



# Independent but not Interdependent Self-Construal Increases Risk for Development of Chronic Pain

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## Introduction

- Self-construal is the way in which people identify themselves in relation to others<sup>1</sup>
  - Independent
    - Value their uniqueness from others
    - Focused on individual pursuits and self-actualization<sup>2</sup>
  - Interdependent
    - Value social obligations and relationships
    - Focused on suppressing distinction from others and achieving collective goals<sup>2</sup>
- No prior longitudinal study on the effect of self-construal on the development of chronic pain
- Interdependence has a positive effect on several health-related measures including
  - Well-being<sup>3,4,5</sup>
  - Memory<sup>6</sup>
  - Mental health<sup>7,8</sup>
- Health messages are more effective when their goal orientation aligns with the self-construal of the consumer<sup>2,9</sup>

## Objective

• To determine whether self-construal can predict the development of chronic pain over a 9-10 year period

## Hypothesis

• Having an interdependent (but not independent) self-construal will buffer against the development of chronic pain

## Methods

- Open source dataset MIDUS was used to assess longitudinal effects of self-construal on the development of chronic pain over time
  - MIDUS Wave 2 (2004) & 3 (2013)
  - Subjects with no chronic pain at Wave 2 were used for the analysis
  - Self-Construal Scale<sup>10</sup>
    - Independence
      - “Being able to take care of myself is a primary concern for me”
    - Interdependence
      - “My happiness depends on the happiness of those around me”
    - Scored on a scale of 1 (strongly agree) to 7 (strongly disagree)
  - Chronic pain was self-reported as yes/no to “pain that persists beyond the time of normal healing and has lasted from anywhere from a few months to many years”
- Binary logistic regression performed to longitudinally assess the development of chronic pain in relation to both independent and interdependent self-construal

## Distinctions Between Self-Construals

Independence	Interdependence
Individualist	Collectivist
Promotion-oriented	Prevention-oriented
Identity is in uniqueness from others	Identity is in relationships with others
Achievement, Autonomy, Distinction	Harmony & Fulfillment of Obligations

\*an excessive degree of the behaviors associated with either self-construal can lead to negative health consequences

## Results

Longitudinal Predictors of the Development of Chronic Pain			
Variables	OR	95% CI	p
BMI	1.002	[.977, 1.027]	.902
Depression	.960	[.885, 1.042]	.332
Anxiety	1.085	[.888, 1.326]	.425
Physical Health	.896	[.756, 1.062]	.206
Mental Health	.906	[.763, 1.075]	.258
# Chronic Conditions	.885	[.828, .947]	< .001
<i>Independence</i>	.877	[.780, .987]	.029
<i>Interdependence</i>	.984	[.883, 1.097]	.771

Table X. Binary logistic regression with independent and interdependent self-construal predicting the development of chronic pain between Waves 2 and 3 of the MIDUS (controlling for age, sex, education, marital status, and race).

- Self-construal predicted the development of chronic pain over a 9-10 year period in the MIDUS dataset --
  - Independence was associated with an increased risk for developing chronic pain --
  - Interdependence was *not* associated with an increased risk for developing chronic pain --
- Age, sex, education, marital status, and race were also controlled for --

## Discussion

- Independent individuals may be more likely to develop chronic pain because they
  - Are less reliant on social support
  - Do not prioritize prevention-oriented information as much as they do promotion-oriented information
- Interdependent individuals may not be more likely to develop chronic pain because they
  - Are prevention-oriented, and humans avoid loss more than they seek gain<sup>11</sup>
    - And more easily persuaded to engage in health behaviors that prevent chronic pain or other losses of health
  - Are more accepting of negative health information and may be more likely to adjust their habits accordingly<sup>12</sup>
  - Focus on others and spend time with interdependent individuals who empathize with their pain<sup>13</sup>



## Implications

- Implications for public health organizations and health companies
- Independent subjects place a greater than usual priority on prevention information when interdependence is primed<sup>14</sup>
  - For example, a public health advertisement about the importance of avoiding nicotine usage to prevent chronic pain development may be better received by individuals with either self-construal if the ad emphasizes spending quality time with family and friends as a reason for preserving health

