Is the QOL of chronic pain patients impacted by the presence of psychiatric symptoms, gender and experiential avoidance?

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Quality of Life

- Chronic pain patients have increased prevalence of depressive disorders compared to otherwise healthy populations (VanPuymbroeck et al., in press).
- The presence of a psychiatric disorder, even without the existence of a medical diagnosis has been shown to influence QoL in patients (Hansson, 2002)
- Individuals suffering from a health related condition in addition to a psychiatric disorder present with doubly compromised QoL scores (Panayiotou & Karekla, under review).
- Chronic pain patients with a psychiatric diagnosis, report worse health-related QoL when compared with patients who suffer from a medical condition associated to chronic pain but have no psychiatric diagnosis (Stephane et al., 2013).

Gender role

- Gender has also been shown to influence the QoL of chronic pain patients, in a variety of studies.
- However, contradicting results have been observed (Andersson et al., 1993; Juniper et al., 1992).
  - Some studies suggest that chronic pain is more prevalent in women and that women also have significantly lower health-related QoL compared to men (Jones, 1995).
  - Other studies do not find gender differences (Unruh, 1996).
- More research is needed, to clarify the exact role that gender differences pose in relation to QoL in pain patients (Rustøen et al., 2004).

Experiential Avoidance

- A new line of research investigating individual difference factors, suggests that psychological inflexibility or inflexibly applied experiential avoidance (EA) may be a particularly toxic variable associated with the etiology or maintenance of both psychopathology and non-functional behaviors (Hayes, 2004; Karekla & Panayiotou, 2011)
- EA was found to mediate the relationship between coping and psychopathology (anxiety and depression) in chronic pain patients (Costa & Pinto-Gouveia, 2011).
- However, individual difference factors such as EA still have to be examined in terms of their mediation effect of psychopathology and QoL (Pinto-Gouveia et al., 2013).

Aims

- To date, most studies examining the association between psychiatric disorders and pain, have simply explored their co-occurrence (VanPuymbroeck et al., in press).
- This study aims to go a step further by:
  - Assessing the impact of psychiatric severity, as opposed to its co-occurrence, on the QoL of chronic pain patients
  - Exploring differences between 3 levels of anxiety and 3 levels of depression (non-clinical, sub-clinical and clinical levels) on physical and mental QoL in Greek-Cypriot chronic pain patients
  - Examining the possible mediating role of experiential avoidance between levels of anxiety and depression and physical and mental quality of life.
  - Examining the possible moderating role of gender between levels of anxiety and depression and physical and mental quality of life.

Hypothesis

- There will be a difference in QoL scores between the three groups (non-clinical, sub-clinical and clinical symptoms groups)
  - The non- clinical group will result in higher QoL
  - Both the sub-clinical and clinical groups will result in lower QoL
- Gender will moderate this relationship
  - Women presenting with clinical anxiety and depression are expected to display lower QoL than men, while gender differences will not be found in the other groups
- Experiential avoidance will mediate this relationship between level of anxiety and depression and QoL

Recruitment

- Chronic pain patients were recruited from the Cyprus Institute of Neurology and Genetics, private clinics and the Rheumatism Organisation of Cyprus
  - Potential participants were first contacted by telephone and were invited to take part in the study and attend a meeting at the Institute of Neurology
  - Total sample: 74 Greek-Cypriot chronic pain patients
- First they met with the study neurologist (interview, clinical exam, mini mental)
- Then they completed a packet of questionnaires
- Inclusion criteria:
  - Clinician diagnosis of chronic pain (confirmation by the study neurologist)
  - At least eighteen years of age
  - Had a sufficient mastery of the Greek language

Demographics

	n (%)
Gender	
Male	20 (27.03%)
Female	54 (72.97%)
Education	
Some classes of primary school	1 (1.4%)
Primary school	10 (13.5%)
Gymnasium	11 (14.9%)
Lyceum	25 (33.8%)
College/University	19 (25.7%)
Graduate studies/Ph.D.	7 (9.5%)
Marital status	
Single	6 (8.1%)
Living with partner	3 (4.1%)
Married	56 (75.7%)
Separated	1 (1.4%)
Divorced	4 (5.4%)
Widowed	3 (4.1%)
	mean *(SD)*
Age	53.60 *(11.86)*
Year of diagnosis	20.00 *(10.21)*

Measures

1. Demographic questionnaire (e.g. age, gender etc.).
2. The HADS (Zigmond and Snaith 1983; Whelan-Goodinson et al., 2009) assesses anxiety and depression symptoms.
3. The SF-36 (Stewart, Hays, & Ware, 1988) assesses quality of life across 8 health domains.
4. The AAQ-II (Bond et al, 2011) is a 7-item measure of experiential avoidance and psychological flexibility.

