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INDIVIDUAL DIFFERENCES INFLUENCE QUALITY OF LIFE IN ASTHMA PATIENTS: THE ROLE OF ANXIETY AND GENDER

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INTRODUCTION

- Asthma is amongst the four most common chronic disorders. Despite medical advances it has been shown to be on the increase (WHO, 2005).

- Asthma is a complex lung disease linked commonly to personal, social, economic burdens and even morbidity (WHO, 2005)

- Patients with chronic illnesses generally show a poor generic and disease-specific health-related QOL (Sprangers et al., 2000).

- Individual characteristics such as anxiety and gender are thought to influence asthma related QOL (Belloch et al., 2003).

- Research to clarify discrepancies in gender related results is needed, given existing mixed findings (Belloch et al., 2003).

INTRODUCTION

- Past research investigated the relationship between asthma and various mental health disorders (Goodwin, Jacobi & Thefeld, 2003).

- A link between depression, anxiety and asthma related disorders is especially pronounced (Kullowatz, Kanniess, Dahme, Magnussen & Ritz, 2007).

- Review of the literature suggests that this population experiences anxiety prevalence ranging from anxiety symptoms to anxiety diagnoses (Katon, Richardson, Lozano & McCauley, 2004).

- Asthma patients have an increased prevalence of anxiety disorders compared to otherwise healthy populations (Deshmukh et al., 2007).

RESEARCH SIGNIFICANCE & INNOVATION

- New line of research investigating individual difference factors in relation to psychopathology, suggests that psychological inflexibility or experiential avoidance (EA) may be a particularly toxic variable associated with the etiology or maintenance of psychopathology and particularly anxiety disorders (Karekla & Panayiotou, 2011).

- High levels of EA may negatively impact QOL in patients who are suffering from anxiety (Karekla, manuscript in preparation).

- To date, most studies examining the association between anxiety problems and asthma, simply explore their co-occurrence.

STUDY AIMS

- Fill the gaps in the literature and assess the relationship between different anxiety levels, gender and reported QOL in adult asthma patients.
- Specifically, the study aimed to investigate whether different levels of anxiety (non-clinical, sub-clinical, vs. clinical anxiety) would differentially impact on QOL and whether gender would act as a moderator to the relationship.
- Experiential avoidance (EA) was investigated as a potential mediator of the relationship.

HYPOTHESES

- Asthma would have a negative impact on asthma-specific QOL
- QOL would be at equal levels between men and women in the non-clinical anxiety group of asthma patients.
- In the sub-clinical and clinical anxiety groups, women would present with lower QOL than men.
- Anxiety group differences on QOL parameters will arise as a function of EA.

SAMPLE

- Participants were recruited from the list of asthma patients of the Pulmonary Clinic of the Nicosia General Hospital
- Inclusion criteria:
  - Primary clinical diagnosis of asthma,
  - Were at least eighteen years of age or older,
  - Had a sufficient mastery of the Greek language.

    Exclusion criteria: Ten of these patients were excluded because they presented with other pneumological conditions and not asthma.

- Patients were first contacted by telephone. A total of 574 questionnaires were sent to consenting participants. The return rate yielded was 37.28%.
- The total sample (N = 204) 136 women (66.7%).

MEASURES

1. 32 item Greek-version of the Standardized Asthma Quality of Life Questionnaire (AQLQ(S); Juniper, Buist, Cox, Ferrie & King, 1999)
2. Patient Health Questionnaire (PHQ; Spitzer et al., 1999; Karekla et al., 2012).
3. The AAQ-II (Bond et al, 2011) is a 7 item measure of experiential avoidance and psychological flexibility.
4. Demographic questionnaire (e.g. age, gender etc.).

GROUP CLASSIFICATION

- PHQ (questions 3, 4, & 5) used to classify participants into one of three anxiety groups (nonclinical, sub-clinical, and clinical anxiety).
  - Questions 3 and 4, were used to diagnose panic disorder. Question 5 other anxiety disorders.
- Patients with no panic or anxiety symptoms were classified as non-clinical control.
- The sub-clinical group was comprised of patients who presented some symptoms over several days of the week but did not meet criteria for a diagnosis of an anxiety disorder.
- The third group was comprised of individuals who met criteria for panic disorder or another anxiety disorders or both.

DEMOGRAPHICS

	Non Clinical	Sub Clinical	Clinical
Male	39 (22.4%)	20 (11.5%)	3 (1.7%)
Female	51 (29.3 %)	45 (25.9%)	16 (9.2 %)
Total	90 (51. 7%)	65 (37. 4 %)	19 (10.9 %)

ANALYSIS

- DV: AQLQ-S
- IV: Anxiety (3 groups)
  Gender (2 groups)
- Covariate: AAQ

- ANCOVA using SPSS.

RESULTS

- <u>Significant Main effect</u> for gender on all QOL subscales. $F_{(5,10)} = 3.34$, $p < .05$, $\eta^2 = .10$.
- Women (regardless of anxiety group) scored lower than men on:
  - <u>Activity limitations</u>, $F_{(1,191)} = 8.00$, $p < .05$, $\eta^2 = .04$ (Men: $M = 4.91$, $SD = 1.48$; Women: $M = 4.28$, $SD = 1.46$).
  - <u>Symptoms</u>, $F_{(1,191)} = 5.81$, $p < .05$, $\eta^2 = .03$ (Men: $M = 4.77$, $SD = 1.48$; Women: $M = 4.19$, $SD = 1.60$).
  - <u>Emotional function</u> $F_{(1,191)} = 10.04$, $p < .05$, $\eta^2 = .05$ (Men: $M = 5.42$, $SD = 1.27$; Women: $M = 4.74$, $SD = 1.47$).

