIS

Iveta Nagyova<sup>1,2</sup>, Katarina Stepankova<sup>3</sup>, Anna Feketeova<sup>4</sup>, Branko Takac<sup>5</sup>, Lenka Kopcova<sup>6</sup>, Eva Beresova<sup>7</sup>



<sup>1</sup> Graduate School Kosice Institute for Society and Health, Faculty of Medicine, PJ Safarik University, Kosice, Slovakia  
<sup>2</sup> Institute of Public Health - Department of Social Medicine, Faculty of Medicine, PJ Safarik University, Kosice, Slovakia  
<sup>3</sup> Slovak Cystic Fibrosis Association, Slovakia  
<sup>4</sup> Children's Faculty Hospital, Kosice, Slovakia  
<sup>5</sup> Children's Faculty Hospital, Banska Bystrica, Slovakia  
<sup>6</sup> University Hospital of L. Pasteur, Kosice, Slovakia  
<sup>7</sup> Faculty Hospital of F.D. Roosevelt, Banska Bystrica, Slovakia

## BACKGROUND

Numerous studies have demonstrated that in patients with chronic disease markers of disease severity are only modestly associated with quality of life (QoL), whereas depression, anxiety and self-esteem are important correlates. Few studies of patients with cystic fibrosis (CF) have looked at the associations between these variables [1,2]. The aim of this study was to examine whether CF patients with symptoms of depression, anxiety and lower self-esteem report diminished QoL.

## METHODS

### SAMPLE

- N=47 adolescents and adults with CF out of which N=24 males (51%)
- from 4 CF centres in Slovakia, Kosice and Banska Bystrica cities
- mean age 23.9±10.0 years

### MEASURES

- Cystic Fibrosis Questionnaire-Revised (CFQ-R)
- Hospital Anxiety and Depression Scale (HADS)
- Rosenberg Self-Esteem Scale (RSE)

### STATISTICAL ANALYSES

- t-test, multiple linear regression analysis
- Independent variables: age, gender, FEV1, BMI, anxiety, depression, self-esteem
- Dependent variable: quality of life (CFQ-R)



## RESULTS

Fig 1. Differences between men and women in CFQ-R domains

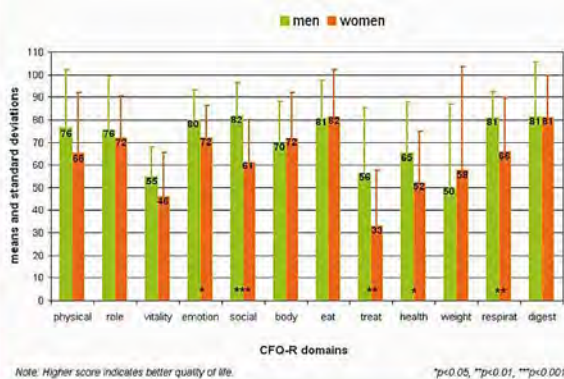
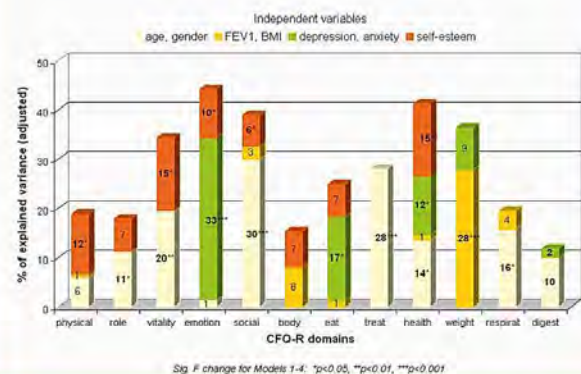


Fig 2. Multiple regression analyses. Dependent variable: CFQ-R domains



Between males and females significant differences were found in CFQ-R domains (Fig 1). Males scored significantly higher in Emotional Functioning, Social Functioning, Treatment Burden, Health Perception and Respiratory Symptoms indicating better quality of life in these dimensions.

