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Université du Québec
à Trois-Rivières



ACT Psychological Flexibility Processes Involved in a Mixed Self-Help/Online Treatment for Chronic Pain

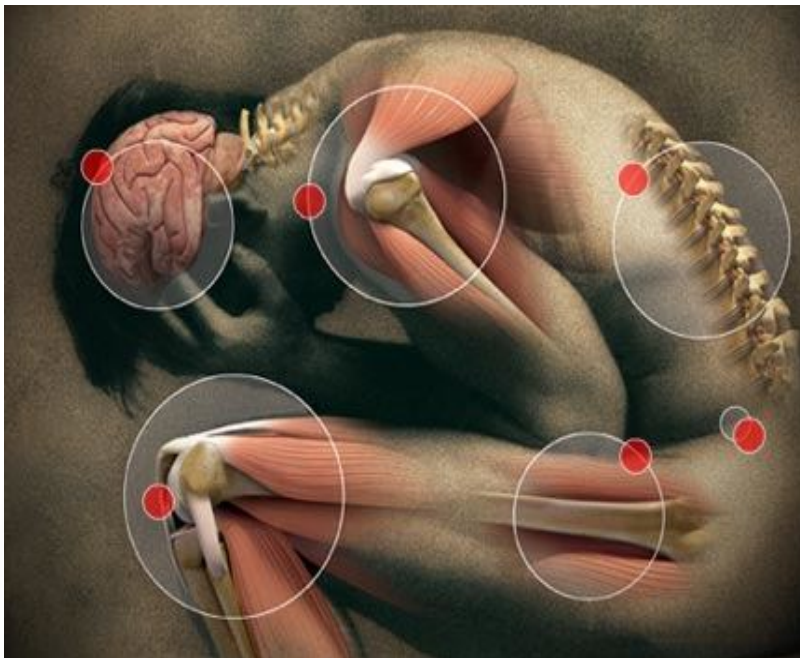


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KING'S
College
LONDON

Introduction

Chronic Pain in Canada



- » **One in five people**
- » **Increases risk of developing**
 - Mood disorder
 - Anxiety disorder
 - Drug or alcohol abuse
- » **Risk of **suicide** is twice as high**

Introduction

Chronic Pain in Canada

- » Beyond treatment efficacy, **accessibility** to interventions is a **major challenge**
 - Annual cost : close to 60 billion dollars
 - Increase use of health care
 - Work absenteeism
 - Lack of **qualified professionals**
 - **Wait lists**
 - **Costs associated to interventions** (i.e. distance from major city centers)
 - **Etc.**



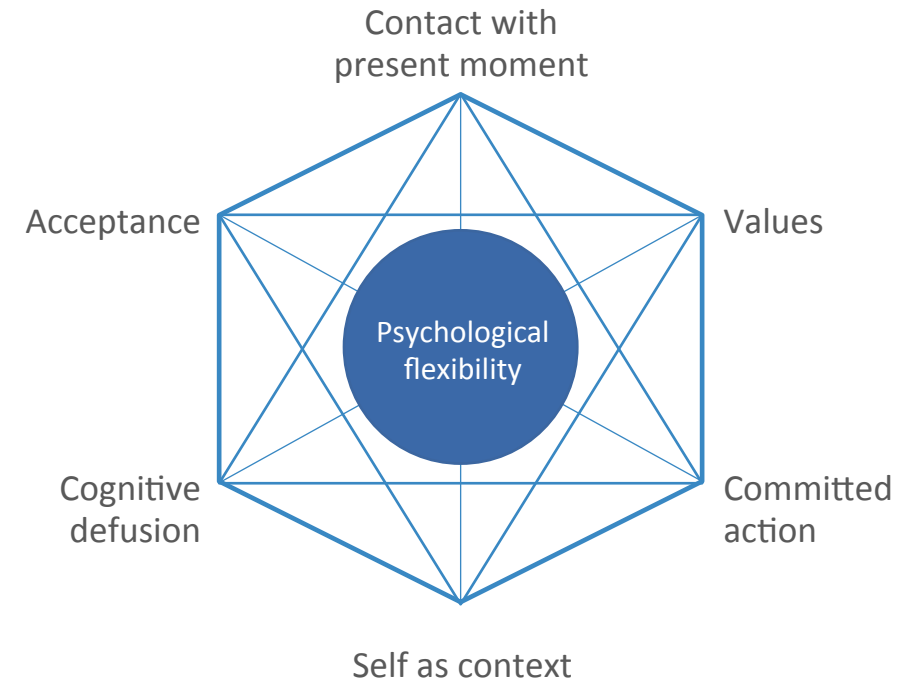
Introduction

Self-help or online interventions are promising

- » Can reduce the **physical and psychological burden** and reduce use of health care resources
- » **Self-help** formats of **mindfulness** and **acceptance based therapies** can be **as efficient** as face to face interventions for chronic pain management
- » Further studies are required

Introduction

“ Pain is inevitable,
suffering is optional ”



» Objective of Acceptance and Commitment Therapy



Introduction

Self-help “ ACT ” intervention

- » Standardized psychosocial intervention
- » Accessibility
- » The person at the heart of the treatment

↗ Psychological flexibility

- » Psychoeducation
- » Experiential exercises
- » Mindfulness meditation
- » Application according to personal values

Introduction

Efficacy of a self-help ACT intervention

» Formats

- **Bibliotherapy**
(Fledderus & al., 2012; Thorsell & al., 2011; Johnston & al., 2010)
- **Online forums**
(Tillfors & al., 2008)
- **Cell phone Applications**
(Kristjánsdóttir & al., 2013; Lappalainen & al., 2013)
- **Internet programs**
(Buhrman & al., 2013; Carlbring & al., 2013; Pots & al., 2016; Levin & al., 2016, 2014; Lappalainen & al., 2015, 2014; Trompetter & al., 2014)
- **Combination of formats**
(Cavanagh & al., 2014)

