

Measuring psychological flexibility in chronic and acute pain

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BACKGROUND

Pain is a multidimensional experience that results from the interaction of physiological, cognitive, emotional and behavioural components. These components play a key role in the occurrence, modulation and maintenance of pain. According to the ACT model, the desperate attempt by the subject to reduce or eliminate pain in his life is the main characteristic of the experience of chronic pain. The patient engages a battle against pain by implementing strategies that are inefficient or fail. Changes in patient's lifestyle, due to the attempts to control pain, can give temporary relief, but in the long term drain his life and lead to a worsening of the general physical and psychological conditions.

Psychological flexibility is defined as the ability to act effectively in the light of personal values, even in the presence of thoughts, emotions and body sensations interfering with one's life. Several studies have related it to the bettering in functioning and quality of life of patients with chronic pain (McCracken and Gutiérrez-Martínez, 2011; Gillanders, et al., 2012; McCracken et al., 2012; Yu and McCracken, 2016). Our study looked at a number of variables that come into play in chronic pain with the aim to investigate the relationship existing between pain, psychological flexibility, psychological distress and quality of life.

METHOD

Participants

A group of hospitalized patients with acute or chronic pain and a control group of students were recruited for the study. The group with chronic pain included individuals who have suffered pain episodes for a period of at least six months. The chronic pain group was composed of 100 subjects (Male=29; Female= 70 ; M Age= 58,65; 37 % is housewife/household). The acute pain group was composed of 75 subjects (Male= 28; Female= 45; M Age= 46,15 ; 36 % is employee). The control group was composed by 123 healthy subjects (Male= 23; Female= 88; M Age= 28,18 ; 78 % is student).

Measures

- *McGill Pain Questionnaire– MPQ* (Melzack, 1983; Italian validation Maiani and Sanavio, 1985).
- *Visual Analogue Scale–VAS* (McCormack, Horne e Sheather, 1988) to measure intensity of pain in the present moment (VAS1), in last 24 hours (VAS2) and the last week (VAS3).
- *Chronic Pain Acceptance Questionnaire –CPAQ* (McCracken, Vowles and Eccleston, 2004; Italian validation Bernini, Pennato, Cosci and Berrocal, 2010); it is a 20-item measure of acceptance of chronic pain, with two subscales derived from its factor analysis: activities engagement and pain willingness.
- *Acceptance and Action Questionnaire-2 –AAQ-2* (Bond et al., 2011; Italian validation Pennato, Berrocal, Bernini and Rivas, 2013).
- *Hospital Anxiety and Depression Scale- HADS* (Zigmond and Snaith, 1983; Italian validation Costantini et al., 1999)
- *Survey on the state of health sf-36* (McHorney, Ware and Raczek, 1993; Italian validation Apolone and Mosconi, 1998). the questionnaire consists of 36 items that relate conceptually to 8 domains of health: physical activity (PhA); role limitations due to physical health (PH); role limitations due to emotional problems (EP); body pain (BP) ; perception of general health (GH); vitality (V); social activities (SA); mental health (MH).

