On the Edge of Unhealthy: Mind-over-Body Beliefs in Sport and Exercise

Johanna Stähler[1], Wanja Wolff[1,2], & Julia Schüler[1]
[1] Department of Sport Science, University of Konstanz, Germany, [2] Department of Educational Psychology, University of Bern, Switzerland

Introduction

- Pushing the body to its limits and tolerating pain is crucial to achieving high performance in sports[1,4].
- ➢ To successfully meet these challenges, we suggest that certain **"Mind-over-Body beliefs"** (MoB beliefs) are necessary.

Mind-over-Body beliefs:
"I believe that success in sport requires **effort**, leaving the comfort zone, **tolerating pain,** and that the mind (**willpower**) is crucial for overcoming physical obstacles."

- ➢ On the other hand, very strong mind-over beliefs might be costly: keeping bodily sensations consistently in check via mental processes might render athletes unaware of the negative consequences excessive exercise can have (e.g., exercise addiction, injuries)[2,3].

We expect that the Mind-over-Body Scale ...

- → …captures one underlying sport-specific construct distinct from other domain-general motivational constructs, such as self-control or self-efficacy.
- → …is moderately positively associated with self-control and self-efficacy (construct validity).
- → …measures a construct at the edge of unhealthy: we expect positive correlations with training volume[4] and exercise addiction, and better athletes to score higher on the Mind-over-Body Scale (criterion validity).

Mind-over-Body Scale

WILLPOWER	1	Every sporting challenge can be accomplished with sufficient willpower.
	2	Many of those who fail at sports simply did not "want it badly enough".
	3	Failure in sports reflects a lack of willpower.
PAIN	4	Tolerating pain is a normal part of sports.
	5	No pain, no gain.
	6	Sometimes it is required to push through injuries and just keep going.
EFFORT	7	If one did not give a full effort in training, then there is no real sense in doing it at all.
	8	Sport is about pushing to one's personal boundaries.
	9	The motivating thing about sport is leaving one's comfort zone.

Method

Participants

We developed and validated the MoB Scale in an English as well as a German sample.

Participant Characteristics

Sample	*N*	M_{age}	SD_{age}	Sex	Athletic Level		
					1	2	3
English	469	41.1	10.9	58 % male	49 %	37 %	14 %
German	653	33.3	14.0	52 % male	27 %	26 %	47 %
Total	1122	36.6	13.3	55 % male	38 %	31 %	31 %

Note. A German subsample of *n* = 160 Ultra Athletes are not included in the Athletic Level specification.

Self-report measures for validation:

- **Self-efficacy:** General Self-Efficacy Scale [5]
- **Self-control:** Brief Self-control Scale *,[6]
- **Exercise addiction:** Exercise Addiction Inventory [2, 7]
- **Training volume:** computed by multiplying the frequency and average duration of training sessions.
- **Athletic level:** highest level of athletic competition (1 = no competition; 2 = popular sports; 3 = regional, national, or international competitions)

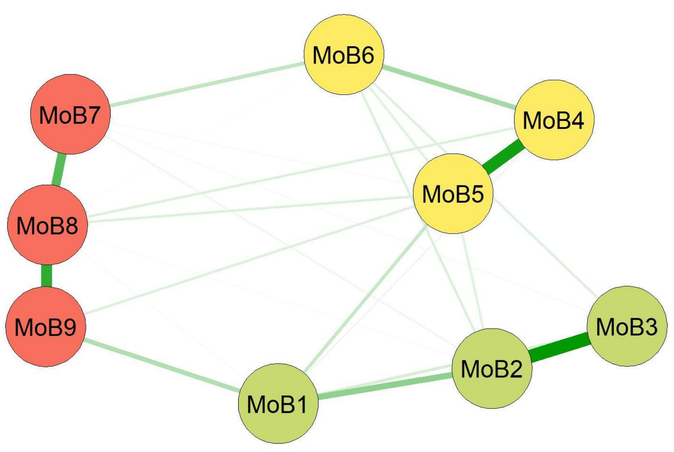
*German subsample of *n* = 263

Results

Exploratory Graph Analysis

(English and German samples, *N* = 1122; bootstrapped results)