» Type of support

- **Face to face**
(Carnes & al., 2012)
- **By telephone**
(McBeth et al., 2012)

» Level of contact

(Farrand & Woodford, 2013)

- **Minimal contact**
- **With regular contact**
- **Guided by a therapist**

Objectives

- » 1) Evaluate the impact of a brief 8 week ACT self-help/online intervention in a sample of adults with chronic pain

- » 2) Examine processes by which the treatment works
 - What changes in psychological flexibility will lead to improvements in outcomes?
 - We also included measures of traditional CBT variables (i.e. self-efficacy) and the Injustice Experience Questionnaire

Method

Recruitment of participants

- » The Quebec Association for Chronic Pain (*“L’Association québécoise de douleur chronique”*)
 - Notice to members was sent by email, information was posted on their website
- » Self-report questionnaires completed online allowing to assess eligibility criteria of candidates

Method

Eligibility criteria

- » **18 years or older**
- » Having pain **every day** for **at least 3 months**
- » Having **reading** and **writing** abilities equivalent of **grade 8**
- » Having **internet access** at home as well as an **e-mail address**
- » **Never** having taken part in an **ACT therapy** and/or **practiced mindfulness meditation** and/or **having read the book Libérez-vous de la douleur par la méditation et l'ACT**
- » Having **stable medication** since at least one month

Method

» Material



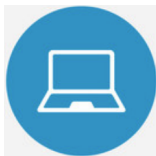
The book *Libérez-vous de la douleur par la méditation et l'ACT* (Dionne, 2015).



A weekly email explaining the tasks to be completed.



Access to graduate students in psychology via e-mail at all times.



Web platforms allowing the download of audio and written exercises, viewing of short videos and completion of assessment questionnaires.



Two phone calls of approximately 30 min. before the first week of intervention and at week 5.

Frédéric Dionne
**Libérez-vous
de la douleur**

par la
méditation
et l'ACT



* Pour accéder aux exercices audio, aux capsules vidéo ainsi qu'aux autres outils proposés chaque semaine, vous n'avez qu'à cliquer sur les liens soulignés dans les courriels ou sur ceux situés en bas de page. Une fois rendu sur le site, vous pouvez également télécharger les méditations guidées directement sur votre ordinateur en cliquant sur le bouton de droite de votre souris et sélectionnant Enregistrer la cible sous... Si votre navigateur ne permet pas de lire les fichiers audio (MP3), téléchargez le logiciel QuickTime.



À visionner
cette semaine...
**Posez un regard nouveau
sur les choses**



À écouter
cette semaine...
**Introduction à la
méditation ***



Exercice de méditation
de la semaine...
**Cinq minutes de
concentration sur la
respiration ***

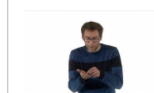
Method

» Intervention Protocol

Week 1	Psychoeducation on chronic pain, introduction to ACT Introduction, chapters 1, 2 and 3
Week 2	Pain control (struggle), mindfulness Chapters 4 and 5
Week 3	Acceptance, committed action Chapters 6 and 7
Week 4	Acceptance (open arms) Chapter 8
Week 5	Break, Phone call
Week 6	Cognitive defusion, self as context Chapters 9 and 10
Week 7	Values Chapter 11
Week 8	Pacing, mindfulness, emotions Chapters 12 and 13
Week 9	Medication, insomnia Chapters 14 and 15



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Method

Design

- » Randomized with control group
- » Time measures pre and post- intervention and 3 month follow-up
- » Includes 2 groups (n = 130 participants)
- » Randomly assigned
 - Group 1 (n = 64) → Self-help ACT Intervention
 - Group 2 (n = 66) → Control (wait list)

Method

Variables and measures



» Pain related disability

- **Brief Pain Inventory (BPI)**

(Tyler et al., 2002; Poundja et al., 2007)

- Assesses functional disability on different domains of daily life
- 11 items

» Anxiety symptoms

- **Generalized Anxiety Disorder (GAD-7)**

(Spitzer et al., 2006; Micoulaud-Franchi et al., 2016)

- Measures anxiety symptoms in past 14 days
- 7 items

Method

Variables and measures



» Pain Acceptance

- **Chronic Pain Acceptance Questionnaire (CPAQ-8)**

(Fish et al., 2010; Scott, Bernier, Garland, & Sullivan, 2013)

- Evaluates acceptance of pain according to two subscales : activity engagement and pain willingness
- 8 items (short version)

» Cognitive fusion

- **Cognitive Fusion Questionnaire (CFQ)**

(Gillanders & al., 2014; Dionne et al., 2017)

- Measures the degree to which thought content dominates experience
- 7 items (short version)

Method

Variables and measures



» Perceived Injustice

- **Injustice Experience Questionnaire (IEQ)**

(Sullivan et al., 2008; Sullivan, 2015)

- Measures the degree to which individuals perceive their painful condition as unjust
- Two subscales: severity/irreparability of loss and blame/unfairness
- 12 items

» Pain self-efficacy

- **French-Canadian Chronic Pain Self-Efficacy Scale (FC-CPSES)**

(Lacasse et al., 2015; Lorig et al., 1996; Lorig et al., 2001)

- Measures confidence in the ability to complete daily activities despite pain
- 6 items

Method

Statistical analyses

- » A two-factor model of analysis of variance with repeated measures was used in order to compare evolution of each group in time for each of the measures.
- » Bootstrapped multiple mediation analyses were conducted to test direct and indirect effects between baseline and end of treatment scores.

