

# Usability of Telemedicine in Relation to Acceptability, Psychosocial Impact, and Future Use

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## INTRODUCTION

The aim of the analysis is to explore the relations between usability of telemedicine system (TMS), patients' evaluation of acceptability and its influence on the psychosocial impacts in the context of future use of telemedicine system for patients with chronic disease (diabetes and/or hypertension).

## METHODS

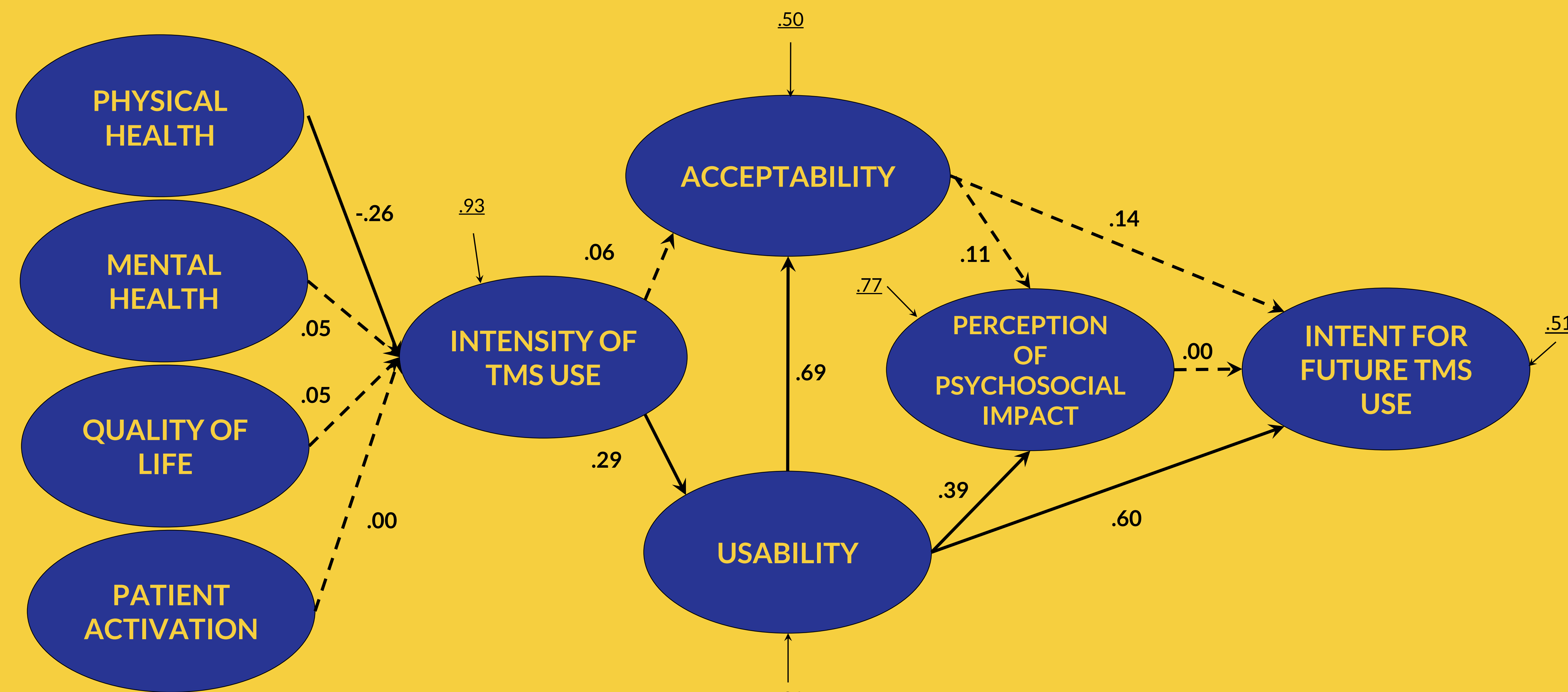
1. Intervention study based on a **baseline-follow up** approach.
2. **103** chronic patients tested a TMS for 3 months → **95 patients** completed the questionnaire after **3 months of testing**, during which patients measured their vital signs with TMS according to clinical protocols.
3. Relationships between the variables were examined with **Structural Equation Modelling** approach.

## RESULTS

Hypothesis	Description	Result
H1	Intensity of TMS use positively effects acceptability of TMS.	✗
H2	Intensity of TMS use has a positive effect on the usability of TMS.	✓
H3	Usability of TMS positively effects acceptability of TMS.	✓
H4	Usability of TMS has a positive effect on patients' self-evaluation of positive impacts of TMS on their quality of life.	✓
H5	Usability of TMS increases intent for future TMS use.	✓
H6	Acceptability of TMS has a positive effect on intent for future TMS use.	✗
H7	Acceptability has a positive effect on patients' self-evaluation of positive impacts of TMS on their quality of life.	✗
H8	Patients' self-evaluation of positive impacts of TMS on their quality of life has a positive effect on intent for future TMS use.	✗

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# Usability of telemedicine system is a strong predictor of its **acceptability**. It influences the **perception of psychosocial impact** of telemedicine system use and determines the patient's **intent for future use**.



$\chi^2=20.18$ ;  $N=95$ ;  $p=.32297$ ;  $RMSEA=.037$

Standardized estimated parameters are shown; underlined: error components.



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## Telemedicine system (TMS)



TMS integrated ISO-certified medical devices: blood glucose and blood pressure monitor connected to a tablet or smartphone app to transmit measurement data to the professional health team via a secured line.

## Sample characteristics

		N	%
Gender	Male	57	55.3
	Female	46	44.7
Age	18 - 50	18	17.5
	51 - 64	59	57.3
	65 or more	26	25.2
Marital status	Lives with a spouse or partner	91	88.3
	Single	12	11.7
Education level	Elementary education (or less)	43	41.7
	Lower vocational or secondary education	31	30.1
	Higher education (college)	12	11.7
Primary disease	Hypertension	54	51.9
	Hypertension and Diabetes	33	31.7
	Diabetes	16	16.3
Capability to use a smart phone (self-assessment)	Very well	16	15.7
	Well	32	31.4
	Medium	34	33.3
	Low or Very low	20	19.6

Note: Sample size may vary as cases were excluded due to missing data.

## Measures

Name of scale	Acronym	References	Cronbach alpha (α)
Psychosocial Impact of Assistive Devices Scale	PIADS-10	Jutai in Day 2002	.914
Service User Technology Acceptability Questionnaire	SUTAQ	Hirani et al 2017	.655
Telehealth Usability Questionnaire	TUQ	Parmanto et al 2016	.914
Intensity of TMS Use		Kothapall et al 2013	
Intent for Future TMS Use		Venkatesh et al 2003	
Short Form 12-Item Health Survey	SF-12	Ware, Kosinski, and Keller 1998	.907 (both dimensions)
Patient Activation Measure	PAM	Hibbard et al 2005	.880
Personal Wellbeing Index	PWI-A	Cummins et al 1994	.931