The results of multiple regression analysis (Fig 2) show that after controlling for relevant sociodemographic (age, gender) and clinical variables (FEV1, BMI) symptoms of depression and anxiety were significantly associated with lowered QoL in 3 out of 12 CFQ-R domains: Emotional Functioning, Eating Disturbances and Health Perception

Self-esteem was found to be significantly associated with 5 CFQ-R domains: Physical Functioning, Vitality, Emotional Functioning, Social Functioning, and Health Perception; even when controlling additionally for symptoms of depression and anxiety.

After entering all variables into the equation the total explained variance for CFQ-R domains varied between 9-41%.

## CONCLUSIONS

QoL is an important clinical outcome measure in CF. Clinicians need to be sensitive to symptoms of depression and anxiety as well as levels of self-esteem in patients with CF, because they seem to be important determinants of QoL. Psychological interventions aimed on increasing the self-esteem may potentially improve QoL among patients with CF.

## REFERENCES

- [1] Riekert KA, Bartlett SJ, Boyle MP, Krishnan JA, Rand CS. The Association Between Depression, Lung Function, and Health-Related Quality of Life Among Adults With Cystic Fibrosis. *Chest* 2007; 132:231-7.
- [2] Cruz J, Kristen MS, Marciel K, Quiltnar AL, Schechler MS. Anxiety and Depression in Cystic Fibrosis. *Seminars in Respiratory and Critical Care Medicine* 2009; 30, 5:569-78.

## ADDRESS FOR CORRESPONDENCE

Iveta Nagyova, PhD  
 GS KISH, UPJS FM  
 Tr. SNP 1  
 040 11 Kosice, Slovak Republic  
 iveta.nagyova@upjs.sk  
 www.kish.upjs.sk

Katarina Stepankova, MD  
 Slovak CF Association  
 Park Angelinum 2  
 040 01 Kosice, Slovak Republic  
 kstep@stonline.sk  
 http://cfasociacia.wordpress.com

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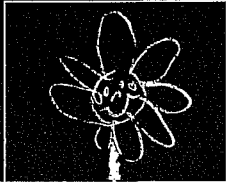
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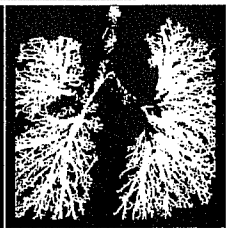




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Poster Session Abstracts

We can assume that being the mother of a single ill child carries an emotional burden that increases anxiety, since it raises the needs of practical responses during everyday life. The contemporary presence of one or more healthy children instead, is linked to a higher depression level, since it increases mothers' doubts about their capacity of being a resource to fulfill the needs of their children.

The final results of our study are preliminary ones, since they are related only to the CF Centre of Florence. They have to be spread and integrated with the data from other CF Italian Centers, which have already taken part in TIDES. We think it could be interesting to add the variable about the presence of two ill children in the family.

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CARE OF THE CHRONIC PATIENT AND BURNOUT: DOES A HIGHER RISK EXIST?

Catastini, P.; Martellacci, A.; Lenzi, C.; Gori, S.; Braggion, C. Pediatric, Meyer Hospital, Florence, Italy

**Background:** Taking care of chronic patients, and facing the difficulties that accompany their disease and needs always represents a strong commitment by the team.

The patient and his parents, who, in a situation of chronic illness, will guide him during his life or a large part of it, often ask the healthcare team not just for care or management support but also for a general high quality of life, which is limited and affected by the condition of the illness.

This means that taking care of the chronically diseased patient, from the personal and familiar point of view, includes not only providing for the basic therapeutic needs, but also involves method and time dedicated to re-vitalizing a patient, which is especially involved because of a deep need for anxiety and anguish control, due to the condition.

Emotional Exhaustion, Depersonalization and Personal Accomplishment characterize the Burnout Syndrome. This syndrome is often the cause of professional drop-out, professional absences and loss of motivation, especially in jobs held by aides (health-related, educational and social).

Therefore, taking care of patients affected by a chronic progressive disease like cystic fibrosis, which is loaded with huge emotional fatigue, is an important element to analyze.

**Aims:** This study aims to evaluate whether the doctors who are involved daily in the chronic department, have a higher risk of developing Burnout Syndrome.

