

**Exploring the impact of psychological intervention on self-esteem and body image in
post-traumatic limb amputation patients: A mixed methods study**

by

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Declaration

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DECLARATION

I declare that 'Exploring the impact of psychological intervention on self-esteem and body image in post-traumatic limb amputation patients: A mixed methods study' is my own work and that all the sources that I have quoted have been indicated and acknowledged by means of complete references.



LOUISE VAN DER MERWE

27 February 2026

DATE

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I would like to dedicate this dissertation to my late father, Japie Van Der Merwe, whose steadfast belief in me and constant support guided me through every step of my journey. His unconditional love, encouragement, and pride in my achievements have been a source of strength and inspiration. He was my biggest supporter and advocate in life, and I carry his faith in me with deep gratitude. I wish he could be here to witness this milestone, but I know he would be proud. This accomplishment is as much his as it is mine.

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"The highest form of knowledge is empathy, for it requires us to suspend our egos and live in another's world." ~ Bullard (n.d.)

Abstract

Despite the dearth of prevalence statistics regarding traumatic limb loss in South Africa, traumatic limb loss through amputation has been predominantly associated with motor vehicle accidents. Traumatic limb amputation has been described as both a physically and psychologically traumatic event. It is associated with the development of trauma-related psychopathology, for example, posttraumatic stress disorder (PTSD), and changes in body image and self-esteem, which have been well documented. However, the treatment of posttraumatic limb amputation is predominantly associated with medical intervention, neglecting psychological intervention. This study thus aimed to 1) compare the level of body image and self-esteem in post-trauma amputee patients who have received psychological intervention, as compared to those who have not; and 2) to explore the perceptions of body image and self-esteem amongst post-trauma amputee patients. A quant-qual sequential explanatory mixed method design, underpinned by a pragmatic paradigm, was employed. Participants were recruited via non-probability sampling through Patient Advocacy Groups and the Prosthetics Medical Community. They included South African post-amputee patients as well as Healthcare professionals (HCPs) who treat post-amputee patients. The quantitative part of the study, which addressed the first research aim, included collecting data from the patient cohort through two online questionnaires: 1) The Multidimensional Body-Self Relations Questionnaire (MBSRQ) (Cash, 1990) and 2) The Rosenberg Self-esteem (RSE) scale (Rosenberg, 1965). A t-test was used to analyse the data. No statistically significant difference in self-esteem scores was found between participants who received psychological counselling and those who did not ($p = .104$), although the counselling group had higher mean scores. Similarly, trauma-related amputees who accessed psychological support reported higher body-image scores than those without support, but the difference was also nonsignificant ($p = .481$). The qualitative part of the study, which addressed the second

research aim, comprised semi-structured individual interviews with 4 posttraumatic amputee patients who had undergone psychotherapy, 3 posttraumatic amputee patients who had not undergone psychotherapy, and 5 HCPs. Qualitative insights demonstrated a shared view among patients and HCPs that psychological intervention constitutes a critical aspect of recovery and should be embedded as a standard component of post-trauma amputee rehabilitation programmes. All ethical considerations were adhered to. This study contributes to the enhancement and improvement of treatment programmes for traumatic post-amputee patients.

Key words/Concepts: Posttraumatic amputation; self-esteem, body-image, psychological intervention, rehabilitation, trauma, mixed-methods

Opsomming

Ten spyte van die gebrek aan voorkomssyfers rakende die traumatiese verlies van ledemate in Suid-Afrika, word traumatiese ledemaatverlies deur amputasie hoofsaaklik met motorvoertuigongelukke geassosieer. Traumatiese ledemaatamputasie is beskryf as sowel 'n fisies en sielkundig traumatiese gebeurtenis. Dit word geassosieer met die ontwikkeling van traumaverwante psigopatologie, soos posttraumatiese stresversteuring (PTSV), sowel as veranderinge in liggaamsbeeld en selfbeeld, wat alles goed gedokumenteer is. Die behandeling van posttraumatiese ledemaatamputasie word egter hoofsaaklik met mediese ingryping geassosieer, en sielkundige ingryping word dikwels afgeskeep. Die doel van hierdie studie was dus om (1) die vlakke van liggaamsbeeld en selfbeeld onder post-trauma geamputeerde pasiënte wat sielkundige ingryping ontvang het, te vergelyk met dié wat nie het nie; en (2) die persepsies van liggaamsbeeld en selfbeeld onder post-trauma geamputeerde pasiënte te ondersoek.

'n Kwantitatief-kwalitatiewe opeenvolgende verklarende gemengde-metodesontwerp, ondersteun deur 'n pragmatiese paradigma, is aangewend. Deelnemers is gewerf deur middel van nie-waarskynlikheidsteekproefneming via pasiëntbelangegroep en die prostetiese mediese gemeenskap. Die steekproef het Suid-Afrikaanse geamputeerde pasiënte sowel as gesondheidsorgpersoneel wat by hulle behandeling betrokke was, ingesluit. Die kwantitatiewe komponent van die studie, wat die eerste navorsingsdoelwit aangespreek het, het die insameling van data van die pasiëntkohort deur middel van twee aanlyn vraelyste ingesluit: 1) die multidimensionele ligaam-selfverhoudingsvraelys (MBSRQ) (Cash, 1990) en 2) die Rosenberg-selfbeeldskaal (RSE-skaal) (Rosenberg, 1965). 'n T-toets is gebruik om die data te analiseer. Geen statisties beduidende verskil in selfbeeldtellings is gevind tussen deelnemers wat sielkundige berading ontvang het en diegene wat dit nie ontvang het nie ($p = .104$), alhoewel die beradingsgroep hoër gemiddelde tellings getoon het. Net so het

traumaverwante geamputeerdes wat sielkundige ondersteuning gebruik het hoër liggaamsbeeldtellings gerapporteer as diegene sonder ondersteuning, hoewel hierdie verskil ook onbeduidend was ($p = .481$). Die kwalitatiewe komponent van die studie, wat die tweede navorsingsdoelwit aangespreek het, het halfgestruktureerde individuele onderhoude met vier posttraumatiese geamputeerde pasiënte wat psigoterapie ondergaan het, drie posttraumatiese geamputeerde pasiënte wat nie psigoterapie ondergaan het nie, en vyf gesondheidsorgpersoneellede behels. Kwalitatiewe bevindinge het 'n gedeelte siening onder pasiënte en gesondheidsorgpersoneel weerspieël dat sielkundige ingryping 'n kritieke aspek van herstel uitmaak en as 'n standaardkomponent van rehabilitasieprogramme vasgelê moet word. Alle etiese oorwegings is nagekom. Hierdie studie dra by tot die verbetering en bevordering van behandelingsprogramme vir traumatiese post-amputasiepasiënte.

Sleutelwoorde/konsepte: Posttraumatiese amputasie, selfbeeld; liggaamsbeeld; sielkundige ingryping; rehabilitasie; trauma, gemengde metodesontwerp

