

# Associations of Preoperative Anxiety/Depression (EQ-5D-5L) With Pre- and Postoperative Health-Related Quality of Life for Hip and Knee Replacement

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Objectives

Previous literature revealed ambiguous results about preoperative anxiety and depression as predictors for health-related quality of life (HRQoL) before and after total hip replacements (THR) and total knee replacements (TKR). There are various standardized questionnaires for anxiety and depression, mainly with several dimensions. This study aimed to evaluate whether the single dimension of anxiety/depression from the EQ-5D-5L (EuroQoL) was related to preoperative and postoperative overall HRQoL for THR and TKR.

Research Questions

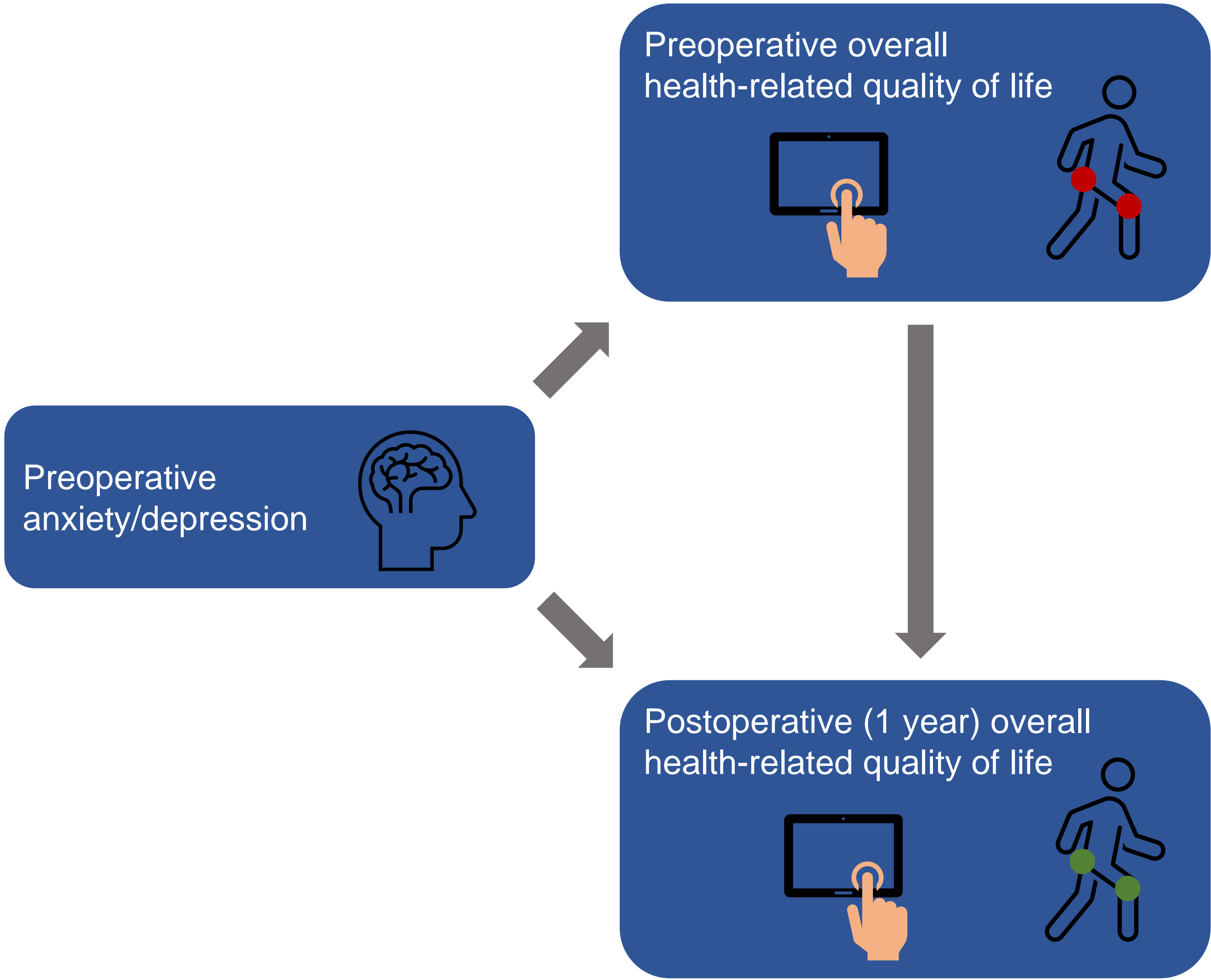
- Is preoperative anxiety/depression associated with overall HRQoL before THR and TKR?
- Is preoperative anxiety/depression associated with overall HRQoL one year after THR and TKR?