PRELIMINARY RESULTS

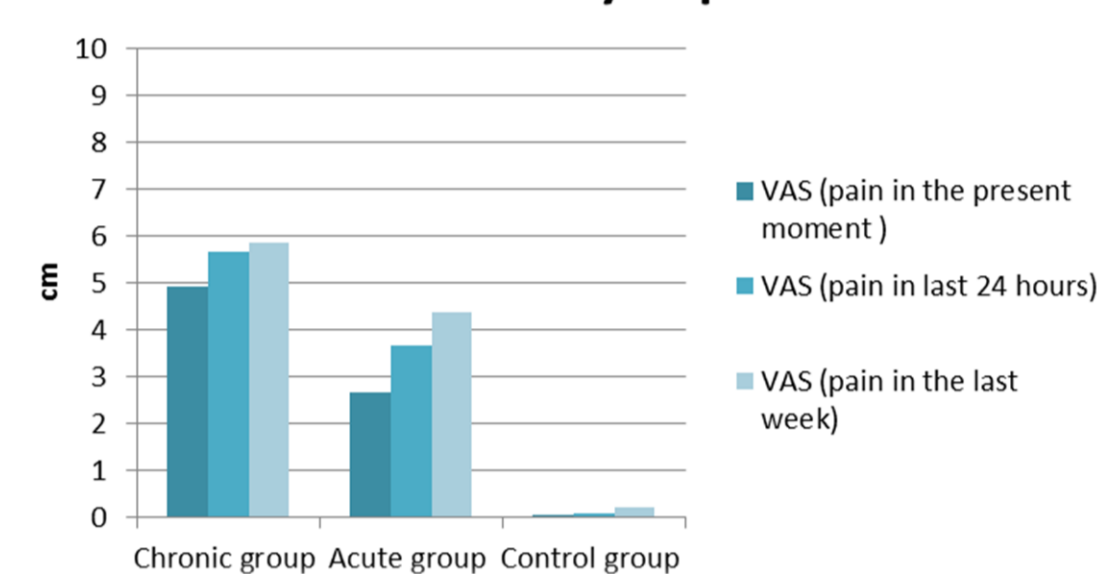
Table 1 shows the means and standard deviations for scales of pain (MPQ and VAS), depression and anxiety (HADS) and psychological flexibility (CPAQ-R ; AAQ-II). Total HADS score is 21,30 (±3,45) for the chronic pain group, 21,16 (±3,04) for acute pain group and 22,44 (±2,83) for control group. No statistical differences were observed at HADS among the three groups. Differences were observed in “intensity of pain” as well as VAS scores (pain in the present moment, pain in the last 24 hours and pain in the last week).

Graph 1 show the differences in levels of pain intensity. MPQ score is different among the two groups of subject with pain. Furthermore results show a differences among the three groups in the AAQ total score. As shown in Table 1 and in **Graph 2**, the control group show higher levels of Psychological Flexibility than the other 2 groups. The three groups differed also in the CPAQ subscale scores. In particular the chronic pain group showed higher levels of “Activities Engagement” than the control group and the acute pain group and lower levels of Pain Willingness, than the others two groups. **Graph 3** shows the different levels of CPAQ subscale scores among the two group with pain.

TABLE 1 : Descriptive Analysis (VAS; MPQ;HADS; CPAQ; AAQ)