Isifinyezo

Yize kunokusweleka kokusabalala kwezibalo ezimayelana nokulahlekelwa isitho ngenxa yengozi eNingizimu Afrika, ukulahlekelwa isitho ngenxa yokunqanyulwa/ukuhlinzwa kuhambisana kakhulu nokudalwa izingozi zezimoto. Ukunqanyulwa isitho kuchazwe njengesimo esihlukumeza kakhulu ngokwengqondo nangokomzimba. Kuhambisana nokudaleka kwezifo ezihambisana nezinkinga zengqondo ezidalwa ingcindezi, ezifana nokugula kwengqondo emva kokushaqeka okukhulu (posttraumatic stress) kanye kokushintsha kwendlela umuntu azibona ngayo kanye nokuzethemba, konke lokhu kubhalwe kahle. Kepha ukulapha ukugula kwengqondo ngenxa yokuthuka okukhulu emva kokunqanyulwa isitho kuvamse ukuhambisana nokungxila kakhulu ekulapheni leyodawana elimele, bese kushiya ngaphandle ukungenelela okugxile ekulapheni ngokwengqondo. Lolucwaningo ke luhlose: 1) ukuqhathanisa idlela iziguli ezinqanyulwe imilenze emva kwengozi eziyaye zibheke ngayo isimo semizimba kanye nokuzethemba emva kokuthola ukwelashwa ngokwengqondo, ziqhathaniswa nalezo ezingalutholanga usizo lokwelashwa ngokwengqondo, kubhekwa indlela ababuka ngayo imizimba kanye nokuzethemba; luphinde 2) luhlale ukuqonda ngemizimba kanye nokuzethemba phakathi kweziguli ezinqunywe isitho emva kwengozi. Kulolucwaningo kwasetshenziswa indlela yokuqoqa amanani yocwaningo, indlela exubile ewuchungechunge oluchazayo, esekelwe izinto eziphathekayo. Ababamba iqhaza bakhethwa ngokohlelo lokungakhethi ngokwezibalo kusetshenziswa namaqembu amele iziguli kanye nemiphakathi obhekelele ukufakelwa kwamalunga omzimba. Amasampula ayehlenganisa iziguli zaseNingizimu Afrika ezinqunyiwe kanye nochwepheshe bezempilo -(HCPs) ekubalapheni. Ingxenye yobuningi bocwaningo, ebheke inhlosonqangi yocwaningo ibihlenganisa ukuqoqwa kolwazi kwiqembu leziguli kusetshenziswa uhlu olubili lwemibuzo yakwi inthanethi: 1) i- Multidimensional Body-Self Relations Questionnaire (MBSRQ)

(Cash, 1990), kanye 2) ne- Rosenberg Self-esteem (RSE) Scale (Rosenberg, 1965). Uphenyo nge-t-test lwasethsenziswa ukuhlaziya imininingwane. Kawukho umehluko ongako ngokwezibalo owatholakala uma kubhekwa ukuzethemba kulabo ababamba iqhaza kucwaningo futhi abake bathola ukulashwa ngokwengqondo uma beqhathaniswa nalabo abangalutholanga usizo lokwelashwa ngokwezengqondo ($p = .104$), yize amaqembu aluleka ngokwengqondo eveza izilinganiso eziphezulu zamaphuzu. Ngokufanayo, laba abanqanyulwe izitho ngenxa yezingozi abafinyelela kusizo lokwelulekwa ngokwengqondo kuvela ukuthi babheka imizimba ngendlela enhle kunalabo abangalutholanga usizo lokwalulekwa noma umehluko ungekho mkhulu ($p = .481$). Ingxenye yocwaningo olungokwemfanelo, ibheka inhloso yesibili yocwaningo, ebandakanya ingxoxo mpendulwano elungiselelwe nesiguli ngasinye, kwiziguli ezine ezinqunywe isitho ngenxa yengozi kwezathola usizo lokulashwa ngokwengqondo, kanye namalunga amahlanu ama-HCPs kuxoxwa ngokuthi usizo lwezengqondo lubaluleke kakhulu khathi isiguli silulama futhi kufanele lushuthekwe njengengxenye yezinhlelo zokuhlumelelisa emva kokunqanyulwa isitho ngenxa yengozi. Yonke imigomo ebhekene nokuziphatha yalandelwa. Lolucwaningo lufaka isandla ekuthuthukiseni kanye nasekwenzeni ngcono izinhlelo zokulapha iziguli ezinqanyulwe izitho ngenxa yengozi.

Amagama abalulekile /Imiqondo: Ukunqunywa kwelungu ngenxa yengozi; ukuzethemb, indlela umuntu azibona ngayo, ukungenelela ngokwengqondo, ukuhlumelelisa, ukulimala, izindlela ezixubile.

Table of Contents

<i>Declaration</i>	<i>ii</i>
<i>Acknowledgements</i>	<i>iii</i>
<i>Abstract</i>	<i>vi</i>
<i>Opsomming</i>	<i>viii</i>
<i>Isifinyezo</i>	<i>x</i>
<i>List of Tables</i>	<i>xix</i>
<i>List of Figures</i>	<i>xix</i>
<i>Chapter 1: Introduction</i>	<i>1</i>
<i>Introduction to the study</i>	<i>1</i>
<i>Amputation in the South African Context</i>	<i>3</i>
<i>Causes and Prevalence of Amputation</i>	<i>4</i>
<i>Psychological and Physical Impact of Amputation</i>	<i>5</i>
<i>Problem Statement and Rationale</i>	<i>5</i>
<i>Primary Research Question and Aims</i>	<i>6</i>
<i>Researcher Positionality</i>	<i>7</i>
<i>Definitions of Key Concepts</i>	<i>7</i>
<i>Chapter Outline</i>	<i>10</i>
<i>Chapter Summary</i>	<i>11</i>
<i>Chapter 2: Literature Review</i>	<i>12</i>

<i>Contextualising traumatic amputation and the psychological sequelae</i>	<i>12</i>
The Psychological Burden of Limb Amputation: An Overview	12
Regional Prevalence and Data Gaps (South Africa and the Global South).....	13
Pre-Operative Preparation, Quality of Life, and Caregiver Strain.....	14
Chronic-Illness Amputation versus Trauma-Related Amputation: Divergent Trajectories	15
Psychological Sequelae of Post-Traumatic Limb Loss: Trauma, Amputation, and Post-Traumatic Stress Disorder (PTSD)	16
<i>Body Image and Self-Esteem.....</i>	<i>18</i>
Body Image and Self-Esteem in Populations with Disabilities.....	21
Family and Social Support	23
Discrimination and Social Isolation.....	25
<i>Access and adherence to rehabilitation programmes.....</i>	<i>26</i>
The Role of Adherence in Post-Amputation Rehabilitation Outcomes.....	26
Multidisciplinary and Interdisciplinary Care Models.....	27
Barriers to treatment and rehabilitation.....	28
The WHO Framework on Disability-Inclusive Health Access.....	29
The South African Public-Health Context	30
Cultural Beliefs, Stigma, and Traditional Healing in Patient Decision-Making	31
Treatment and Psychological Intervention	32
The Important Role of Healthcare Professionals (HCPs) in the Rehabilitation of Amputee Patients.....	34
<i>Chapter Summary.....</i>	<i>35</i>

<i>Chapter 3: Research Design and Methods</i>	37
<i>Research Design</i>	37
Paradigmatic Framework and Mixed Methods Design	37
Mixed methods approach	41
<i>Research Methods, Data Collection, Data Analysis</i>	42
Quantitative Phase	42
Quantitative Research Methods	42
Quantitative participant population and sampling	43
Quantitative Data Collection.....	44
Quantitative Data Analysis.....	48
Qualitative Phase	48
Qualitative Research Methods	48
Qualitative participant population and sampling strategy.....	51
Qualitative Data Collection.....	52
Qualitative Data Analysis.....	54
<i>Measures to Ensure Trustworthiness</i>	55
<i>Ethical Considerations</i>	56
Ethical clearance	57
Beneficence and non-maleficence	57
Voluntary participation and freedom to withdraw	58
Informed consent	58
Anonymity and confidentiality	58
<i>Chapter Summary</i>	59
<i>Chapter 4: Introducing the Participants</i>	60

Quantitative Phase Demographics.....	60
<i>Introducing the Qualitative Research Participants.....</i>	61
Post-traumatic amputee participants	61
Participant 1	62
Participant 2	63
Participant 3	64
Participant 4	65
Participant 5	66
Participant 6	67
Participant 7	69
Healthcare Professionals Participants.....	70
Participant 1: Carol (Physiotherapist)	70
Participant 2: Jake (Orthopaedic Surgeon)	71
Participant 3: Paul (Certified Prosthetist Orthotist (CPO)).....	72
Participant 4: Rick (Certified Prosthetist Orthotist).....	73
Participant 5: Yolanda (Certified Prosthetist Orthotist).	74
<i>Chapter Summary.....</i>	75
<i>Chapter 5: Quantitative Research Findings and Discussion.....</i>	77
Hypotheses to address Aim 1	77
<i>Descriptive statistics.....</i>	77
Comparing body image and self-esteem across the two groups.....	81
Body Image Scores	81
Self-Esteem Scores	82
<i>Discussion of Results.....</i>	83
Interesting Additional Trends and Visual Observations.....	86
<i>Chapter Summary.....</i>	93