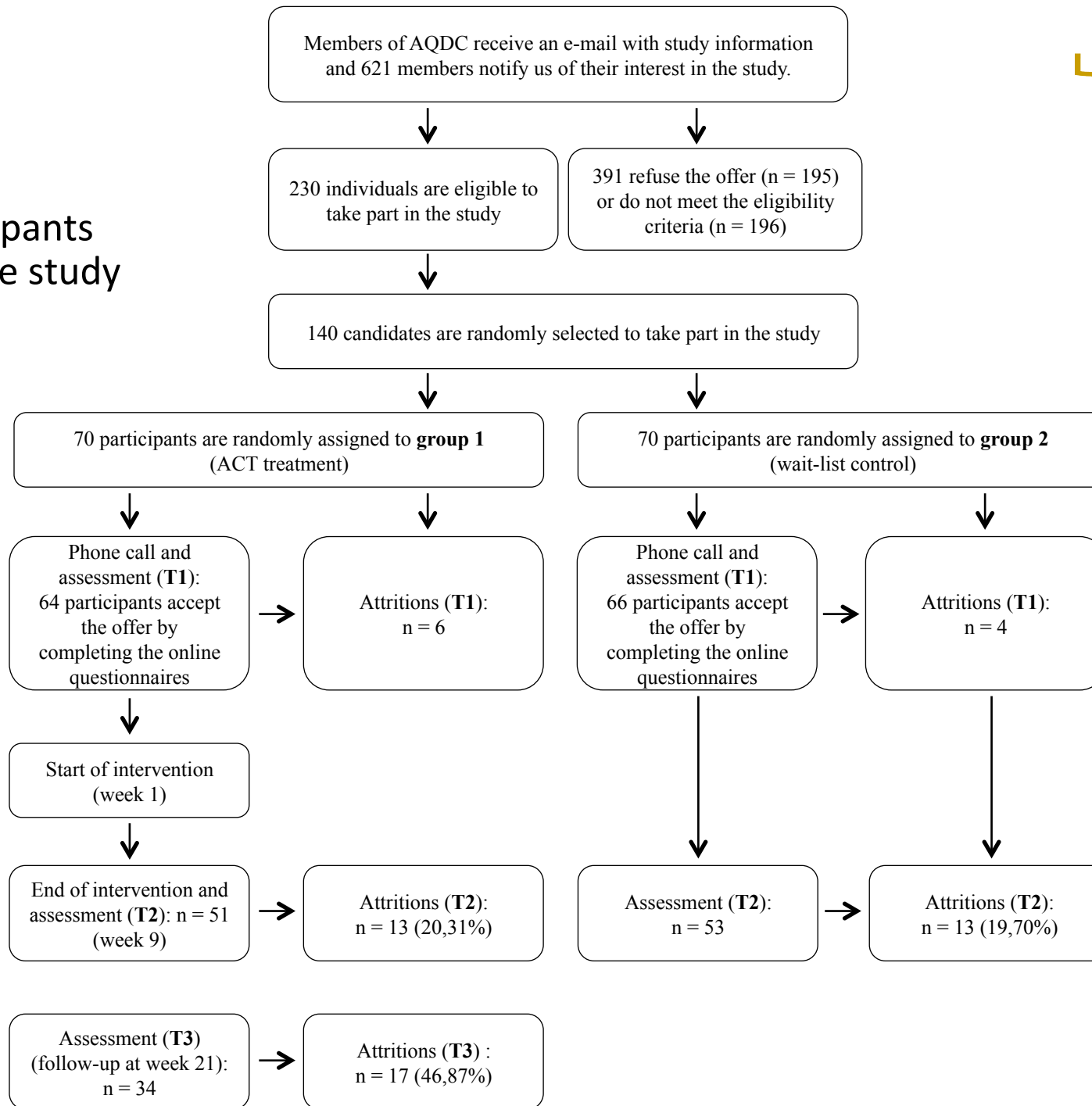
Sociodemographic variables

Participant Information	ACT Group (n = 64)	Control Group (n = 66)
	M	M
Age	51.91	50.21
Sex	n (%)	n (%)
Female	54 (84.4)	52 (78.8)
Male	10 (15.6)	14 (21.2)
Occupational status		
Full time work	14 (21.9)	18 (27.3)
Part time work (≤ 20 h/week.)	11 (17.2)	6 (9.1)
Does not work	30 (46.9)	26 (39.4)
Disabled	8 (12.5)	16 (24.2)
Number of years living with chronic pain		
Less than a year	3 (4.7)	-
Between 1 and 3 years	5 (7.8)	8 (12.1)
Between 3 and 5 years	11 (17.2)	9 (13.6)
Between 5 and 10 years	16 (25.0)	24 (36.4)
More than 10 years	28 (43.8)	25 (37.9)

Participant Information	ACT Group (n = 64)	Control Group (n = 66)
Chronic pain diagnosis	n (%)	n (%)
Headaches (cephalgia, migraines)	3 (4.7)	4 (6.1)
Fibromyalgia	25 (39.1)	25 (37.9)
Dorsal pain	12 (18.8)	14 (21.2)
Cervical pain	3 (4.7)	3 (4.5)
Neuropathic pain	10 (15.6)	12 (18.2)
Arthritis	2 (3.1)	-
Pain related to an illness (i.e., diabetes, cancer)	2 (3.1)	2 (3.0)
Other	5 (7.8)	5 (7.6)
Multiple pain diagnoses	31 (48.4)	30 (45.5)
Use of analgesic medication		
Yes	57 (89.1)	55 (83.3)

