

**Pain-related experiences, beliefs, expectations and their possible importance in assessment and management of Whiplash Associated Disorders, WAD**

Anne Söderlund, Professor in physiotherapy

Physiotherapy, School of Health, Care and Social Welfare, Mälardalen University, Västerås, Sweden.

[Anne.soderlund@mdh.se](mailto:Anne.soderlund@mdh.se)



**Pain perception is predicted by cognitive and behavioral factors**

- Thompson, et al (2010) found self-efficacy to be the strongest predictor of disability in patients with chronic WAD.
- Catastrophizing was a significant predictor of disability but weaker in comparison to functional self-efficacy (Thompson et al 2010).
- Growing evidence that low self-efficacy (Söderlund et al 2017), stronger fear avoidance beliefs (Buitenhuis et al 2011), unhelpful illness beliefs (Buitenhuis et al 2003), catastrophic thinking (Sullivan et al 2011) and low expectations of outcome (Caroll et al 2011) contribute to chronic disability following an acute whiplash injury.

PHYSIOTHERAPY THEORY AND PRACTICE  
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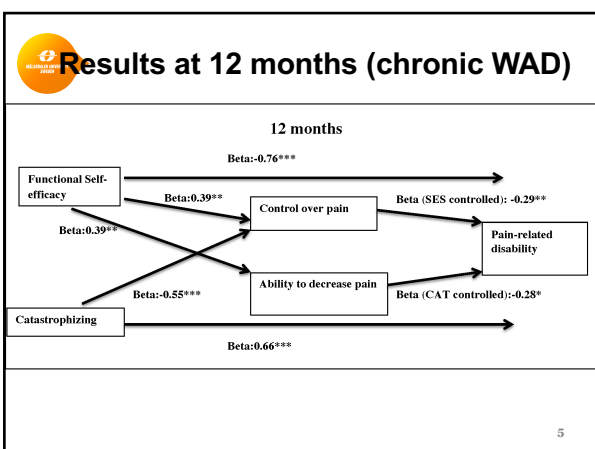
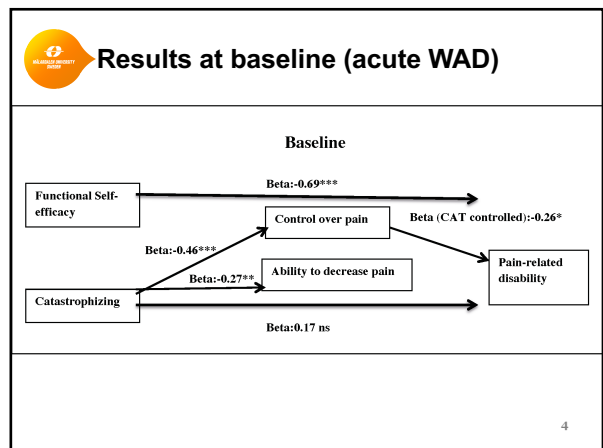
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**Is self-efficacy and catastrophizing in pain-related disability mediated by control over pain and ability to decrease pain in whiplash-associated disorders?**

Anne Söderlund, PhD, Maria Sandborgh, PhD, and Ann-Christin Johansson, PhD

Department of Physiotherapy, School of Health, Care and Social Welfare, Mälardalen University, Västerås, Sweden

The study was designed to investigate if and how perceived control over pain, ability to decrease pain, functional self-efficacy, catastrophizing, and pain-related disability are integrated in the WAD context.



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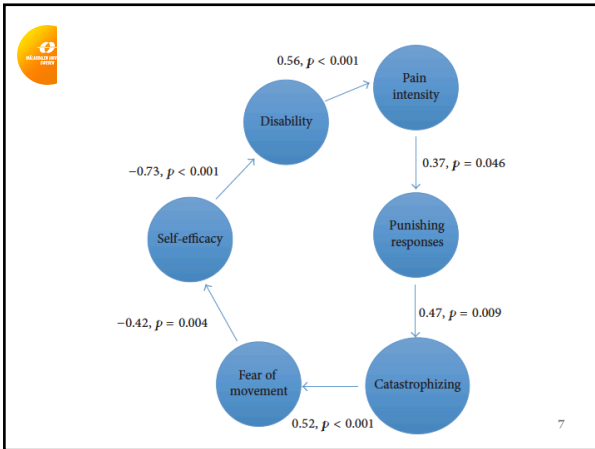
**Research Article**

**The Relation between the Fear-Avoidance Model and Constructs from the Social Cognitive Theory in Acute WAD**

Maria Sandborgh, Ann-Christin Johansson, and Anne Söderlund

Department of Physiotherapy, School of Health, Care and Social Welfare, Mälardalen University, Box 883, 721 23 Västerås, Sweden

The aim was to exemplify the possible input from Social Cognitive Theory on the FA-model. Specifically the role of functional self-efficacy and perceived responses from significant others was studied.