<i>Chapter 6: Findings and Discussion from Qualitative Interviews</i>	94
 <i>Findings from Qualitative Research: Healthcare Professionals and Patient</i>	
<i>Participants</i>	94
 Theme 1: Psychological Impact of Amputation	95
Theme 2: Identity, Body Image and Self-Perception	98
Theme 3: Coping Mechanisms	100
Theme 4. Role of Healthcare Professionals	103
Theme 5. Challenges Faced in the Post-Amputation Adjustment Process	105
5.1 Loss of Identity and Frustration as Core Post-Amputation Challenges	105
5.2 Dependence, Isolation, and Misunderstood Limitations Post-Amputation	107
5.3 Phantom Pain and Mental Resilience in Post-Amputation Recovery	108
5.4 Redirection of Life Goals and Physical Limitations in Post-Amputation Experience.....	109
5.5 Psychosocial Impact and the Role of Social Environment in Post-Amputation Recovery....	111
5.6 Early-Life Trauma, Identity Disruption, and Long-Term Psychological Adjustment	112
5.7 Loss of Autonomy, Emotional Trauma, and Social Rejection in Post-Amputation Adjustment	
.....	114
 Theme 6. Healthcare and Rehabilitation	116
6.1 Collaboration and the prosthetist's role.	116
6.2 Patient trajectories and personalised pathways	119
6.3 Access and system constraints.	121
6.4 Psychological readiness and prosthetic fitting	121
6.5 Traumatic versus elective pathways.....	122
 Theme 7. Long-Term Adaptation	123
7.1 Patients' lived experiences	123
7.2 Integrative evidence.	125
 Theme 8. Call for Systemic-Change	125
8.1 Mental Health as a Core Component of Care	126

8.2 Holistic and Individualised Rehabilitation Models.....	128
8.3 Early Intervention and Informed Support.	129
8.4 Peer Mentorship and Community-Based Support	130
8.5 Public Awareness and Social Inclusion.....	131
<i>Chapter Summary.....</i>	<i>133</i>
<i>Chapter 7: Conclusion and Recommendations</i>	<i>134</i>
Summary of Findings.....	134
Significance of the Study.....	139
<i>Strengths and Limitations of the Study.....</i>	<i>140</i>
Strengths	140
Limitations	141
<i>Personal Reflection.....</i>	<i>142</i>
<i>Recommendations for future research.....</i>	<i>144</i>
<i>Conclusion.....</i>	<i>145</i>
<i>List of References.....</i>	<i>147</i>
<i>Appendices.....</i>	<i>185</i>
Appendix A: Unisa Ethics Clearance Certificate	185
Appendix B: Qualitative Interview Questions.....	187
Appendix C: Permission letter to conduct research.....	188
Appendix D: Information and Informed Consent Form – Post-Traumatic Amputee Patients	191
Appendix E: Information And Informed Consent Form – Healthcare Professionals	195
Appendix F: Participant Information Sheet – Post-Traumatic Amputee Patients	199

Appendix G: Participant Information Sheet – Healthcare Professionals	203
Appendix H: Turnitin Digital Receipt	207

List of Tables

Table 4.1: Introducing the quantitative research participants	60
Table 4.2: Patients	61
Table 4.3: Healthcare Professionals	70
Table 5.1: Participant Demographics & Characteristics	78
Table 5.2: MBRSQ Body Image Levels Among Trauma-Amputee Participants	80
Table 5.3: Self-Esteem Levels Among Trauma-Amputee Participants	80
Table 5.4: Self-Esteem Scores by Cause of Amputation	81
Table 5.5: Results of Body Image Scores between Participants in Group 1 and Group 2	81
Table 5.6: Results of Self-Esteem Scores between Participants in Group 1 and Group 2	82
Table 5.7: Key for the terms used in the titles of the graphs	86
Table 6.1: Themes uncovered from interviews with patients and healthcare professionals ..	94

List of Figures

Figure 3.1: Research Process	42
Figure 5.1: Age, Gender, Race	83
Figure 5.2: Cause of Amputation, Psychological Counselling, Self-Esteem Level	83
Figure 5.3: Likert scores averaged across survey answers across Age groups	87
Figure 5.4: Likert scores averaged across survey answers across years since amputation ...	87
Figure 5.5: Likert scores averaged across survey answers across attendance of psychotherapy	88
Figure 5.6: Likert scores averaged across survey answers across Gender	88
Figure 5.7: Likert scores averaged across survey question answers that were focused on Appearance and Grooming	89

Figure 5.8: Likert scores averaged across survey question answers that were focused on Body Image & Weight Concerns	90
Figure 5.9: Likert scores averaged across survey question answers that were focused on Exercise/Sport Involvement & Priority	90
Figure 5.10: Likert scores averaged across survey question answers that were focused on Health Awareness & Lifestyle	91
Figure 5.11: Likert scores averaged across survey question answers that were focused on Overall Appearance Rating	91
Figure 5.12: Likert scores averaged across survey question answers that were focused on Physical Fitness and Health	92
Figure 5.13: Likert scores averaged across survey question answers across all survey answers	92

Chapter 1: Introduction

Post-traumatic limb amputation and its physical, social, emotional, and psychological consequences cause significant changes in a patient's everyday life (Roşca et al., 2021). This chapter proceeds with an introduction to the study, and contextual background on amputation, describing the South African environment in which traumatic amputations occur, outlining the causes and prevalence of limb loss, and detailing its psychological consequences. It examines why psychological intervention contributes to improved self-esteem and body-image outcomes among post-trauma amputee patients in South Africa and explores the lived experiences of individuals navigating recovery with or without access to psychological care. Thereafter, the research problem and rationale are introduced, followed by the study's research questions, aims, and objectives. The chapter concludes with the researcher's positionality and an outline of the dissertation structure.

Introduction to the study

Amputation is a significant biomedical and psychosocial event, defined as the partial or complete removal of a limb or body segment through surgical or traumatic means (Sahu et al., 2016). Globally, amputations arise from diverse etiologies, with the most common being vascular disease (particularly diabetes-related complications), malignancies, congenital abnormalities, infections, and traumatic injuries (Kaur et al., 2023; Ziegler-Graham et al., 2008). Although surgical amputation is often performed as a life-saving intervention, its consequences extend far beyond the immediate operative context and require extensive rehabilitation to restore optimal functioning and quality of life (Department of Veterans Affairs & Department of Defence, 2024). For many individuals, amputation marks the beginning of a long-term adjustment process that encompasses physical mobility, emotional stability, social reintegration, and reconstructive identity work.

The global burden of limb loss is substantial. Recent epidemiological estimates suggest that more than one million major limb amputations occur annually worldwide, with prevalence and incidence disproportionately higher in low- and middle-income countries where preventable causes such as infection, peripheral vascular disease, and trauma remain common (Moxey et al., 2010; Narres et al., 2020). Advances in medical technology, prosthetic engineering, and rehabilitative sciences have significantly improved functional outcomes for many amputees, yet disparities persist across geographic, economic, and health-system contexts. These inequities often shape both the availability and quality of post-amputation rehabilitation, contributing to variable long-term outcomes across different regions and patient populations (Cain et al., 2025).

Psychologically, amputation is widely recognised as a multidimensional loss encompassing not only the physical absence of a limb but also disruptions to self-image, autonomy, and social roles. Research consistently demonstrates that amputees may experience grief, body image disturbance, depression, anxiety, phantom limb pain, and challenges in self-esteem as they adapt to their altered physical state and shifting social identity (Horgan & MacLachlan, 2004; Sjö Dahl et al., 2021). Personal resilience, social support, cultural beliefs, and access to specialised rehabilitative services, including psychological intervention, shape these responses. For many individuals, adjustment is a dynamic, non-linear process influenced by ongoing interactions between physical recovery, emotional regulation, and environmental demands (Atherton & Robertson, 2006; Panyi & Lábadi, 2015).