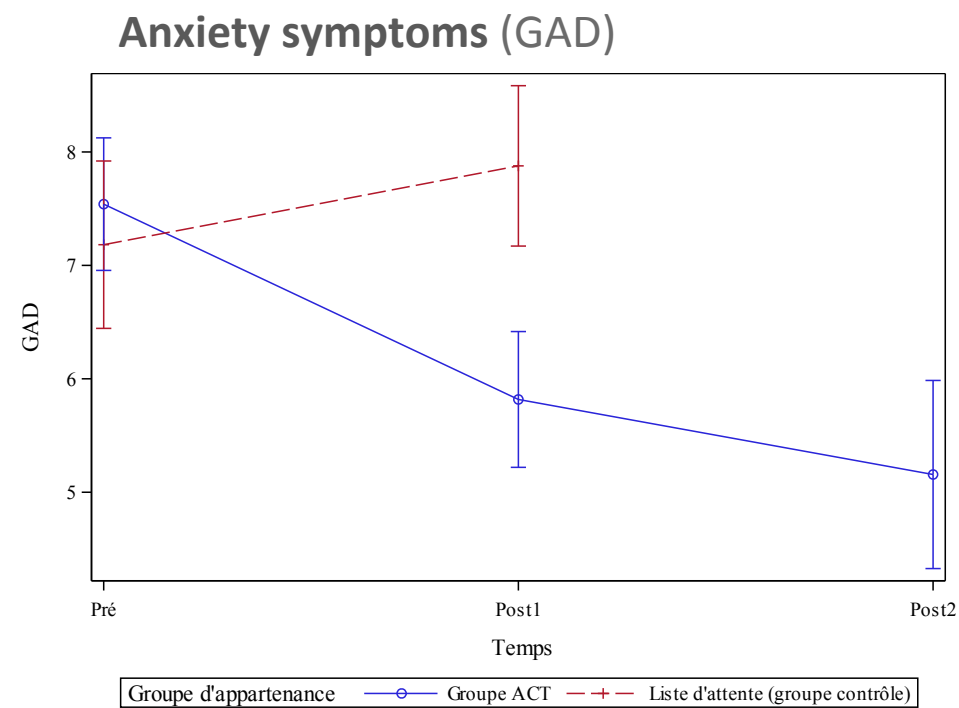
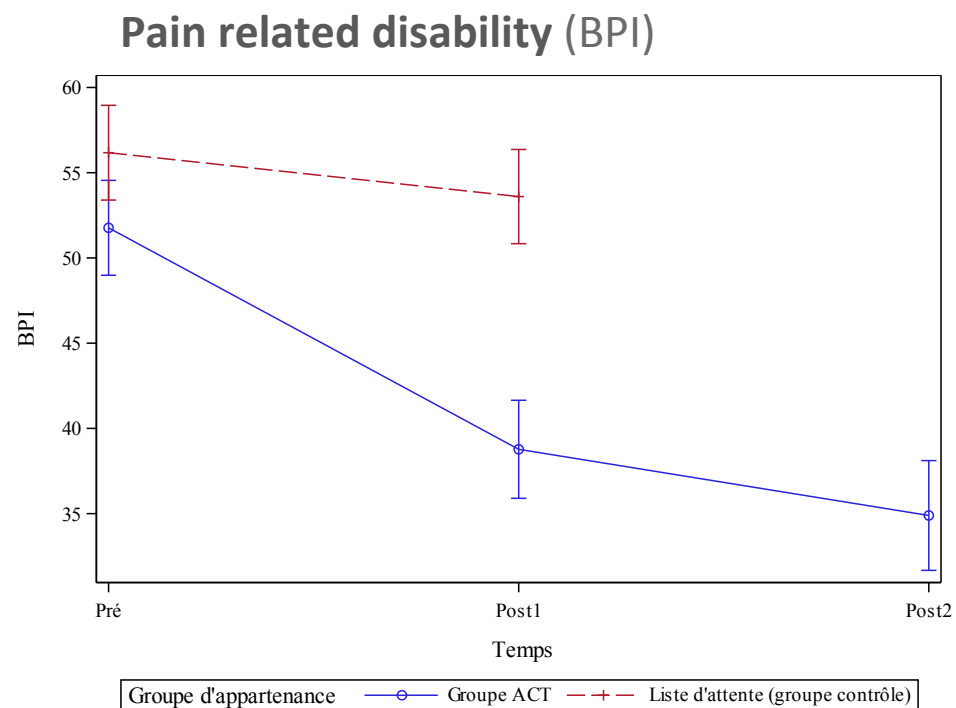
Results