Group Classification & Analysis

- The HADS was used to classify participants into one of three groups (nonclinical, sub-clinical, and clinical) for anxiety and depression.
  - HADS score: 0 - 7 = Non-clinical
    8 – 10 = Sub-clinical
    11+ = Clinical

Groups (n)		
	Anxiety	Depression
Non-clinical	21	46
Sub-clinical	19	17
Clinical	34	11

- Analysis included:
  1. MANOVAs comparing either levels of anxiety or depression on QoL parameters
  2. MANCOVA examining the moderating role of gender between anxiety or depression levels and QoL
  3. Regression using Bootstrapping procedures were employed to examine the mediating role of EA between anxiety and depression levels and QoL

Results: Anxiety levels on QOL

- The three anxiety groups differed significantly regarding physical QoL ($F_{(2,71)}$= 5.33, p<.05)
  - Individuals with clinical anxiety levels had significantly lower physical QoL compared to the other two groups
  - Individuals with non-clinical anxiety levels did not differ significantly from individuals with subclinical levels
- The three anxiety groups differed significantly regarding mental QoL ($F_{(2,71)}$= 6.98, p<.05).
  - Individuals with clinical anxiety levels had significantly lower mental QoL compared to the other two groups
  - Individuals with non-clinical anxiety levels did not differ significantly from individuals with subclinical levels

Anxiety		
Groups	Physical QoL (SD)	Mental QoL (SD)
Non-clinical	171.85 (68.23)	206.03 (68.37)
Sub-clinical	185.72 (44.01)	204.52 (38.07)
Clinical	136.10 (60.48)	158.87 (49.92)

Results: Depression levels on QOL

- The three depression groups differed significantly regarding physical QoL ($F_{(2,71)}$ =11.49, p<.001)
  - Individuals with clinical depression levels had significantly lower physical QoL compared to individuals with non-clinical depression levels but did not differ from those with sub-clinical levels
  - Individuals with sub-clinical depression levels had significantly lower physical QoL compared to individuals with non-clinical depression levels
- The three depression groups differed significantly regarding mental QoL ($F_{(2,71)}$ =13.46, p<.001)
  - Individuals with clinical depression levels had significantly lower mental QoL compared to individuals with non-clinical depression levels but did not differ significantly from individuals with sub-clinical levels
  - Individuals with sub-clinical levels of depression had significantly lower mental QoL compared to individuals with non-clinical depression levels

Groups	Physical QoL *(SD)*	Mental QoL *(SD)*
Non-clinical	182.15 *(47.64)*	207.05 *(48.30)*
Sub-clinical	119.49 *(59.50)*	139.87 *(46.80)*
Clinical	123.18 *(65.51)*	155.64 *(59.24)*

Results: Gender as moderator

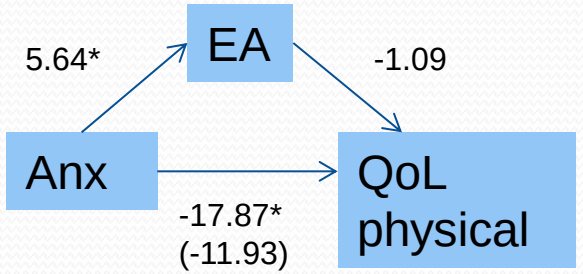
- There was no significant interaction between gender and anxiety on QoL or between gender and depression on mental QoL
  - Gender*Anxiety on Physical QoL: $F_{(2,68)}=.38$, $p>.05$
  - Gender*Anxiety on Mental QoL: $F_{(2,68)}= 2.53$, $p>.05$
  - Gender*Depression on Mental QoL: $F_{(2,68)}=1.08$, $p>.05$
- There was a significant interaction between gender and depression on physical QoL, with men with clinical depression levels having higher physical QoL compared to women with clinical depression levels
  - $F_{(2,68)}=3.90$, $p<.05$
  - There were no gender differences between the other groups on physical QoL

Results: EA as mediator

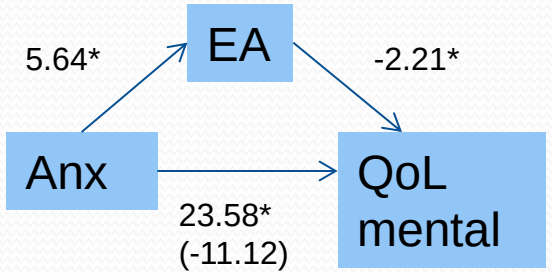
- EA was not a significant mediator of
  - Anxiety levels on physical QoL (B= -18.99, $t(72)$= -1.91, p>.05, 95% CI [-13.80, 11.34])
  - Anxiety levels on mental QoL (B= -16.30, $t(72)$= -1.81, p>.05, 95% CI [-21.05, 1.01])
  - Depression levels on physical QoL (B= -35.62, $t(72)$= -3.83, p<.05, 95% CI [-8.02, 6.19]
  - Depression levels on mental QoL (B= -27.41, $t(72)$= -3.19, p<.05, 95% CI [-15.96, -1.10])