Methods

597 patients, with osteoarthritis and a primary THR or TKR from a single hospital in Germany were included. HRQoL was measured preoperatively and 1 year after surgery with the EQ-5D-5L, the EQ-Visual-Analog-Scale (EQ-VAS) and the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). Multivariable linear regression was used to account for patient characteristics, complications after the surgery and preoperative HRQoL.

Results

Preoperative anxiety/depression was related to preoperative HRQoL, measured with the EQ-VAS, but also with the disease specific WOMAC. For THR the reductions were 8.8 and 4.1 points, respectively. The reductions for TKR were similar for the EQ-VAS (4.9 points) but higher for the WOMAC (14.4 points). No association was found for preoperative anxiety/depression with the WOMAC and the EQ-VAS, 1 year postoperatively. Although, complications occurring after the surgery, but not related to the surgery, were negatively associated with postoperative EQ-VAS (14.8 points). Literature-based, minimum clinical important differences were almost reached for patients with those complications.



Preoperative				
	THR		TKR	
	WOMAC	EQ-VAS	WOMAC	EQ-VAS
EQ-5D Anxiety	8.8 **	-4.1 ***	14.4 ***	-4.9 **
Age	N.S.	N.S.	N.S.	N.S.
Gender	-10.1 *	N.S.	-26.3 *	9.4 *
Insurance Status	-10.6 *	4.9 *	N.S.	N.S.
ASA Score	N.S.	-6.1 ***	N.S.	-7.3 **
Body Mass Index	1.6 **	N.S.	N.S.	N.S.
Pain Medication	-2.1 *	N.S.	N.S.	N.S.
Residence	N.S.	N.S.	N.S.	N.S.
Hemoglobin (Preop.)	N.S.	N.S.	5.7 *	N.S.
Physical Activity	-14.2 **	6.6 ***	-12.3 ***	N.S.
Marital Status	N.S.	N.S.	N.S.	N.S.
Implant Type	N.A.	N.A.	N.S.	N.S.
R <sup>2</sup>	0.135	0.124	0.207	0.109

N.S. not significant, N.A. not applicable, significance levels \* <0.05, \*\* <0.01, \*\*\* <0.001

Postoperative				
	THR		TKR	
	WOMAC	EQ-VAS	WOMAC	EQ-VAS
EQ-5D Anxiety	N.S.	N.S.	N.S.	N.S.
Age	0.2 *	N.S.	N.S.	N.S.
Gender	N.S.	N.S.	N.S.	N.S.
Insurance Status	N.S.	N.S.	N.S.	N.S.
ASA Score	N.S.	N.S.	13.5 *	-6.1 *
Body Mass Index	N.S.	N.S.	N.S.	N.S.
Pain Medication	N.S.	N.S.	N.S.	N.S.
Residence	N.S.	N.S.	N.S.	N.S.
Hemoglobin (Discharge)	N.S.	N.S.	N.S.	-2.3 *
Physical Activity	N.S.	N.S.	-13.4 *	6.2 *
Marital Status	N.S.	N.S.	-5.7 *	3.0 *
Implant Type	N.A.	N.A.	N.S.	N.S.
Complications (Postop.)	N.S.	N.S.	N.S.	-14.8 ***
Spinal Anaesthesia	N.S.	N.S.	N.S.	N.S.
Length of Stay	N.S.	N.S.	N.S.	-1.9 *
WOMAC/EQ-VAS (Preop.)	0.1 ***	0.1 **	N.S.	0.2 *
R <sup>2</sup>	0.104	0.083	0.068	0.174

N.S. not significant, N.A. not applicable, significance levels \* <0.05, \*\* <0.01, \*\*\* <0.001

Conclusions

- Preoperative anxiety/depression was associated with generic HRQoL (EQ-VAS) and disease specific HRQoL (WOMAC, not containing a dimension for anxiety) before the surgery, but not after the surgery, because patients with different levels of preoperative HRQoL had similar HRQoL one year after THR and TKR.
- Complications during the follow-up period, not related to the surgery, should be considered thoroughly, because those were negatively associated with postoperative HRQoL.