» Flow of participants throughout the study



Results

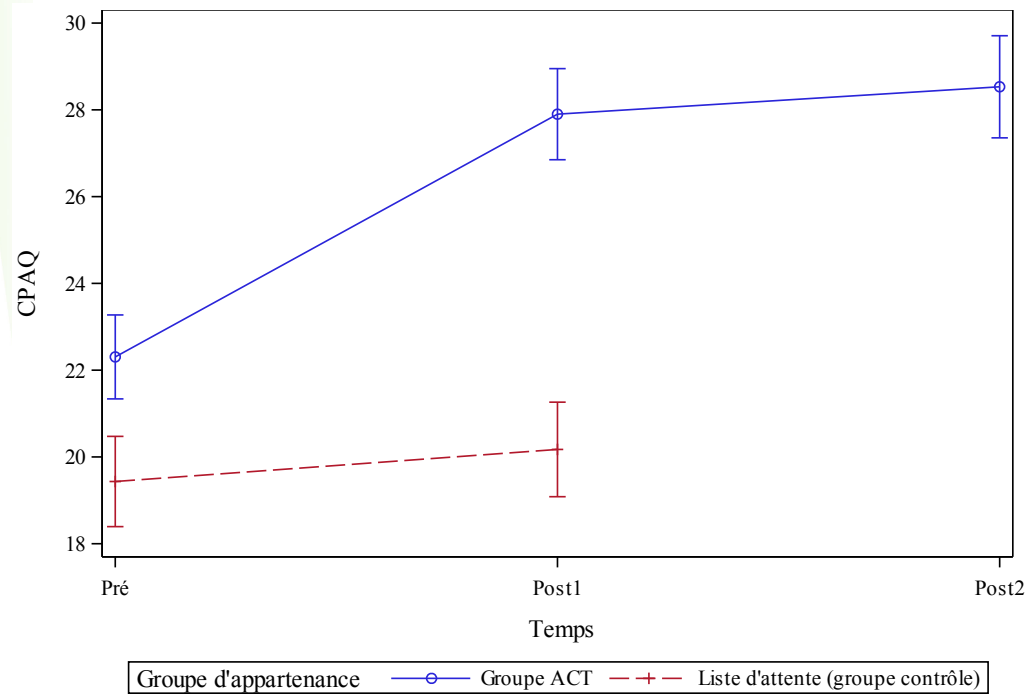
» Primary and secondary variables



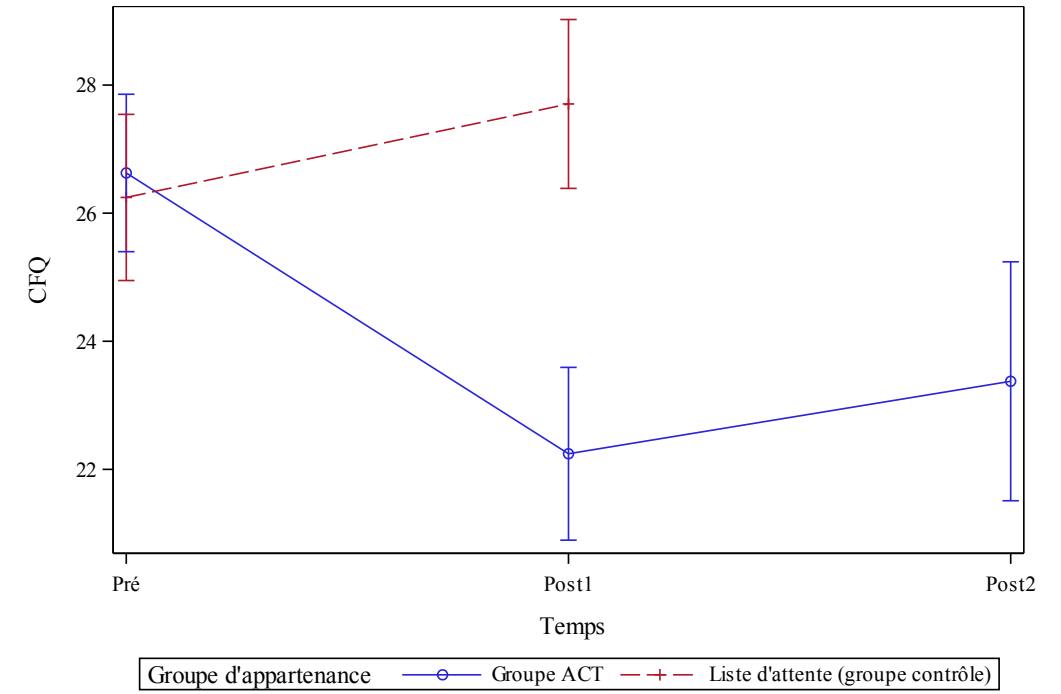
Results

» Variables related to ACT processes

Chronic Pain Acceptance (CPAQ-8)

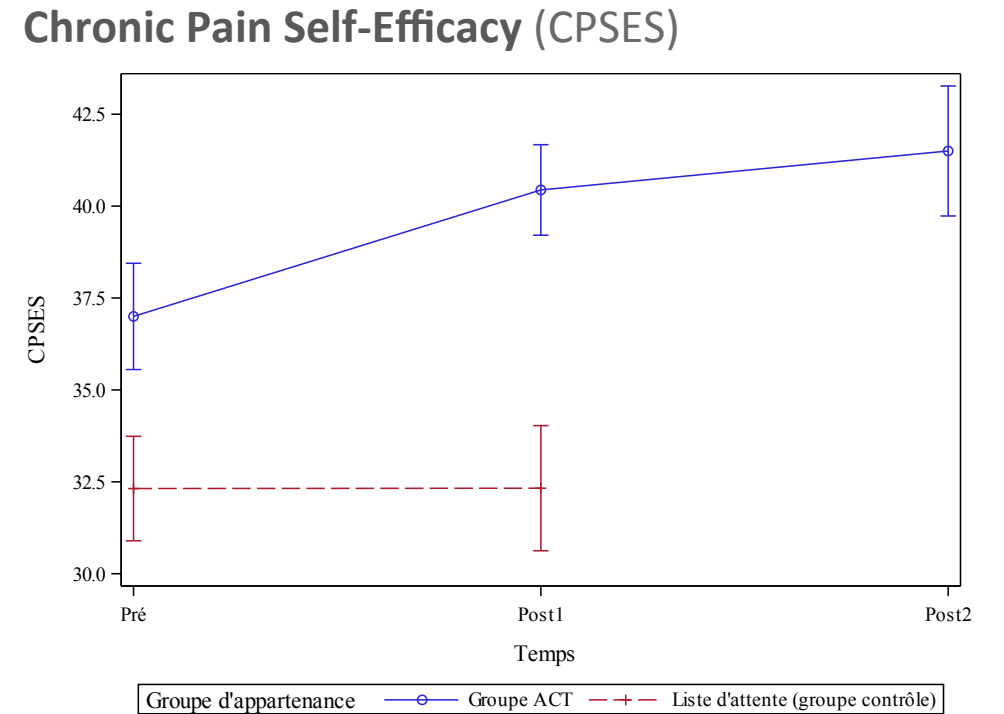
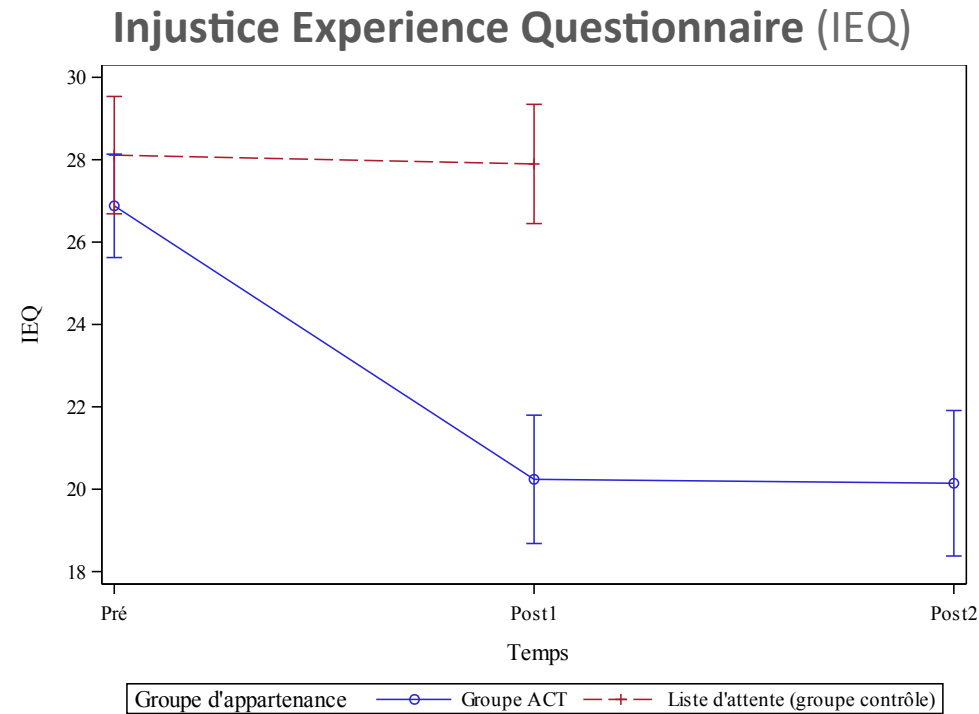