**Methods:** We administered the Mashlach Burnout Inventory (MBI, C. Maslach, S.E.Jackson and M.P.Leiter, 1981) to 22 medical doctors who operate in the Meyer Children Hospital in Florence. Thirteen of them (group 1) were taken from the CF, neuro-metabolic, diabetes departments and rheumatology and the other nine (group 2) were from the day hospital of dermatology, otolaryngology and ophthalmology.

We applied frequency analysis to the resulting data.

**Results:** Our results show:

- Depersonalization(DP) level is 15% higher in group 1
- Emotional exhaustion (EE) is 20% higher in group 2

**Conclusion:** Working with chronic illness represents a particularly difficult engagement for health related jobs. Specifically, doctors who work daily with chronic disease (group 1) have a depersonalization (DP) level 15% higher than doctors who work in a day hospital (group 2).

However, group 2, made up of doctors who work in a day hospital, shows an Emotional Exhaustion (EE) level 20% higher than group 1.

Our study shows a possible risk of Burnout Syndrome in both groups, though the DP is higher in group 1 demonstrating a critical condition in which the doctors could have difficulty in dealing with patients' emotional problems.

This result indicates the need to discuss these risks with the different healthcare groups in specific meetings.

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**Background:** Numerous studies have demonstrated that in patients with chronic disease markers of disease severity are only modestly associated with quality of life (QoL), whereas depression, anxiety and self-esteem are important correlates. Few studies of patients with cystic fibrosis (CF) have looked at the associations between these variables. The aim of this study was to examine whether CF patients with symptoms of depression and anxiety and lower self-esteem report diminished QoL.

**Methods:** The sample consisted of 47 adolescents and adults (≥14 years) with CF from 4 CF Centres in Slovakia (24 males - 51%, mean age 23.9±10.0 years). Patients completed the Cystic Fibrosis Questionnaire (CFQ-R), Hospital Anxiety and Depression Scale (HADS) and Rosenberg Self-Esteem Scale (RSE). Multiple linear regression analysis was used to explore the data.

**Results:** After controlling for relevant sociodemographic (age, gender) and clinical variables (FEV1, BMI) symptoms of depression and anxiety were significantly associated with lowered QoL in 3 out of 12 CFQ-R domains: Emotional Functioning, Eating Disturbances and Weight. Self-esteem was found to be significantly associated with 5 CFQ-R domains: Physical Functioning, Vitality, Emotional Functioning, Social Functioning, and Health Perception; even when controlling additionally for symptoms of depression and anxiety. After entering all variables into the equation the total explained variance for CFQ-R domains varied between 9-41%.

**Conclusions:** QoL is an important clinical outcome measure in CF. Clinicians need to be sensitive to symptoms of depression and anxiety as well as levels of self-esteem in patients with CF, because they seem to be important determinants of QoL. Psychological interventions aimed on increasing the self-esteem may potentially improve QoL among patients with CF.

Table 1. Linear regression model: associations of self-esteem and quality of life; controlled for sociodemographic, clinical and psychological variables

	CFQ-R domains											
	physical	role	vitality	emotion	social	body	eat	treat	health	weight	respir	digest
gender	-.20	-.30	-.25	-.14	-.52***	.12	-.05	-.51***	-.25	.05	-.35*	-.29
age	.03	.07	-.20	.29	.20	-.29	-.20	.01	-.11	-.31	-.25	.01
FEV1	-.26	-.06	.06	.00	.28	.07	-.39*	.09	.12	-.27	-.14	-.23
BMI	-.05	.03	.13	-.17	-.02	.37*	.15	.06	.17	.60***	.25	.17
depression	-.02	-.13	.20	-.25	-.02	.22	-.33	-.01	-.10	-.33	-.13	.07
anxiety	.12	-.21	-.16	-.22	.02	-.05	-.17*	-.15	.09	.06	-.05	-.26
self-esteem	.43*	.34	.46*	.38*	.32*	.36	.34	.07	.35**	.09	-.07	.17
R <sup>2</sup> / Adjusted R <sup>2</sup>	.31/.17	.29/.12	.43/.29	.53/.41	.50/.38	.27/.09	.36/.26	.36/.21	.53/.41	.43/.30	.30/.14	.29/.11

Displayed values are betas.

\* p ≤ 0.05, \*\* p ≤ 0.01, \*\*\* p ≤ 0.001