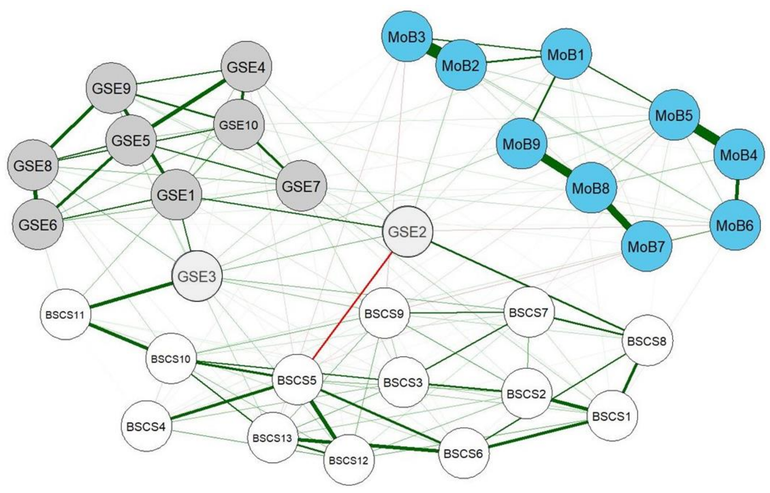
The MoB items form the theoretically expected three communities: **willpower**, **pain**, and **effort**.



Exploratory Graph Analysis

(English sample *N* = 469 and German subsample *n* = 263; bootstrapped results)

The MoB items form a network distinct from self-efficacy (GSE) and self-control (BSCS).

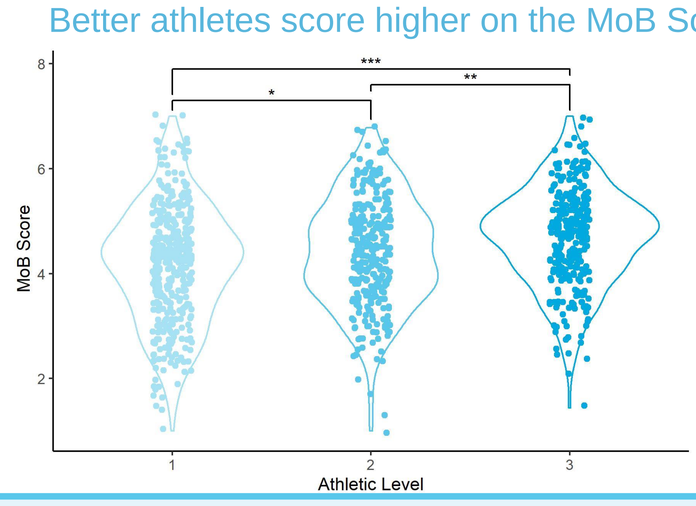


Construct and Criterion Validity

	$r_{Self\text{-}Efficacy}$	$r_{Self\text{-}Control}$	$r_{ExerciseAddiction}$	$r_{TrainingVolume}$
$MoB_{English}$	.30 ***	.05 *n.s.*	.43 ***	.22 ***
MoB_{German}	.23 ***	.14 ***	.42 ***	.28 ***

Note. ***: $p < .001$; *n.s.*: non significant

Better athletes score higher on the MoB Scale:



Discussion

- → We **developed and validated** a new scale to measure MoB beliefs as a sports-specific motivational construct in German and English.
- → The MoB scale measures three subcomponents of MoB beliefs: willpower, pain, and effort.
- → MoB beliefs are **distinct from other motivational constructs** that have been associated with success in sports.
- → MoB beliefs are **related to a high training volume**. They are associated with positive achievements like a **high athletic level** but also with negative outcomes like **exercise addiction**.
- → Outlook: We tested and validated a French and Spanish version of the MoB Scale.

References

1. Tesarz, J., Schuster, A. K., Hartmann, M., Gerhardt, A., & Eich, W. (2012). Pain perception in athletes compared to normally active controls: a systematic review with meta-analysis. *Pain, 153*(6), 1253-1262.
2. Griffiths, M. D., Szabo, A., & Terry, A. (2005). The exercise addiction inventory: a quick and easy screening tool for health practitioners. *British Journal of Sports Medicine, 39*(6), e30-e30.
3. Pálfi, V., Kovacsik, R., & Szabo, A. (2021). Symptoms of exercise addiction in aerobic and anaerobic exercises: Beyond the components model of addiction. *Addictive Behaviors Reports, 14,* 100369.
4. Solli, G. S., Tønnessen, E., & Sandbakk, Ø. (2017). The training characteristics of the world's most successful female cross-country skier. *Frontiers in Physiology, 8,* 1069.
5. Schwarzer, R., & Jerusalem, M. (1995). Generalized self-efficacy scale. In J. Weinman, S. Wright, & M. Johnston (Eds.), *Measures in Health Psychology: A user's portfolio. Causal and control beliefs. (pp.* 35-37) NFER-NELSON.
6. Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality, 72,* 271-324.
7. Terry, A., Szabo, A., & Griffth, M. (2004). The exercise addiction inventory: a new brief screening tool. *Addiction Research and Theory, 12*(5), 489–499.

Contact: johanna.staehler@uni-konstanz.de