Post-trauma amputation constitutes a profound and often life-altering event that disrupts physical functioning, psychological stability, personal identity, and social participation. In South Africa, where rates of traumatic injury remain disproportionately high due to road-traffic incidents, violence, and limited access to specialised trauma care, the

consequences of limb loss extend far beyond the immediate medical intervention (Norman et al., 2007; Wiener, 2022). Individuals must negotiate challenging rehabilitation trajectories defined not only by physical recovery but also by the emotional and psychological reconstruction that follows sudden limb loss (Govender, 2011). Amputation is widely understood as a traumatic experience that may evoke grief, distress, altered self-concept, and significant changes in body image and self-esteem (Sahu et al., 2016).

Although biomedical rehabilitation services in South Africa are well established, psychological intervention remains inconsistently integrated into standard post-amputation care pathways (Wallis, 2011). Despite the relatively high incidence of traumatic amputations in South Africa, psychological treatment guidelines remain limited, and rehabilitation often focuses primarily on physical recovery (Gailey et al., 2020; Kashfi et al., 2021; Spyrou & Lowe, 2021). This absence persists despite extensive evidence demonstrating the psychological burden experienced by amputees, including heightened vulnerability to depression, anxiety, social withdrawal, and symptoms of post-traumatic stress disorder (Bhuvaneshwar et al., 2007; Mohamed et al., 2022). The gap between physical and psychological rehabilitation services reveals an urgent need to explore how psychological support, or the absence thereof, shapes amputee recovery outcomes (Wallis, 2011).

Amputation in the South African Context

South Africa currently lacks a national registry documenting limb-loss data, causes, or patient outcomes. This absence impedes the development of evidence-based policies and hinders the monitoring of long-term rehabilitation trends. Available studies are often small, outdated, or geographically restricted (Godlwana, 2008; Naidoo & Ennion, 2019; Norman et al., 2007).

Furthermore, the country faces high rates of traumatic injury due to violence and road-traffic accidents, contributing significantly to limb-loss prevalence. There is no direct

data on limb loss, but the high volume of violence and road traffic incidents implies significant traumatic injury leading to long-term disabilities (Norman et al., 2007). Wiener (2022) reports that, within South African hospital settings, vascular injuries frequently arise as secondary complications of automobile collisions, mining-related incidents, and industrial accidents.

Furthermore, the country faces high rates of traumatic injury from violence and road traffic accidents, which contribute significantly to limb loss prevalence. However, there is no direct data on limb loss, but the high volume of violence and road traffic incidents implies significant traumatic injury leading to long-term disabilities (Norman et al., 2007). Wiener (2022) reports that, within South African hospital settings, vascular injuries frequently arise as secondary complications of automobile collisions, mining-related incidents, and industrial injuries. International literature also highlights that trauma remains a major cause of amputation in many low- and middle-income countries where emergency care resources are limited (McDonald et al., 2021). The lack of comprehensive data further underscores the importance of research focused on patient experiences, psychological outcomes, and rehabilitation needs.

Causes and Prevalence of Amputation

While global trends indicate an increase in diabetes-related amputations, trauma continues to account for a substantial proportion of limb-loss cases in many African countries. Studies from Nigeria and Kenya report trauma-related amputations ranging between 20% and 37% of cases (Nwosu et al., 2017; Odatuwa-Omagbemi & Adjiki, 2012; Ogeng'o et al., 2009). In South Africa, smaller regional studies indicate that traumatic amputations remain common, particularly in provinces with high road-traffic injury rates and shortages of orthopaedic specialists (Ennion & Manig, 2018).

Given that road-traffic fatality rates in South Africa exceed the global average (World Bank, 2022), trauma-related amputations remain a significant public health concern. However, the scarcity of contemporary South African research on trauma-related limb loss highlights the need for more robust empirical work.

Psychological and Physical Impact of Amputation

The consequences of limb loss extend beyond functional impairment, encompassing complex emotional, psychological, and social effects. Survivors often experience grief, shock, altered body image, diminished mobility, and reduced independence (Fredericks & Visagie, 2013). Psychological burdens may include anxiety, depression, PTSD, financial strain, and social stigmatisation (Belon & Vigoda, 2014; Fredericks & Visagie, 2013).

Despite these profound challenges, psychological interventions are seldom included in routine rehabilitation pathways (Gailey et al., 2020; Spyrou & Lowe, 2021). Studies show that the majority of amputees receive little or no psychological treatment, contributing to poorer rehabilitation outcomes and diminished quality of life (Fredericks & Visagie, 2013; Wallis, 2011).

Theoretical perspectives such as the social model of disability emphasise that rehabilitation must facilitate full social and economic participation rather than focusing narrowly on physical recovery (Fredericks & Visagie, 2013). Integrating psychological care into post-amputation rehabilitation is essential for achieving such goals (Wallis, 2011).

Problem Statement and Rationale

Traumatic amputation is significantly more prevalent in South Africa than in many other regions, exacerbated by high rates of violence and road-traffic injuries (Norman et al., 2007; Wiener, 2022). Yet psychological intervention is not standardised within rehabilitation services, and contemporary studies exploring its long-term impact remain limited (Godlwana et al., 2008; Mohamed et al., 2022; Naidoo & Ennion, 2019).

Existing research highlights strong associations between traumatic amputation and psychiatric conditions, including post-traumatic stress disorder (PTSD), depression, and anxiety, with PTSD affecting up to 40% of traumatic upper-limb amputees (Bhuvaneswar et al., 2007; Steensma, 1959). Furthermore, amputees tend to report lowered self-esteem and negative body-image perceptions, which significantly affect psychosocial adjustment and quality of life (da Cunha et al., 2018).

Given the lack of standardised psychological care and the limited availability of South African literature, there is a clear need for research investigating the role of psychological intervention in shaping rehabilitation outcomes. In view of the above, this study examined 1) the extent to which psychological intervention contributes to improved self-esteem and body-image outcomes among post-trauma amputee patients in South Africa and 2) explores the lived experiences of individuals navigating recovery with or without access to psychological care. By foregrounding the subjective meanings amputees assign to limb loss, adaptation, and identity reconstruction, this dissertation highlights why psychological intervention should be considered an essential component of holistic rehabilitation.

Primary Research Question and Aims

The primary research question that guided the study was: Does psychological intervention influence self-esteem and body image outcomes among post-trauma amputee patients in South Africa?

To address the research question, the following aims were developed:

1. To compare levels of self-esteem and body image among post-trauma amputee patients who have received psychological intervention and those who have not.
2. To explore amputees' subjective perceptions of self-esteem and body image following traumatic limb loss.

A sequential explanatory mixed-methods design was employed, comprising an initial quantitative phase, followed by a qualitative phase to contextualise and deepen the understanding of the quantitative results.

Researcher Positionality

The researcher has more than 15 years of experience in the healthcare and prosthetics sector, including extensive work with amputee patients in South Africa and abroad. These experiences highlighted consistent gaps in psychological support for amputees and informed the researcher's motivation to pursue formal training in psychology. The researcher acknowledges that this professional background shaped the study through a deep awareness of amputees' challenges and a commitment to improving holistic rehabilitation practices.

Definitions of Key Concepts

Amputation: Sahu et al. (2016) define a limb amputation as an irreversible elective or emergency surgical procedure that is performed when a limb cannot be medically saved otherwise. Some of the causes of amputation include trauma, infections, neoplasms, diabetes, or vascular disease. An amputation could be minor, such as a single finger digit, or it can be an entire leg or arm, or even several limbs, depending on the cause of amputation. According to Sahu et al. (2016, p. 4), an amputation is a pointedly traumatic event which could be "equated with the loss of a spouse, loss of one's perception of wholeness, symbolic castration, and even death".

Body image: is a complicated concept about a person's perceptions and feelings of their body. Body-image consists of many sub-constructs, including perception and attitudinal body image factors such as cognitive appraisals, associated emotions and body-image investment (Cash & Smolak, 2011; Cash & Szymanski, 1995). Albert et al. (2022), define body image as the way someone perceives their physical appearance. Body image has also been correlated with physical activity in adolescents (Karchynskaya et al., 2022), and on the

quality of a marriage and depression in patients with psoriasis (Hassani et al., 2021).

Disturbance in how the body is perceived is a consequence of social ideals emphasising vigour and physical form. For this reason, amputation may be considered as a sign of ineptness (Holzer et al., 2014).