RESULTS

- Significant main effect for anxiety group on QOL parameters, $F_{(5, 10)} = 2.75$, $p < .05$, $\eta^2 = .08$.
- The three groups differed on all of the dependent variables.
  - Activity limitations subscale mean total score, $F_{(2, 166)} = 6.65$, $p < .05$, $\eta^2 = .08$.
  - Symptoms subscale mean total score, $F_{(2, 166)} = 7.91$, $p < .001$, $\eta^2 = .09$.
  - Emotional dysfunction subscale mean total score, $F_{(2, 166)} = 12.43$, $p < .001$, $\eta^2 = .13$.
  - Environmental stimuli subscale mean total score, $F_{(2, 166)} = 6.35$, $p < .05$, $\eta^2 = .07$.

RESULTS

- Significant main effect of AAQ on all the QOL parameters, $F_{(5, 143)} = 4.67$, $p < .001$, $\eta^2 = .14$.
- Univariate effects
  - $F_{(1, 154)} = 16.97$, $p < .001$, $\eta^2 = .10$.
    - Activity limitations $F_{(1, 154)} = 11.58$, $p < .001$, $\eta^2 = .07$.
    - Symptoms $F_{(1, 154)} = 17.97$, $p < .001$, $\eta^2 = .11$.
    - Emotional dysfunction $F_{(1, 154)} = 16.62$, $p < .001$, $\eta^2 = .10$
    - Environmental stimuli $F_{(1, 154)} = 9.08$, $p < .05$, $\eta^2 = .06$.
  - The interaction between gender and anxiety group continued to be non significant.
  - The main effects for gender continued to be significant ($F_{(5, 143)} = 3.24$, $p < .05$, $\eta^2 = .10$), whereas the main effect for anxiety group ceased to be significant ($F_{(10, 286)} = 1.09$, $p > .05$, $\eta^2 = .04$).

Means and standard deviations of gender by anxiety group on the mean total and subscales of the AQLQ(S)

AQLQ(S)	Clinical Anxiety		Sub-clinical Anxiety		Non-clinical Control	
	Male M(SD)	Female M(SD)	Male M(SD)	Female M(SD)	Male M(SD)	Female M(SD)
MeanTot	4.04 (1.33)	3.53 (1.44)	4.64 (1.46)	4.26 (1.22)	5.16 (1.23)	4.88 (1.38)
Activity limitations	4.09 (1.65)	3.67 (1.33)	4.87 (1.66)	4.21 (1.38)	5.16 (1.30)	4.85 (1.47)
Symptoms	4.22 (1.30)	4.75 (1.65)	4.49 (1.61)	4.19 (1.42)	5.12 (1.34)	4.75 (1.65)
Emotional Function	4.53 (1.60)	3.80 (1.90)	5.26 (1.25)	4.78 (1.20)	5.75 (1.06)	5.36 (1.26)
Environmental Stimuli	2.75 (1.09)	3.66 (1.62)	3.75 (1.95)	3.95 (1.26)	4.56 (1.62)	4.65 (1.45)

Note: MeanTot = Mean Total of AQLQ(S)

Univariate effects of anxiety groups on the mean total and subscales of the AQLQ(S)

AQLQ(S)	Clinical Anxiety		Sub-clinical Anxiety		Non-clinical Control	
	Mean	SD	Mean	SD	Mean	SD
Mean Total of AQLQ(S)	3.62[ab]	0.32	4.38[ac]	0.17	5.00[bc]	0.14
Activity limitations	3.75[b]	0.35	4.41[c]	0.18	4.98[bc]	0.15
Symptoms	3.42[ab]	0.37	4.28[ac]	0.19	4.90[bc]	0.15
Emotional Function	3.93[ab]	0.31	4.92[ac]	0.16	5.53[bc]	0.14
Environmental Stimuli	3.50[b]	0.37	3.89[c]	0.19	4.61[bc]	0.16

Note: [a] = clinical group significantly differs (p< .05)from sub-clinical group,
[b]= clinical group significantly differs (p< .05) from non-clinical group,
and [c] = sub-clinical group differs (p< .05) from non-clinical group.

DISCUSSION

✓Asthma has a negative impact on the asthma-specific QOL

✓This negative impact is greater for asthmatic women compared to asthmatic men on all subscales individually and overall.

✓As expected, both men and women in the non-clinical group, presented with better asthma-specific QOL when compared to the other two groups.

✓The clinical anxiety group presented with lower overall QOL, compared to the subclinical group.

✓The clinical group did not differ significantly from the sub-clinical group for symptoms and the environmental stimuli subscales.

✓The results of the ANCOVA indicate that gender differences in QOL parameters did not vary as a function of EA.

✓Anxiety group differences on QOL parameters however, may arise as a function of EA.

LIMITATIONS

o Self-report measures may be subject to recall bias. However, the questionnaires used have been shown to be valid evaluation tools with excellent measurement properties (Juniper et al., 1999; Spitzer et al., 1999).

o AQLQ has been used and validated for ages ranging between 17 and 70, our study included participants who were aged 70 years and older.

o Number of patients for each anxiety group was not equal.

o The cross-sectional nature of this study makes it difficult to determine the precise nature and causal direction between anxiety and QOL.

FUTURE WORK

- Results may contribute to the design of more personalized treatment programmes for asthma and related disorders, taking QOL into consideration.
- Individual difference factors such as perception of and actual disease severity, dyspnea, level of medication (Wijnhoven et al., 2003) smoking, and BIM (Naleway et al., 2006) need to be further explored.
- Longitudinal studies may help with directionality of results and help decipher causal relationships.

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