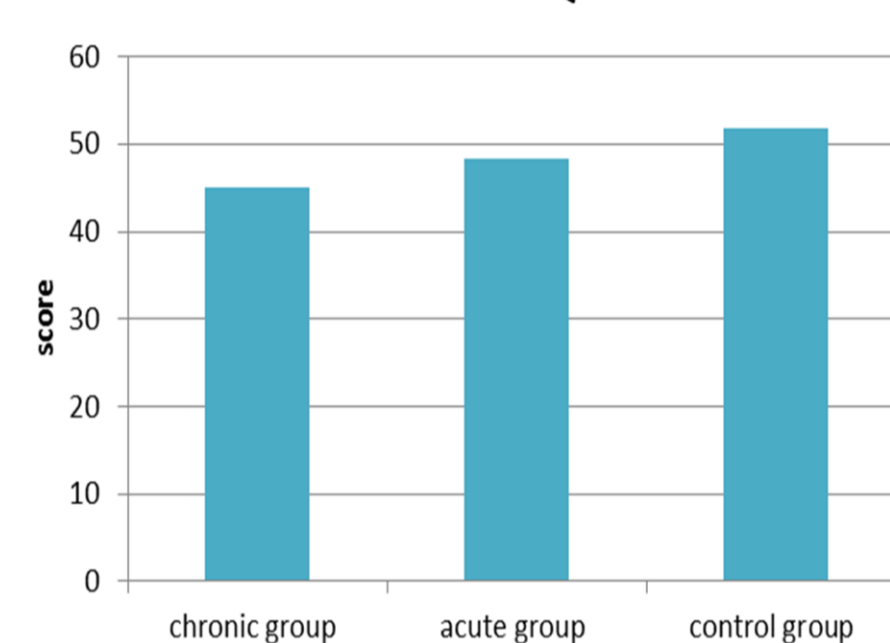
| | CHRONIC PAIN GROUP | ACUTE PAIN GROUP | CONTROL GROUP |
|-----------------------------------|--------------------|------------------|-----------------|
| VAS (PRESENT MOMENT) | 4,92 (± 2,97) | 2,67 (± 2,83) | 0,05 (± 0,33) |
| VAS (LAST 24 HOURS) | 5,67 (± 3,18) | 3,67 (± 3,36) | 0,08 (± 0,30) |
| VAS (LAST WEEK) | 5,85 (± 3,03) | 4,37 (± 3,54) | 0,21 (± 0,82) |
| MPQ - TOTAL | 31,29 (± 16,53) | 28,61 (± 18,66) | --- |
| HADS - ANXIETY | 10,62 (± 2,33) | 10,42 (± 2,24) | 11,03 (± 1,96) |
| HADS - DEPRESSION | 10,68 (± 2,32) | 10,75 (± 2,47) | 11,42 (± 1,98) |
| HADS - TOTAL | 21,30 (± 3,45) | 21,16 (± 3,04) | 22,44 (± 2,83) |
| AAQ | 45,01 (±14,09) | 48,41 (± 10,46) | 51,80 (± 9,05) |
| CPAQ – AE (Activities Engagement) | 40,96 (± 16,83) | 31,93 (± 14,80) | 19,32(±14,86) |
| CPAQ – PW (Pain Willingness) | 23,80 (± 11,17) | 25,24 (± 11,93) | 25,10 (± 14,64) |
| CPAQ - Total | 64,20 (± 21,70) | 56,33 (± 19,04) | 36,51 (± 28,08) |