Psychological intervention: According to the APA (2014) guidelines, psychological intervention is explained as a planned and controlled method used by qualified professionals to treat psychological, emotional, or behavioural issues in individuals or groups. The goal of such an intervention could include relieving suffering, advancing well-being and aiding personal growth. These interventions could include psychotherapy, cognitive behavioural therapy or counselling in a group or individual basis. For the purpose of this study, psychological intervention will not exclude any of these methods, and patients will be able to indicate the relevant method in the survey/interview.

Rehabilitation in the context of traumatic amputation refers to a multidisciplinary process of interventions aimed at optimizing physical, functional, and psychosocial recovery following limb loss. It begins as early as possible (often pre- or immediately post-amputation), focusing on wound healing, residual limb care, pain management, strength and mobility restoration, prosthetic fitting and training (when applicable), and adaptation to maximize independence, quality of life, and return to daily activities, work, or community participation (World Health Organization, 2024; U.S. Department of Veterans Affairs, 2019).

Residual limb (also commonly referred to as the stump or residuum) is the portion of the limb or appendage that remains attached to the body after an amputation has occurred (A.D.A.M. Medical Encyclopedia, 2024). In the context of traumatic amputation, it consists of the surviving bone, muscle, soft tissues, skin, nerves, and vasculature proximal to the level of severance or surgical completion. This remaining segment serves as the critical interface

for prosthetic fitting, weight-bearing, mobility, and sensory feedback when a prosthesis is used.

Traumatic amputation is the sudden loss of a body part, most commonly a limb or digit such as a finger, toe, hand, foot, arm, or leg, resulting directly from an accident, injury, or external trauma (A.D.A.M. Medical Encyclopedia, 2024). This injury is distinct from elective/therapeutic amputations performed for conditions like severe vascular disease, infection, or malignancy. Traumatic amputations could be classified as complete (full severance with no remaining soft-tissue connection between the detached part and the body) or partial/incomplete (some anatomical structures like skin, muscle, tendons, or ligaments remain attached, which may allow for potential replantation or salvage depending on damage severity) (A.D.A.M. Medical Encyclopedia, 2024; U.S. Department of Veterans Affairs, 2019).

Common mechanisms include high-energy trauma from motor vehicle accidents, industrial/power tool incidents, farming accidents, explosions (military or civilian), firearms, severe crush injuries, avulsions, electrocution, or burns (A.D.A.M. Medical Encyclopedia, 2024; Clasper & Ramasamy, 2013). These often cause extensive damage to bones, vasculature, nerves, and soft tissues, leading to risks such as massive haemorrhage, hypovolemic shock, infection, compartment syndrome, and the frequent need for emergent surgical intervention, including primary amputation when limb salvage is impossible or life-threatening (Clasper & Ramasamy, 2013). Beyond physical consequences, traumatic amputation frequently leads to profound functional impairment, prosthetic dependency, chronic pain (including phantom limb pain), heterotopic ossification, stump complications, and significant psychological sequelae such as posttraumatic stress disorder (PTSD), depression, anxiety, or acute stress reactions (American Psychiatric Association, 2013; U.S. Department of Veterans Affairs, 2019).

Self-esteem: is a person's own perception of their self-worth. It is an indication about the evaluation a person has about themselves and affects their self-confidence as well as their emotional well-being (Baumeister et al., 2003). Self-esteem refers to the orientation toward oneself, whether positive or negative, and is a general estimation of one's value. Self-esteem includes perceptions and emotions like achievement, hopelessness, pride and humiliation (Holzer et al., 2014).

Chapter Outline

Chapter 1 introduced the topic of traumatic limb amputation and its psychological implications, provided the study's rationale, research questions, and aims.

Drawing on international and South African literature, *Chapter 2* provides a comprehensive review of the extant literature on traumatic limb amputation, psychological interventions, body image, self-esteem, and rehabilitation models.

Chapter 3 provides a discussion of the research design and methods, including the sampling strategies, data collection techniques, and analytical methods applied. This chapter further addresses the ethical considerations and the measures taken to ensure the research's integrity and credibility.

Chapter 4 provides demographic information on participants who completed the surveys in the quantitative phase and introduces those interviewed in the qualitative phase.

Chapter 5 outlines the quantitative research results and presents the analysis and interpretation of the data.

Chapter 6 presents the findings and discussion of the qualitative research data, with main themes and related sub-themes presented.

Chapter 7 concludes the dissertation with an integrated discussion of the study's findings, an evaluation of the study's strengths and limitations, and recommendations for future research.

Chapter Summary

This chapter introduced the topic of traumatic amputation and its psychological implications within the South African context. It briefly reviewed the background, prevalence, causes, and consequences of limb loss, highlighting gaps in existing psychological care and literature. The research problem, rationale, aims, objectives, and methodological orientation were presented, along with a reflection on the researcher's positionality.

Chapter 2: Literature Review

Limb amputation, particularly when resulting from traumatic events, represents a profound disruption to an individual's physical, psychological, and social functioning. The literature consistently highlights the multifaceted consequences of amputation, including elevated risks of depression, anxiety, post-traumatic stress disorder (PTSD), and body image disturbances (Alessa et al., 2022; Roşca et al., 2021). These psychological sequelae are shaped by the nature and timing of the amputation, the individual's psychosocial context, and the availability of support systems (Fazilari et al., 2024; Mohamed et al., 2022). This chapter critically reviews existing literature on the psychological impact of traumatic limb amputation, with particular emphasis on self-esteem, body image, and the role of psychological interventions in rehabilitation. It also explores the influence of social support, healthcare system barriers, and healthcare professionals' perspectives on shaping rehabilitation outcomes. By synthesising global and regional studies, including those from South Africa and other low-resource settings, this review aims to contextualise the challenges and opportunities in trauma amputee care and identify gaps that inform the current study.

Contextualising traumatic amputation and the psychological sequelae

The Psychological Burden of Limb Amputation: An Overview

Limb amputation is a life-altering medical intervention that extends beyond physical loss, often triggering profound psychological and social consequences. The psychological impact of amputation encompasses a spectrum of emotional responses, mental health disorders, and challenges in social reintegration, all of which can significantly impair an individual's quality of life (QoL). Fazilari et al., (2024) found that the psychological consequences of limb amputation vary significantly depending on whether the procedure is necessitated by chronic illness or traumatic injury. Each pathway presents distinct emotional, cognitive, and social challenges, shaped by the timing of the amputation, the individual's

psychosocial context, and the nature of the precipitating event. Understanding these differences is essential for developing tailored psychological support and rehabilitation strategies. These outcomes are shaped by a complex interplay of factors, including the etiology and level of amputation, pre-existing psychological resilience, and the availability of social and clinical support systems (Roşca et al., 2021). Empirical evidence indicates that individuals who undergo amputation are at elevated risk for psychological distress, with depression, anxiety, and post-traumatic stress disorder (PTSD) being among the most prevalent conditions (Alessa et al., 2022). Phantom limb pain and altered body image further exacerbate emotional suffering, often leading to social withdrawal and diminished self-esteem. The psychological burden is not uniform; it varies according to the level of amputation, with some studies suggesting higher anxiety levels in transtibial amputees compared to transfemoral cases (Roşca et al., 2021). Social adaptation post-amputation is equally critical. Many patients report feelings of fear, helplessness, and social stigma, which hinder their reintegration into community life. The trajectory of psychological adjustment ranges from initial denial and emotional turmoil to eventual acceptance, contingent upon individual coping mechanisms and external support (Alessa et al., 2022).

