University Hospital Zurich Institute for Complementary and Integrative Medicine Director: Prof. Dr. med. Claudia M. Witt, MBA

Work under the supervision of PD Dr. phil. Jürgen Barth

Effectiveness of Supportive Interventions for Cancer Patients and the Impact of Effect Modifiers on Treatment Outcomes

INAUGURAL-DISSERTATION

To receive the title of Dr. sc. med./PhD awarded by the Faculty of Medicine University of Zurich

> Submitted by Yuqian Yan

Dissertation committee: Prof. Dr. med. Claudia M. Witt, MBA (chair) PD Dr. phil. Jürgen Barth (direct supervisor) Prof. Dr. med. Roland von Känel Dr. med. Erik von Elm

This dissertation has been accepted by the Faculty of Medicine, University of Zurich upon request of Prof. Dr. med. Claudia M. Witt, MBA Zurich 2024

Table of Contents

Proof of Publication	.i
Abstract	ii
1 Introduction	1
1.1 Background	1
1.2 General Considerations about Effect Modifiers in Intervention Studies	2
1.3 Relevant Effect Modifiers in Supportive Interventions	4
1.3.1 Effect Modifiers in Acupuncture	4
1.3.2 Effect Modifiers in DHIs	6
2 Acupuncture for the Prevention of Chemotherapy-Induced Nausea and	
Vomiting in Cancer Patients: A Systematic Review and Meta-Analysis	8
3 Patient Motivation as a Predictor of Treatment Outcomes in Digital Health	
Intervention Studies: A Meta-Epidemiological Study	6
Intervention Studies: A Meta-Epidemiological Study	
	1
4 Discussion and Outlook 11	1
4 Discussion and Outlook	1 1 2
4 Discussion and Outlook 11 4.1 Summary of the Original Work 11 4.2 Challenges with Source Data 112	1 1 2 3
4 Discussion and Outlook 11 4.1 Summary of the Original Work 11 4.2 Challenges with Source Data 112 4.3 Patient Motivation in Clinical Studies 113	1 1 2 3 4
4 Discussion and Outlook 11 4.1 Summary of the Original Work 11 4.2 Challenges with Source Data 112 4.3 Patient Motivation in Clinical Studies 112 4.4 Selection of Effect Modifiers 114	1 2 3 4
4 Discussion and Outlook 11 4.1 Summary of the Original Work 11 4.2 Challenges with Source Data 11 4.3 Patient Motivation in Clinical Studies 11 4.4 Selection of Effect Modifiers 11 4.5 Therapeutic Setting in Clinical Studies 11	1 1 2 3 4 5
4 Discussion and Outlook 11 4.1 Summary of the Original Work 11 4.2 Challenges with Source Data 11 4.3 Patient Motivation in Clinical Studies 11 4.4 Selection of Effect Modifiers 11 4.5 Therapeutic Setting in Clinical Studies 11 4.6 Conclusions 11	1 1 2 3 4 5

List of Figures	vi
List of References	vii
Acknowledgements	xxvi
Curriculum Vitae	xxvii

List of Tables

Table 2.1 Study characteristics summary (N = 38).	15
Table 2.2 Meta-analysis of treatment effects (complete control [CC] of nausea and vomiting) of	
acupuncture versus control groups (summary statistics)	17
Table 2.3 GRADE summary of findings table	18
Table 3.1 Intraclass coefficients based on five ratings for the overall rating and each indicator	82
Table 3.2 Meta-regression and subgroup analysis on quality of life.	83
Table 3.3 Meta-regression and subgroup analysis on anxiety	84
Table 3.4 Meta-regression and subgroup analysis on depression.	85
Table 3.5 Meta-regression and subgroup analysis on attrition.	86