VAS intensity of pain

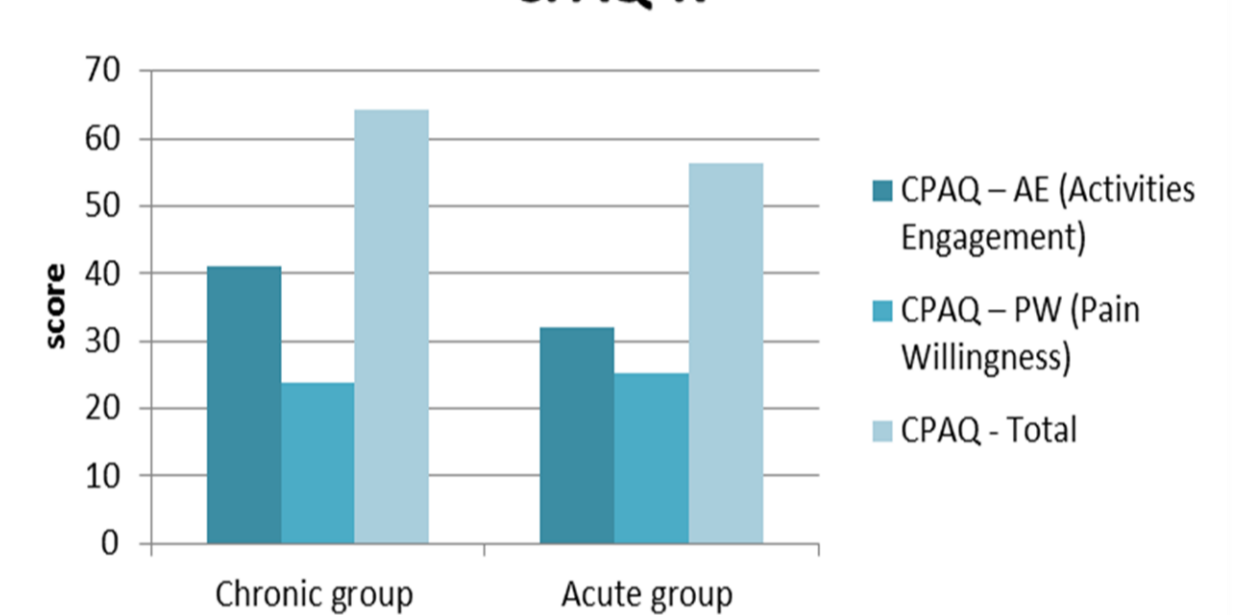


GRAPH 1 : VAS Intensity of pain
GRAPH 2 : AAQ score
GRAPH 3 : CPAQ-R score

AAQ



CPAQ-R



Correlational Analysis

Using “bivariate Pearson’s correlation analyses” we investigated the relationship between psychological flexibility and quality of life. **Table 2** shows correlations among AAQ and CPAQ scores and sf-36 subscale scores, in all three groups. In all three groups we found a significant correlation between psychological flexibility (assessed with AAQ) and variables such as: role limitations due to physical (PH) and emotional (EP) health, perception of general health (GH), vitality (V), social activities (SA), mental health (MH), (assessed through sf-36).

TABLE 2 : Correlational Analysis among AAQ, CPAQ and SF-36

| | CHRONIC PAIN GROUP | | ACUTE PAIN GROUP | | CONTROL GROUP | |
|----------|--------------------|------------------|------------------|--------|------------------|--------|
| | AAQ-2 | CPAQ-R | AAQ-2 | CPAQ-R | AAQ-2 | CPAQ-R |
| SF36-EP | ,349 P < ,002 | NS | NS | NS | NS | NS |
| SF36-PhA | ,276 P = ,015 | ,434 P < ,000 | NS | NS | ,246 P < ,008 | NS |
| SF36-PH | ,319 P < ,004 | NS | ,322 P < ,009 | NS | ,251 P < ,007 | NS |
| SF36-V | ,376 P < ,001 | NS | ,552 P < ,000 | NS | ,319 P < ,000 | NS |
| SF36-MH | ,628 P < ,000 | NS | ,659 P < ,000 | NS | ,477 P < ,000 | NS |
| SF36-SA | ,461 P < ,000 | ,300 P < ,007 | ,312 P = ,011 | NS | ,403 P < ,000 | NS |
| SF36-BP | ,304 P < ,007 | ,308 P < ,006 | ,325 P < ,008 | NS | NS | NS |
| SF36-GH | ,412 P < ,000 | ,279 P = ,013 | ,433 P < ,000 | NS | ,420 P < ,000 | NS |

DISCUSSION

Preliminary data show some differences among the three groups , in terms of “perception of pain” and in terms of psychological flexibility.

In all three groups the score of the HADS subscales falls within the range of medium - moderate psychological stress.

Consistent with published data we found a significant correlation between the variable “Psychological Flexibility” (assessed through AAQ-2 and CPAQ-R) and the health-related variables (assessed through the survey on the state of health sf-36).

REFERENCES

- Gillanders D.T., Ferreira N.B., Bose S., Esrich T. (2012). The relationship between acceptance, catastrophizing and illness representations in chronic pain. *European Journal of Pain*
- McCracken L.M., Gutiérrez-Martínez O.(2011). Processes of change in psychological flexibility in an interdisciplinary group-based treatment for chronic pain based on acceptance and commitment therapy. *Behaviour Research and Therapy*. 49 (4), 267-274
- McCracken L. M., Gutiérrez-Martínez O., & Smyth C. (2012). “Decentering” Reflects Psychological Flexibility in People With Chronic Pain and Correlates With Their Quality of Functioning. *Health Psychology*. Advance online publication. doi: 10.1037/a0028093
- Yu L., McCracken L.M. (2016). Model and Processes of Acceptance and Commitment Therapy (ACT) for Chronic Pain Including a Closer Look at the Self. *Curr Pain Headache Rep*. 20: 12

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