Regional Prevalence and Data Gaps (South Africa and the Global South)

Despite previous studies focused on obtaining trends and prevalence rates of lower limb amputations, there remains a dearth of data in South Africa (Godlwana, 2008). However, from some of the unpublished literature reviewed, it was determined that 50% to 57% of major lower-limb amputations were a result of trauma (Godlwana et al., 2008). Additionally, 50% of patients in this group suffered from loneliness, limitations in their rehabilitation journey, loss of income, psychological difficulties such as substance abuse and feelings of worthlessness, and, in some cases, rejection by family members and friends. In a recent Kenyan study, Mohamed et al. (2022) noted that amputees typically suffer from a variety of

emotional difficulties and mental health disorders, such as negative body image, depression and anxiety, and post-traumatic stress disorder (PTSD). Despite the high rates of amputations in Kenyan hospitals, Mohamed et al. (2022) noted a lack of available data regarding the incidence of these disorders amongst amputees. They further pointed out that psychological suffering could be eased if patients are diagnosed and treated early on. Losing a limb not only causes anguish, but it intensifies self-consciousness which in turn has an impact on the person's physical abilities, sexuality and livelihood, resulting in psychosocial impairment. Traumatic amputation could be equated with extreme examples of loss, like grief, separation, divorce, castration anxiety, as well as a disjointed opinion of yourself, which could lead to significant psychological impairment and a poorer quality of life (Mohamed et al., 2022). Additionally, there appears to be a shortage of data regarding the prevalence of trauma-related amputations globally, including in India (Sahu, 2016), Tanzania (Chalya, 2012), Nigeria (Amadi, 2017), and the USA (Barmparas, 2010; Melcer, 2017).

Pre-Operative Preparation, Quality of Life, and Caregiver Strain

Family involvement and multidisciplinary rehabilitation teams have been shown to play a pivotal role in facilitating emotional recovery and enhancing functional outcomes. Quality of life following amputation is closely linked to psychological well-being and prosthetic satisfaction. Studies demonstrate that individuals who report higher levels of psychological adjustment and prosthetic use also exhibit improved scores on both physical and mental health dimensions of QoL (Alessa et al., 2022). On the other hand, untreated psychological disorders can impair physical functioning and self-perceived health, further diminishing QoL.

Despite the known psychological ramifications, preoperative psychological preparation remains insufficient. Patients frequently report inadequate emotional support and limited information before surgery, which can hinder post-operative adjustment (Gonzalez

Aguado et al., 2024; Loyal & Hanna, 2024). Healthcare professionals, particularly those within multidisciplinary teams, are instrumental in delivering targeted psychological interventions during both pre- and post-operative phases (Loyal & Hanna, 2024). Moreover, the psychological toll of amputation extends to caregivers, who often experience significant emotional and physical strain. Addressing caregiver burden is essential for holistic rehabilitation, as caregivers are integral to the patient's recovery journey (Scholten et al., 2021).

Chronic-Illness Amputation versus Trauma-Related Amputation: Divergent Trajectories

Amputations resulting from chronic conditions such as diabetes or peripheral vascular disease often follow a prolonged period of physical decline. Patients in this category frequently experience heightened emotional distress, including depression, anxiety, and feelings of helplessness, which are compounded by the chronic nature of their illness (Bonilla-Flores, 2024; Lange & Heuft, 2001). These psychological challenges are further intensified by the need to manage both the amputation and the underlying disease. Body image disturbances and diminished self-esteem are common among illness-related amputees, particularly due to the visible and functional changes to their bodies (Harissya et al., 2023). The adaptation process is often lengthy and complex, requiring patients to reconcile their new physical reality with ongoing disease management. This dual burden can lead to prolonged psychological adjustment and increased vulnerability to emotional disorders (Lange & Heuft, 2001).

Trauma-related amputations, often resulting from accidents or combat injuries, are typically sudden and unexpected. This abrupt loss can trigger acute psychological responses, most notably post-traumatic stress disorder (PTSD), especially among military personnel and individuals exposed to high-impact trauma (Melcer et al., 2017). Symptoms such as

flashbacks, hypervigilance, and emotional numbing are common and require specialised therapeutic interventions. In addition to PTSD, traumatic amputees may experience pathological grief, mourning the limb as they would a loved one. This grief is often exacerbated when replantation is not possible or when critical body parts are involved (Pomares et al., 2019). Rehabilitation outcomes in trauma patients tend to be more favourable when amputation is performed early, as delayed procedures are associated with poorer psychological and functional recovery (Hoffmann & Rack, 2003).

Comparative studies reveal that trauma-related amputees often achieve better functional outcomes than those who undergo limb salvage procedures, particularly in military contexts where physical rehabilitation is intensive and well-resourced (Doukas et al., 2013; Ladlow et al., 2016). These improved outcomes can positively influence psychological well-being, enhancing mobility and social reintegration. However, the psychological support needs differ markedly between the two groups. Trauma patients typically require intensive interventions to address PTSD and grief, while illness-related amputees benefit from ongoing support for chronic emotional distress and body image issues (Lange & Heuft, 2001). Social support is a critical determinant of psychological adjustment in both groups, with strong correlations between perceived support and quality of life among amputees (Pomares et al., 2020).

Psychological Sequelae of Post-Traumatic Limb Loss: Trauma, Amputation, and Post-Traumatic Stress Disorder (PTSD)

The link between traumatic amputation and consequential PTSD is well documented in numerous studies (Bhuvaneswar et al., 2007; Mohamed et al., 2022; Pomares et al., 2019; Steensma, 1959). Findings from these studies indicate that up to 40% of traumatic upper-limb amputees develop PTSD, which significantly impacts social and occupational reintegration post-amputation. Despite growing research interest in psychological outcomes following

traumatic limb loss, evidence regarding the prevalence of anxiety and depression among post-traumatic amputees remains limited, as highlighted in a systematic review by McKechnie and John (2014). They further indicated that research identifies more of what is unknown about traumatic amputation than what is known. In addition, no retrospective studies have been conducted regarding the severity of anxiety and depression measured at various time points post-amputation. It is further noted that amputee patients often experience anxiety, depression, and PTSD, with PTSD confirmed by two-thirds of the patients, and anxiety and depression established in more than 75% of patients (Sahu et al., 2017).

Higher depression rates were reported in developing countries, where limited social welfare support may exacerbate psychological vulnerability, compared with prevalence rates observed in more resourced and developed nations (Cavanagh et al., 2006; Singh et al., 2009; Vázquez et al., 2018). Patients with traumatic limb amputation experienced a higher occurrence of PTSD than non-traumatic amputee patients (for example, due to disease-related factors) (Bhuvaneswar et al., 2007).

These results echo Steensma (1959) who found that patients with limb loss, who had undergone limb amputation due to congenital deformities or disease, were able to recover sooner, both physically and socially, as compared to patients who suffered limb loss because of trauma. This suggests that non-traumatic amputee patients were better able to adjust emotionally to the physical disability, unlike those who underwent traumatic and sudden limb loss. Steensma (1959) further indicated that recovery, in part, is associated with home and social surroundings. For example, congenitally impaired patients would have had their environment adjusted to their disability and physical needs before the limb removal. The lack of pre-limb loss adaptation, in the case of traumatic limb amputation, contributes to the potential development of PTSD and other psychological difficulties (Nwosu et al., 2017).

Body Image and Self-Esteem

As indicated, limb amputation is regarded as both a physical and a psychologically traumatic event. The psychological trauma associated with limb amputation is further characterised by the loss of a part of oneself over which one has no control, and subsequent changes to a person's self and body image and self-esteem (Peroni et al., 2017).

Body image is a complex concept that refers to a person's perceptions and feelings about their body. Body image consists of many sub-constructs, including perception and attitudinal body image factors such as cognitive appraisals, associated emotions, and body-image investment (Cash & Szymanski, 1995). Albert et al. (2022) define body image as the way someone perceives their physical appearance. Body image has been associated with levels of physical activity in adolescents (Karchynskaya et al., 2022). Body image further influences marital quality and depressive symptoms both directly and indirectly among individuals living with psoriasis (Hassani et al., 2021). Disturbances in how the body is perceived are a consequence of social ideals emphasising vigour and physical form. For this reason, amputation may be considered as a sign of ineptness (Holzer et al., 2014). Body image, thus, is a multidimensional psychological construct encompassing individuals' perceptions, attitudes, and behaviours toward their physical appearance and bodily function. It includes both perceptual elements, such as the accuracy of body-size estimation, and attitudinal components, including satisfaction with appearance, emotional responses, and the degree of importance placed on physical aesthetics (Cash, 2012; Cash & Pruzinsky, 2002). On the other hand, self-esteem refers to an individual's overall evaluation of their self-worth and is widely recognised as a core component of psychological health (Orth & Robins, 2014). Although distinct in definition, body image and self-esteem are closely interrelated, with dissatisfaction in body perception often linked to reduced self-esteem, particularly in sociocultural environments that emphasise narrow standards of beauty.