## MIDUS Wave 2 Survey Demographics

Main Racial Origin	Total	% of Valid Responses	Age		
			Minimum	Maximum	Mean
White	4,473	90.6%	28	84	55.41
Black and/or African American	229	4.6%			
Native American or Eskimo	77	1.6%			
Asian	27	.5%			
Native Hawaiian or Pacific Islander	7	.1%			
Other	126	2.6%			
N=4,939 for Valid Responses, 24 responses were invalid					

  

	Gender	
	Count	% of Total
Male	2,316	46.7%
Female	2,647	53.3%

## Limitations

- The MIDUS survey demographics were narrow, and both self-construal and chronic pain have been shown to vary across different cultural contexts
  - Only US residents were included as participants (99.3% were US citizens)
  - Participants were predominantly White
- Only 6 of the 24 items from the Self-Construal Scale were used to measure self-construal

## Future Directions

- Future studies should analyze this relationship in other populations and across different timelines, and utilize the full Self-Construal Scale

## References

1. Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological review*, 98(2), 224.
2. Sherman, D. K., Uskul, A. K., & Ujeda, J. A. (2011). The role of the self in responses to health communications: A cultural perspective. *Self and Identity*, 10(3), 284-294.
3. Lun, J., Kesebir, S., & Oishi, S. (2008). On feeling understood and feeling well: The role of interdependence. *Journal of Research in Personality*, 42(6), 1623-1628.
4. Mara, C. A., DeCicco, T. L., & Storkin, M. L. (2010). An Investigation of the Relationships Among Self-Construal, Emotional Intelligence, and Well-Being. *International Journal of Transpersonal Studies*, 29(1), 1-11.
5. Poon, C. Y. M., & Fung, H. H. (2008). PHYSICAL ACTIVITY AND PSYCHOLOGICAL WELL-BEING AMONG HONG KONG CHINESE OLDER ADULTS: EXPLORING THE MODERATING ROLE OF SELF-CONSTRUAL. *AGING AND HUMAN DEVELOPMENT*, 66(1), 1-19.
6. Fung, H. H., Isaacowitz, D. M., Lu, A. Y., & Li, T. (2010). Interdependent self-construal moderates the age-related negativity reduction effect in memory and visual attention. *Psychology and Aging*, 25(2), 157-172.
7. Mak, W. W., Law, R. W., & Teng, Y. (2011). Cultural model of vulnerability to distress: The role of self-construal and sociotropy on anxiety and depression among Asian Americans and European Americans. *Journal of Cross-Cultural Psychology*, 42(1), 75-89.
8. Shea, M., & Yeh, C. (2008). Asian American students' cultural values, stigma, and relational self-construal: Correlates of attitudes toward professional help seeking. *Journal of Mental Health Counseling*, 30(2), 157-172.
9. Aaker, J. L., & Lee, A. Y. (2001). "I" seek pleasures and "we" avoid pains: The role of self-regulatory goals in information processing and persuasion. *Journal of Consumer Research*, 28(1), 33-49.
10. Singelis, T. M. (1994). The measurement of independent and interdependent self-construals. *Personality and social psychology bulletin*, 20(5), 580-591.
11. Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decisions under risk. *Econometrica*, 47, 313-327.
12. Jacobson, J. A., Ji, L. J., Ditto, P. H., Zhang, Z., Sorokin, D. H., Warren, S. K., ... & Roper-Coleman, S. (2012). The effects of culture and self-construal on responses to threatening health information. *Psychology & health*, 27(10), 1194-1210.
13. Cheon, B. K., Im, D. M., Harada, T., Kim, J. S., Mathur, V. A., Scimeca, J. M., ... & Chiao, J. Y. (2013). Cultural modulation of the neural correlates of emotional pain perception: the role of other-focusedness. *Neuropsychologia*, 51(7), 1177-1186.
14. Lee, A. Y., Aaker, J. L., & Gardner, W. L. (2000). The Pleasures and Pains of Distinct Self-Construals: The Role of Interdependence in Regulatory Focus. *Personality and Social Psychology*, 78(6), 1122-1134.