Results: EA as mediator 2

- When using the 2 extreme groups (clinical vs non clinical) as IV, EA was found to be a significant mediator for mental QoL only.
  - Anxiety levels on physical QoL
    - $R^2 = .09$, $F_{(2, 52)} = 2.62$, $p = .08$



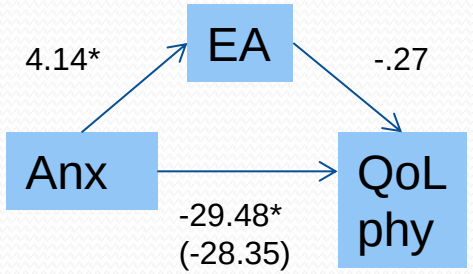
  - Anxiety levels on mental QoL
    - $R^2 = .20$, $F_{(2, 52)} = 6.57$, $p < .05$



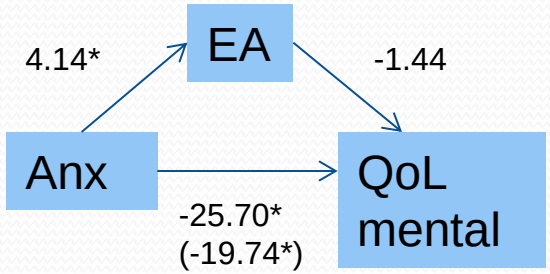
Brackets = direct effect

Results: EA as mediator 2

- EA was not found to be a significant mediator for:
  - Depression levels on physical QoL
    - $R^2 = .18$, $F_{(2, 54)} = 5.81$, $p < .05$



  - Depression levels on mental QoL
    - $R^2 = .19$, $F_{(2, 54)} = 6.46$, $p < .05$



Brackets = direct effect

Discussion

- Different levels of depression and anxiety do impact QoL (both physical and mental) of chronic pain patients.
- Gender moderates the relationship between depression levels and physical QoL only
  - Interestingly, gender does not moderate the relation between anxiety levels and QOL.
- Surprisingly, EA only acted as a mediator in the relationship between anxiety and mental QoL.
  - This finding needs to be explored further
- The study may contribute to the design of individualized health care programs which take into account both the gender and the psychological individual difference status of chronic pain patients.

Limitations

- More women compared to men
- Diverse sample regarding:
  - Chronic pain diagnosis
  - Severity
  - Year of diagnosis
- Opportunistic sample
- Self-report measurements

Future Work

- Incorporate:
  - Pain severity
  - Pain diagnosis
  - Duration of chronic pain problem
  - Other factors that may influence QoL (such as spirituality)
  - Other individual difference factors such as anxiety sensitivity
  - More objective measurements
- More representative sample (e.g. equal percentage of male/female participants)

References

- Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., Waltz, T., & Zettle, R. D. (2010). Preliminary psychometric properties of the Acceptance and Action Questionniare - II: A revised measure of psychological flexibility and experiential avoidance. *Behavior Therapy*.
- Kontodimopoulos, N., Pappa, E., Niakas, D., & Tountas, Y. (2007). Validity of SF-12 summary scores in a Greek general population. *Health and QOL Outcomes,* 55(5), 1-9.
- Lisspers J, Nygren A, Soderman E. (1997). Hospital Anxiety and Depression Scale (HAD): some psychometric data for a Swedish sample. Acta Psychiatry Scand, 96: 281 – 6.
- Michopoulos et al., (2007). The hospital anxiety and depression scale HADS: Validation in a Greek general hospital sample. Psychiatry. 18(3): 217-24.
- Monestès, J.L., Villatte, M., Mouras, H., Loas, G., & Bond, F. (2009). Translating and validating the French acceptance and action questionnaire (AAQ-II). European Review of Applied Psychology, 59, 301-308.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. Behavior Research Methods, Instruments, and Computers, 36, 717-731.
- Ware, J. E. Jr., M. Kosinski, M. S. Bayliss, C. A. McHorney, W. H. Rogers, and A. Reczek. 1995. "Comparison of Methods for the Scoring and Statistical Analysis of SF-36 Health Profile and Summary Measures: Summary of Results from the Medical Outcomes Study."Medical Care 33 (4): 264–79.
- Ware, J. E. Jr., M. Kosinski, and S. D. Keller. 1994. SF36: Physical and Mental Summary Scales: A User's Manual. Boston: The Health Institute, New England Medical Center.

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