Cognitive Fusion (CFQ)



Results

» Variables related to CBT processes



Results

» Correlations between variables

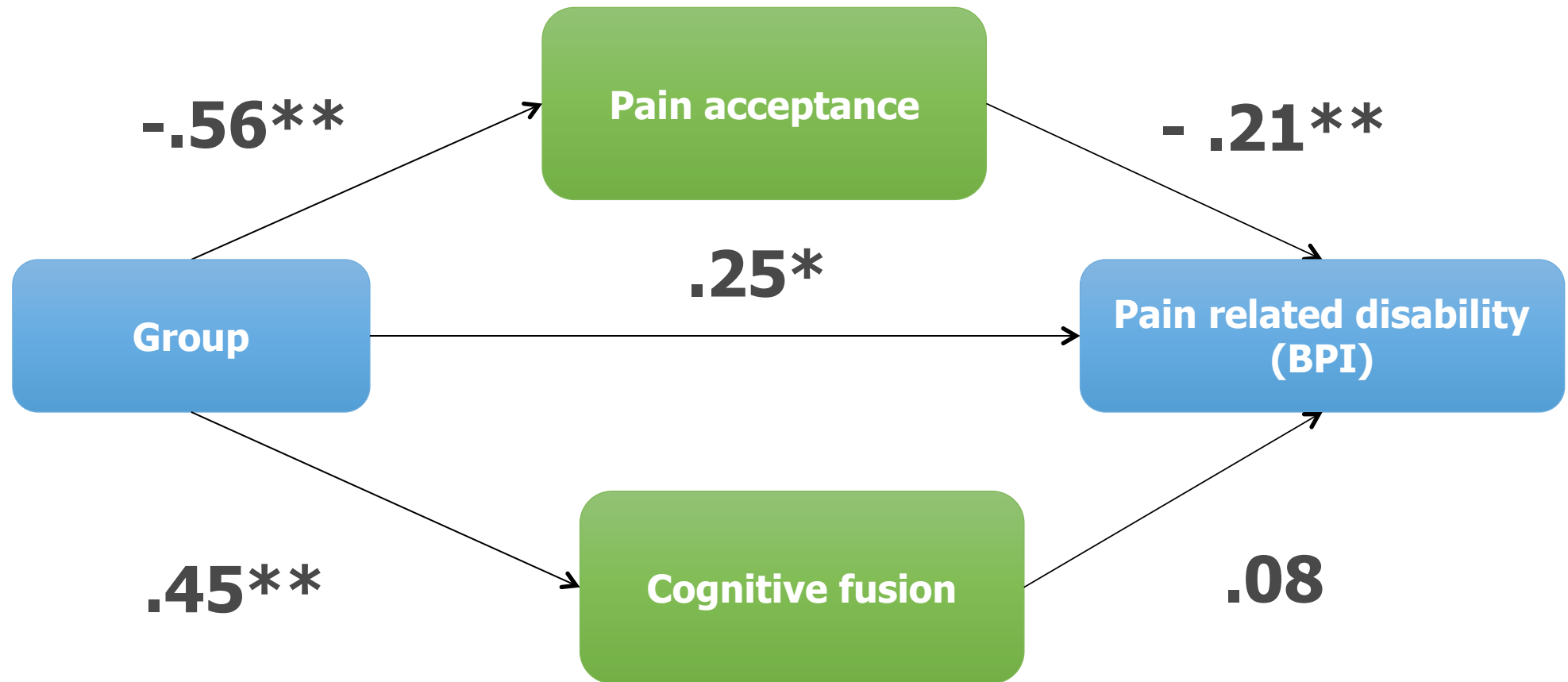
	1	2	3	4	5	6
1. Disability	–	.39**	-.32**	.22*	.39**	-.24**
2. Anxiety		–	-.30**	.39**	.49**	-.22*
3. Pain Acceptance			–	-.39**	-.36**	.34**
4. Cognitive Fusion				–	.29**	-.18*
5. Perceived Injustice					–	-.06
6. Pain Self-Efficacy						–