Self-esteem is defined as a particular assessment of one's attitude towards oneself, both positive and negative, in a variety of conditions (Yetim, 2022). Self-esteem refers to the orientation toward oneself, whether positive or negative, basically a general estimation of one's value. Self-esteem encompasses perceptions and emotions such as achievement, hopelessness, pride, and humiliation (Holzer et al., 2014). A person with low self-esteem might choose to focus excessively on personal failures or shortcomings, minimising attention to successes. Yetim (2022) noted that a well-established body of research connects self-esteem with stressful life events and mental health problems through both internalising and externalising problems. Poor self-esteem, therefore, manifests as depression, anxiety, stress and traumatic stress disorders (Holzer et al., 2014; Yetim, 2022).

Therefore, body image points to an individual's internal view of their external appearance, whereas self-esteem is a more general subjective sense of personal worth or value (Yetim, 2022).

The constructs of body image and self-esteem are deeply intertwined, reflecting how individuals perceive their physical appearance and evaluate their self-worth. Theoretical frameworks and empirical studies have consistently emphasised the influence of psychological, societal, and individual factors on these constructs. The relationship between body image and self-esteem is not uniform; it varies across age groups, genders, and cultural contexts, necessitating a nuanced understanding for effective intervention (Liu & Tang, 2024). Socio-demographic variables such as gender, age, and cultural background also play a critical role. Women generally report higher levels of body dissatisfaction than men, although cultural movements promoting body positivity have shown promise in mitigating these effects (Muchesi et al., 2024; Vankrothu et al., 2024).

Empirical research has demonstrated a consistent positive correlation between body image satisfaction and self-esteem (Fiqroh & Setiyowati, 2023; Liu & Tang, 2024; Muchesi

et al., 2024; Munandar & Nabilla, 2023; Wahyuni & Auriella, 2021). Individuals who report higher satisfaction with their body image tend to exhibit higher self-esteem, as measured by instruments such as the Body Image Satisfaction Scale (BISS) and the Rosenberg Self-Esteem Scale (RSES) (Liu & Tang, 2024; Munandar & Nabilla, 2023). Among young adults, this relationship is particularly pronounced, with media exposure, peer influence, and interpersonal relationships contributing significantly to body image concerns and fluctuations in self-esteem (Vicente-Benito, et al., 2023). In older adults, body image remains a relevant factor in self-esteem, although the emphasis often shifts from aesthetic appearance to physical functionality. This shift is especially evident among men, who may prioritise bodily competence over visual appeal as they age (Guegan, 2006).

Several psychological theories offer insight into the mechanisms underlying body image and self-esteem. *Objectification Theory* and *Social Comparison Theory* suggest that societal and media-driven ideals lead individuals, particularly women, to internalise unrealistic beauty standards, resulting in body dissatisfaction and diminished self-esteem (Lee & Lee, 2017). These theories highlight the role of external comparisons and perceived social expectations in shaping self-perception. *Self-Discrepancy Theory* further explains that inconsistencies between an individual's actual self, ideal self or ought self can lead to emotional distress and negative body image. This framework underscores the psychological tension created by unmet personal and societal standards (Vartanian, 2012).

Recent studies have explored the role of perceived power in enhancing body image and self-esteem. Individuals who feel a greater capacity to influence others often report higher body satisfaction, with self-esteem acting as a mediating variable in this relationship (Körner & Schütz, 2023). This suggests that psychological empowerment may buffer against negative body image.

Understanding the dynamic relationship between body image and self-esteem is essential for designing effective psychological interventions. Programmes that promote body acceptance, challenge harmful beauty norms, and foster self-esteem have been shown to improve body image outcomes (Alessa, et al., 2022).

Body Image and Self-Esteem in Populations with Disabilities

Among individuals with physical disabilities, the relationship between body image and self-esteem is often more complex. Physical impairments may alter bodily appearance or function in ways that diverge from societal ideals of attractiveness or competence, potentially leading to negative body image and diminished self-esteem (Taleporos & McCabe, 2002). Research has shown that both congenital and acquired disabilities can pose significant challenges to body acceptance, often exacerbated by social stigma, limited autonomy, and the lack of representation in mainstream media (Bogart et al., 2019; de Paula Santos, 2023; Rumsey & Harcourt, 2004; Thompson & Kent, 2001). These societal and environmental factors may contribute to feelings of inadequacy and social isolation, further impacting psychological well-being. Despite these challenges, several protective factors have been identified that promote healthier body image and self-esteem among people with disabilities. Supportive social networks, participation in inclusive activities such as adaptive sports, and the cultivation of psychological resilience have all been shown to buffer against negative self-perceptions (Mira et al., 2023). Moreover, psychological interventions that incorporate cognitive restructuring, self-compassion practices, and media literacy education have demonstrated efficacy in enhancing body appreciation and fostering a more positive sense of self-worth (Cash, 2012; Grogan, 2016).

Thus, while body image and self-esteem are conceptually distinct, they are deeply interconnected and significantly influenced by the lived experiences of individuals with disabilities. Addressing the psychological needs of this population requires a comprehensive

and context-sensitive approach that considers both individual factors and broader societal influences.

Amputations, due to traumatic events, frequently result in a series of complex psychological reactions in patients who initially tend to feel overwhelmed by not only the amputation but the psychiatric symptomatology as well (Mohamed et al., 2022). In addition, there exists a link between the body image and limb loss of an amputee patient, specifically regarding the distorted perceptions and general or social adaptation to prostheses. Given the limited physical abilities and mental health sequelae after amputations, the psychological aspects of rehabilitation, including the negative impact on body image, confidence, and quality of life, cannot be ignored (da Cunha et al., 2018). When considering the association of prosthesis use and body image, Burden et al. (2018) found a close link between reduced feelings of disgust and body image when seen in the context of amputation. Amputation resulted in self-stigmatisation, criticism, and discontent with the expectations amputee patients had of their bodies before and after amputation. These negative self-criticisms involved both what patients' bodies were functionally capable of and their physical appearance.

According to Holzer et al. (2014), amputation significantly impacts the affected individual's physique and perception of their body. As such, losing a limb disrupts the integrity and wholeness of the body, influencing the physical and psychological condition of patients living with limb loss. However, the use of prosthetic devices has been associated with improved psychological outcomes and enhanced social reintegration, as they contribute to increased mobility and self-esteem (Alessa et al., 2022; Gündüz et al., 2024).

Similarly, the effective use of prosthesis aided in creating a perception of a physical 'whole self' which improved body-image to some extent, however, the psychological vulnerability remained as a prosthesis does not form a permanent part of the body (Holzer et

al., 2014). Therefore, it seems that prosthetic use can either contribute to a sense of wholeness for amputee patients or adds to feelings of disgust and self-stigmatisation.

Holzer et al. (2014) evaluated body image and self-esteem in lower-limb amputees with the Multidimensional Body-Self Relations Questionnaire (MBSRQ), Rosenberg's Self-Esteem Questionnaire (RSE), and The Short Form (36) Health Survey (SF-36). Results suggested that body image and quality of life factors were much lower for amputees even though self-esteem levels remained similar to the non-amputees control group. However, what was thought-provoking was the complexity of responses across different subscales, such as amputation type, age group, fitness orientation, and general health. This indicated the difficulty in the classification and comparison of amputees in general and how easily a subcategory, like trauma amputation, could be neglected in favour of a more generalised approach to treatment. Because of the complexities regarding classification and standardisation in the measurement of body image and quality of life in amputee patients, the transferability of studies conducted in other countries is more intricate (Holzer et al., 2014).

Family and Social Support

The social environment is crucial to mental health recovery in patients suffering limb loss. The sudden changes and impact related to traumatic limb loss not only affect the patient, but also the family and friends, who are often suddenly placed in a caregiver situation. Tsoulou et al. (2019) reported a positive association between the anxiety scores of amputee patients and their caregivers. Similarly, Akodu et al. (2020) correlated care for an amputee with a psychological and financial burden, as well as physical and emotional stress on the relevant family member. These results correlate with older literature in that changes in family dynamics as a result of traumatic limb amputations do not only have a significant effect on the patient but also on their family (Horne & Neil, 2009).

