

## ISPOR 2023 Podium Presentation Supplemental Handout

### Unraveling Acceptance of Healthcare Innovations in Neurorehabilitation: A Systematic Approach Through Health Preference Research

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**Mismatch between Available Resources and Health Needs:** A projected shortage of non-licensed healthcare professionals in Germany by 2025 highlights a growing disparity between the current workforce and increasing healthcare demands.

**Digital Solutions for Balancing Demand and Supply:** In the E-BRAiN project, a humanoid robot was explored for stroke patient neurorehabilitation. However, patient acceptance, critical for engagement and success, lacks evidence.

**How to Unravel Acceptance?** Investigating digital intervention attributes influencing patient acceptance, a mixed-method approach included a discrete choice experiment. Attribute selection based on clinical effects, technical aspects, and administration was conducted.

**Descriptive Framework:** Seven attributes were integrated, focusing on technical aspects, copayment, and therapy success. Technical aspects included exercise explanation, information provision, contact with healthcare professionals, patient influence on therapy, and data processing.

**Survey Instrument Design, Sample, and Data Collection:** We used a fractional-factorial design. A partial profile design addressed cognitive load, with each participant assigned 6 best-best-ranking tasks. 1259 participants from stroke patients and the general population engaged.

**Statistical Analysis:** Based on Random Utility Theory, a mixed logit model analyzed attribute level coefficients. Willingness to pay (WTP) and predicted uptake probabilities were calculated, illustrating acceptance likelihood.

**Results – Mixed Logit Model:** Clinical effectiveness was the most significant attribute. Technical aspects had lower impact except for attributes linked with negative impact.

**Focus – Willingness to Pay:** A more detailed analysis of technical aspects was possible in WTP analysis. It revealed a shift from no possibility to positive attributes, indicating a preference for information, contact, influencing therapy progress, and data processing.

**Focus – Predicted Uptake Probabilities:** While therapy success was most influential, predictive uptake probabilities indicated technical aspects impact acceptance. Predicted uptake probabilities varied from 44% to 84% based on attribute level changes.

**Discussion:** Understanding patient preferences is crucial for designing effective healthcare solutions, aiding decision-makers in the development and adoption of digital interventions.

**Limitations:** Recruitment bias was addressed through quota sampling. Cognitive impairment of stroke patients led to reduced choice tasks, with participants asked to select the best and second-best alternatives.

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**Ethical Approval:** The preference survey instruments, the informed consent form, and the study design were reviewed and approved by the ethics committee of Hochschule Neubrandenburg (HSNB/177/21).