** $p < .01$

* $p < .05$

Results

» Mediation analyses: ACT Variables

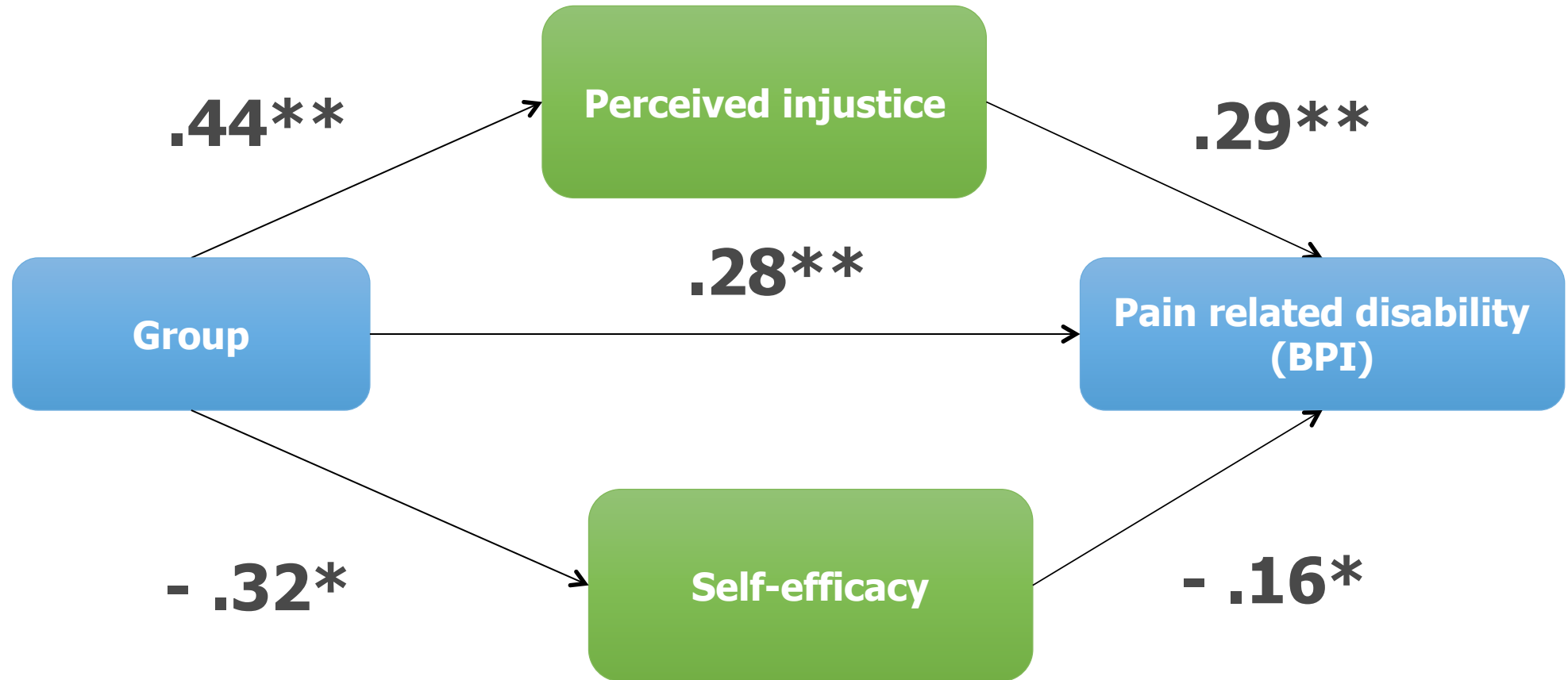


* $p < .05$
** $p < .01$

$R^2 = .15$

Results

» Mediation analyses: CBT Variables

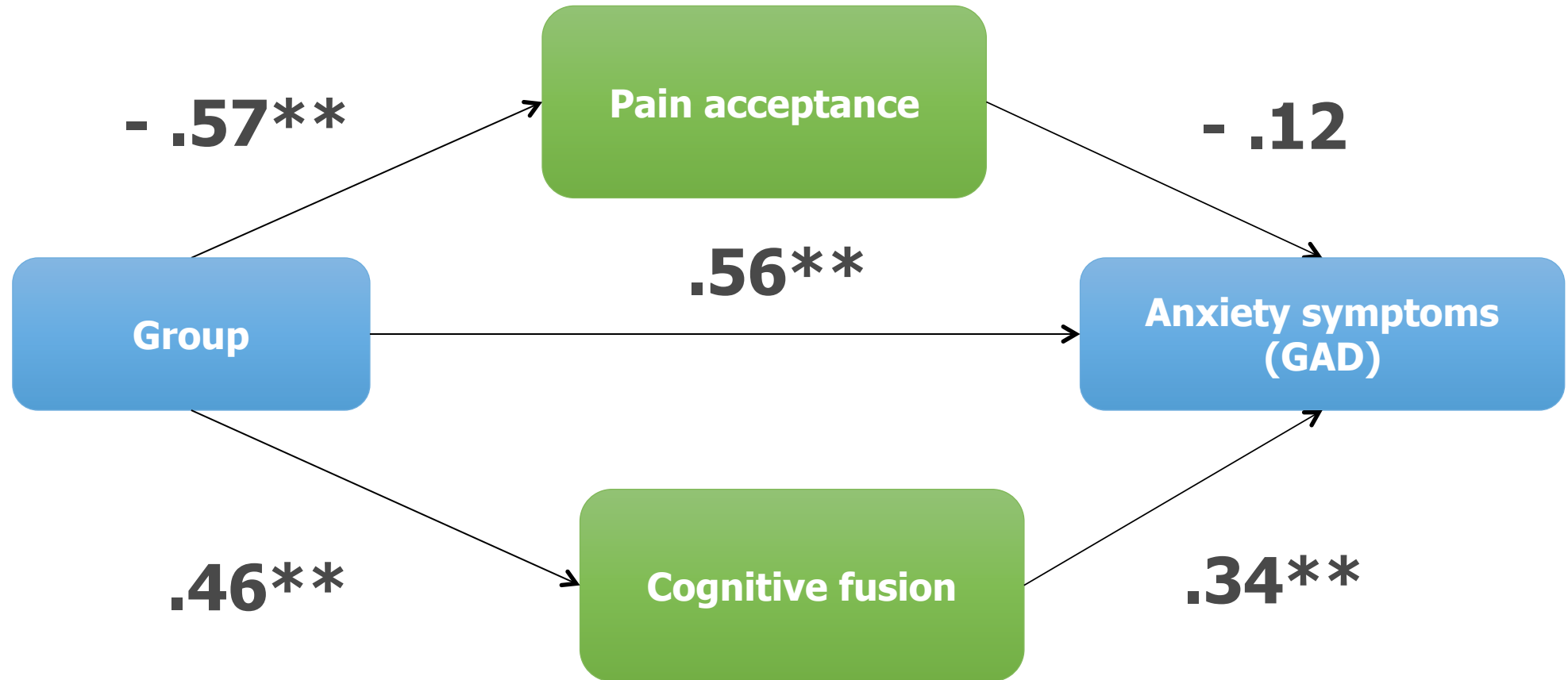


* $p < .05$
** $p < .01$

$R^2 = .20$

Results

» Mediation analyses: ACT Variables

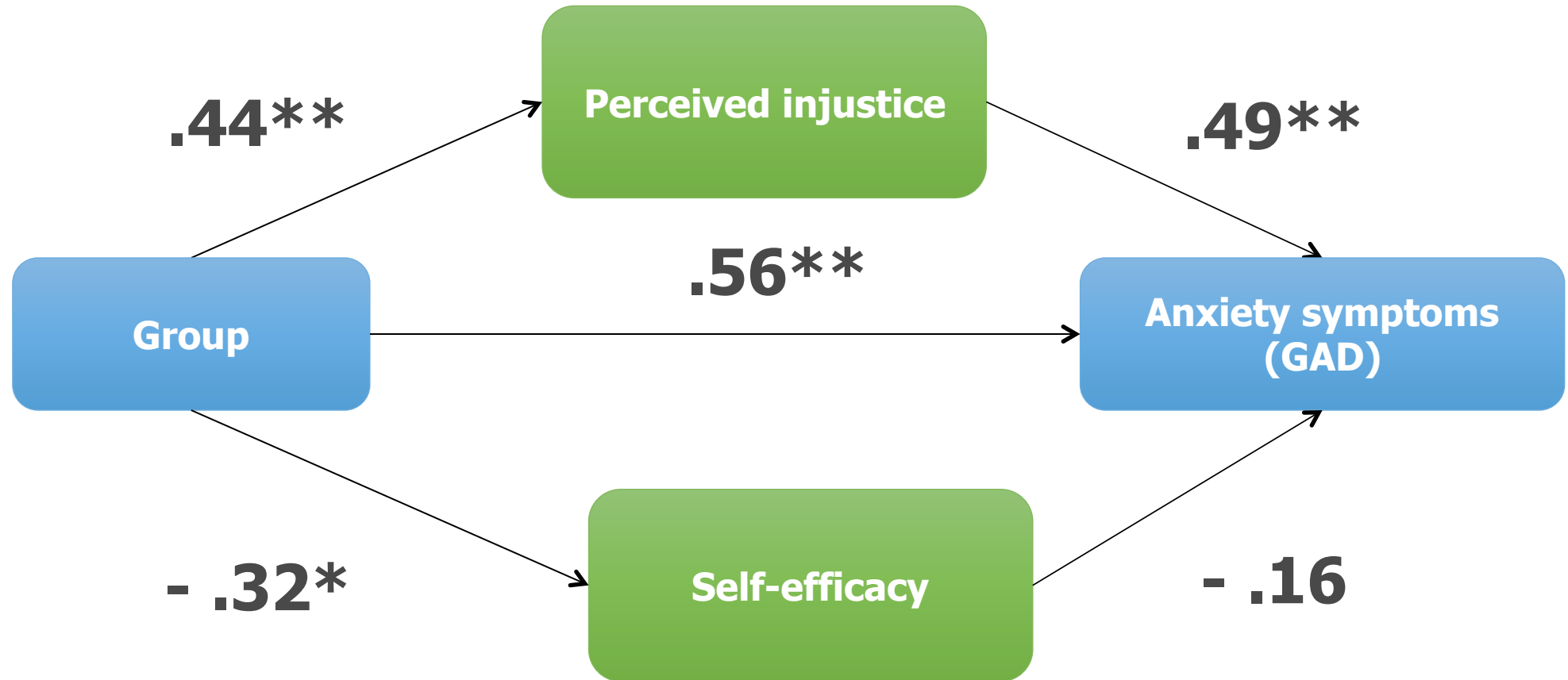


* $p < .05$
** $p < .01$

$R^2 = .22$

Results

» Mediation analyses: CBT Variables



* $p < .05$
** $p < .01$

$R^2 = .29$

Conclusion

- Significant reduction in **pain related disability** and **anxiety symptoms** (medium effect sizes).
- Improvement on **ACT psychological flexibility processes** (medium to strong effect sizes) and **CBT variables** (medium effect sizes).
- Bibliotherapy → **Efficient, cost-effective** and **accessible** alternative

Conclusion

Although our mediation analyses were *exploratory*:

- **Pain acceptance** and **perceived injustice** appeared to be **significant treatment mediators for pain disability**
- **Cognitive fusion** and **perceived injustice** appeared to be **significant treatment mediators for anxiety symptoms**

Conclusion

» Strengths

- Pilot study so **exploratory analyses**
- Adds to literature on **self-help/online interventions** and **processes involved in treatment**
- **Effects of IEQ** haven't yet been examined in ACT or online treatment

» Limitations

- **Missing data** (3 month follow-up)
- **Issues with model fit** (overlap between variables)
- Because of **limited sample size**, we could not **test CBT and ACT processes together in one SEM model** (high correlations)
- **Study design** can be improved

Conclusion

Future directions...

- » Optimizing treatment for new study in Fall 2017 (larger sample)
- » Adding new measures (i.e. other processes, 3 diary items)
- » Improving content and quality of interventions
- » Potential changes to study design



Questions?

Thank you for your attention