**Predictors before and after multimodal rehabilitation for pain acceptance and engagement in activities at a one-year follow-up for patients with Whiplash Associated Disorders, WAD – A study based on the Swedish Quality Registry for Pain Rehabilitation (SQRP)**

Söderlund, A., Löfgren, M., Stålnacke, B-M

- The results showed that for engagement in activities and pain acceptance at one-year follow-up, the fear of movement appears to emerge as the strongest predictor, but patients' perceived reactions from their spouses need to be considered in planning the management of WAD.

Submitted

**Pain perception is mediated by cognitive and behavioral factors**

Adjustment to pain, disability, the use of coping strategies, post-traumatic stress symptoms and health-related quality of life in WAD are mediated by:

- negative pain beliefs such as catastrophizing
- fear avoidance or fear of movement
- depression
- functional self-efficacy
- punishing responses of significant others

These insights have not improved treatments outcomes for WAD.

**Quantitative and qualitative studies highlighting patients' beliefs and expectations**

- Previous research mostly by quantitative methods limiting the studies to beliefs specified by the researcher.
- Qualitative methods can reveal novel insights into participants' beliefs and could lead to new outcome variables and targeted treatment strategies.
- Opportunity to talk about their experiences reveal insights into patients' beliefs about pain not shown by a questionnaire.

| Authors year       | Country | Sample size | Mean age | Aim  | Setting                                 |
|--------------------|---------|-------------|----------|--|---|
| Bostick et al 2012 | Canada  | 17, 2 males | 40.8     | Explore experiences informing WAD-related pain beliefs   | Physiotherapy and chiropractic clinics  |
| Rydstad et al 2010 | Sweden  | 9, 4 males  | 40.6     | Explore patients' with long-term WAD experiences of participation, knowledge and strategies gained for handling daily occupations 1 year after rehabilitation. | Hospital day-care rehabilitation clinic |

| Authors, year         | Country        | Sample size  | Mean age | Aim  | Setting                                |
|-----------------------|----------------|--------------|----------|--|--|
| Walton et al 2013     | Canada         | 35, 11 males | 44.3     | Describe the meaning of being recovered as perceived by persons with long-term neck pain of traumatic origin | Physiotherapy and chiropractic clinics |
| Williamson et al 2015 | United Kingdom | 20, 8 males  | 43       | Identify beliefs about pain and recovery in individuals with WAD.  | Physiotherapy clinics                  |

| Bostick et al, 2012                   | Rydstad et al, 2010          | Walton et al, 2013                             | Williamson et al, 2015              |
|---------------------------------------|------------------------------|--|-------------------------------------|
| Control over pain                     | Strategies for managing pain | Absent, or at least manageable symptoms        | It's up to me                       |
| Control over daily demands            | Work resumption              | Participation in valued life roles             | Needing support                     |
| Ability to control one's pain         | Support                      | Having the physical capacity one ought to have | Loss of confidence                  |
| Perceived severity of the injury/pain | Loss of hope                 | Autonomy and spontaneity                       | The need for realistic expectations |
| Treatment success                     | Loss of social roles         | Re-establishing a satisfactory sense of self.  | Unsure about the future             |
| Interference and loss Stigma          | Abandoned by those around    | Feeling positive emotions                      | Movement is best                    |
| Understanding Incongruence            | Changed self-image           |  | Reasons not to move                 |
| Optimism                              | New knowledge                |  | Fitting it all in                   |
| Generally an optimist                 | Hope                         |  | Optimism                            |
|                                       |                              |  |                                     |
|                                       |                              |  |                                     |
|                                       |                              |  |                                     |

**Possible themes**

- Self-efficacy in controlling the life situation
- Distancing from normalcy
- Existential uncertainty
- Understanding the pain
- Happiness
- The meaning of recovery

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**Concluding remarks**

- Caregivers should be sensitive to patients' beliefs of their pain problems.
- The importance of perceived punishing responses from a spouse/intimate partner and patients' functional self-efficacy, and in consequence these factors might also be valuable to consider in the treatment of WAD patients.
- Research on how people experience illness shows that the crisis it presents throws people out of their normal lives. Order becomes disorder, what they could control becomes uncontrollable (Charmaz 2000).
- Collecting and understanding, persons' experiences is necessary to ensure the relevance of outcome measures and developing effective management strategies.

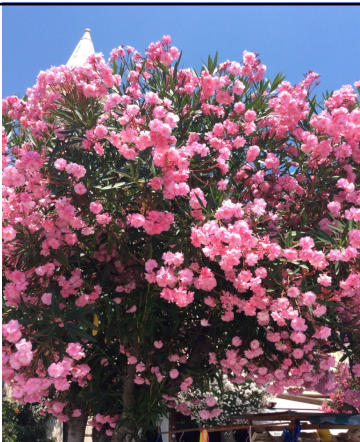
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**Ecological model– a framework for understanding patients' beliefs and expectations and developing interventions**

Principles:

- Behaviors are influenced on multiple levels; intrapersonal, interpersonal, organizational, community and public policy levels
- There are interactional influences across levels; mediator and moderator variables and their effects
- Effective interventions in changing behavior should be developed on multiple levels; eg. Changing individual's beliefs reinforced by social support and environmental changes.
- Environmental contexts are important determinants of behavior; barriers or facilitators

• Thank you!



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