Individuals who undergo amputation frequently experience a range of psychological difficulties, including depression, anxiety, and disturbances in body image, all of which can adversely affect interpersonal relationships and social engagement (Alessa et al., 2022; Fazilari et al., 2024). Social isolation is a commonly reported outcome, often stemming from both physical limitations and emotional distress (Gündüz et al., 2024; Valizadeh et al., 2014).

Family members frequently assume the role of primary caregivers, a responsibility that can introduce considerable emotional strain, financial burden, and shifts in family dynamics (Costa et al., 2020; Ohenewa et al., 2025). The caregiving experience is often characterised by high levels of stress and reduced quality of life, highlighting the need for targeted support interventions that address caregivers' mental health and social needs (Costa et al., 2020; Rodrigues et al., 2024). A supportive family environment has been shown to significantly influence amputees' psychological adjustment, providing both emotional reassurance and practical assistance during rehabilitation (Abouammoh et al., 2021; Gündüz et al., 2024).

Beyond the family unit, social support from peers, friends, and community networks plays a critical role in facilitating the coping process for amputees. This support may manifest through emotional encouragement, tangible assistance, and opportunities for social inclusion (Abouammoh et al., 2021; Valizadeh et al., 2014). Workplace accommodations and understanding further contribute to a sense of normalcy and purpose, aiding in the reintegration of amputees into professional environments (Valizadeh et al., 2014). Additionally, religious and spiritual frameworks have been identified as valuable coping mechanisms for both patients and caregivers, offering resilience and comfort in the face of adversity (Ohenewa et al., 2025).

The challenges faced by amputees and their families are multifaceted, encompassing economic hardship, disruptions to daily routines, and the ongoing demands of medical care

and rehabilitation (Grzebień et al., 2017; Ohenewa et al., 2025). Coping strategies vary widely; while some individuals may withdraw socially, others actively seek support.

Interventions that promote adaptive coping and provide psychoeducation have been shown to enhance resilience and improve psychosocial outcomes (Ohenewa et al., 2025; Rodrigues et al., 2024). Comprehensive care models that integrate psychological and social rehabilitation are essential in addressing the complex needs of both amputees and their caregivers (Fazilari et al., 2024).

Discrimination and Social Isolation

Grand et al. (1982) indicated that non-disabled persons demonstrated an aversion to intimate relationships with disabled persons, with amputees ranking very high on the list of disabilities. More recently, Khan et al. (2021) further found that patients not only experienced stigmatisation post-amputation but also diminished sexual well-being, with some patients expressing feelings of being *broken* and *unwanted*.

Unlike non-physical psychological trauma, an amputation is physically visible by both the patient and those with whom they interact, thus a constant reminder of past trauma. Furthermore, the physical visibility of amputation could result in the amputee patient being discriminated against and stigmatised (Khan et al., 2021). The amputee's environmental context has been highlighted as important in the coping and rehabilitation process, cited as contributing to social support and enhancing resilience in patients (Bhuvaneswar et al., 2007). Tailored cultural cognition is needed in the treatment regime, which trains patients to draw on social resources or defend against negative social influences (Bhuvaneswar et al., 2007). Major caveats remain relating to short and long-term coping strategies of amputees when dealing with discrimination, as well as family influence and societal support on the rehabilitation of amputees (da Cunha Bergo & Prebianchi, 2018). This frames an incomplete

understanding of how an integrated, tailored treatment regime involving not only the patient but also the family can significantly improve treatment outcomes.

Access and adherence to rehabilitation programmes

The Role of Adherence in Post-Amputation Rehabilitation Outcomes

Adherence to rehabilitation programmes plays a pivotal role in enhancing psychological outcomes among individuals who have undergone amputation (Bonilla-Flores, 2024). Rehabilitation extends beyond physical recovery, encompassing psychological support that fosters emotional stability, improved quality of life, and successful adjustment to post-amputation realities (Bonilla-Flores, 2024). Psychological barriers such as depression, anxiety, and diminished motivation can hinder participation in rehabilitation, but targeted interventions, particularly cognitive-behavioural therapy, have demonstrated efficacy in mitigating these challenges and promoting engagement (Mathur et al., 2024; Srivastava & Chaudhury, 2014). Early and sustained psychological support is essential for addressing prevalent mental health concerns, including body image disturbances (Fazilari et al., 2024). Structured psychotherapeutic approaches have shown superior outcomes in reducing psychological distress compared to conventional methods (Srivastava & Chaudhury, 2014). Barriers to treatment, such as mistrust of rehabilitation personnel, access to rehabilitation, linguistics, and socio-demographic characteristics, remain prevalent and were contraindicated to the generalised treatment regimens normally prescribed to trauma patients (American Psychological Association (APA), 2017).

Moreover, social and environmental factors, such as familial support and multidisciplinary care, significantly influence rehabilitation success by facilitating acceptance and adaptation (Godoy et al., 2022). Socio-economic variables, including financial limitations and health literacy, also affect adherence, underscoring the need for personalised rehabilitation strategies (Mathur et al., 2024).

Cognitive functioning further impacts rehabilitation engagement; deficits in attention, memory, and processing can impede progress, while cognitive screening and tailored interventions can enhance participation (Lombard-Vance, 2017). Long-term psychological outcomes are optimised through integrated care models that incorporate mental health services and robust support networks, enabling amputees to achieve psychological adjustment comparable to individuals with other serious injuries (Woodruff et al., 2017). Psychosocial elements such as perceived social support and hope are critical to positive adjustment and can be cultivated through comprehensive rehabilitation programs (Unwin et al., 2009).

Multidisciplinary and Interdisciplinary Care Models

For trauma amputees, commitment to and compliance with rehabilitation is essential to regain mobility, balance, and functional independence, ultimately improving quality of life and social reintegration (Esquenazi & DiGiacomo, 2001). Multidisciplinary teams, including physical, occupational, and recreational therapists, address the complex physical and psychological needs of amputees, enhancing rehabilitation outcomes (Keszler et al., 2020). Personalised plans that consider secondary conditions such as heterotopic ossification and low back pain further support adherence by tailoring interventions to each patient's goals and limitations (Keszler et al., 2020). Inpatient rehabilitation programmes offer structured, intensive care that significantly improves gait, balance, and overall functionality in both pre-prosthetic and post-prosthetic phases (Utiyama et al., 2022). These programmes promote faster recovery and sustained engagement in rehabilitation. Given the multifaceted nature of adherence, a holistic, multidisciplinary approach is essential to address the psychological, social, and cognitive dimensions of rehabilitation (Mathur et al., 2024). Nonetheless, disparities in healthcare access and individual variability in response to interventions highlight the need for ongoing research and adaptive strategies to meet the diverse needs of this population. Barriers such as limited access to resources, financial constraints, and

psychological challenges, including depression and adjustment disorders, remain challenges that can hinder adherence (Bespalkenko et al., 2020; Rivera & Pasquina, 2016). Addressing these through counselling, peer support, and adaptable care models is critical to maintaining engagement and ensuring successful rehabilitation.

Barriers to treatment and rehabilitation

Literature suggests that there are several factors which limit patients' access to healthcare services, such as insufficient policies and standards, negative attitudes towards healthcare services, insufficient resources and funding, a lack of consultation and service provision, a lack of accessibility to services, and limited patient involvement and lack of patient data (Naidoo & Ennion, 2019).

Fragmented and poorly coordinated policy environments continue to impede equitable access to prosthetic and rehabilitation services across multiple regions of the world. In Taiwan, for example, Lin and Liu (2024) highlighted how fragmented processes across application procedures, needs assessments, subsidy parameters, and reimbursement mechanisms undermine the effectiveness of prosthetic provision, ultimately generating adverse social and health outcomes for amputees. Similarly, in a qualitative study conducted across East, South, and Southeast Asian developing countries, Sayeed, Oakman, and Stuckey (2024) identified substantial regional policy barriers that restrict access to rehabilitation for individuals with lower-limb amputation. These barriers, rooted in weak or poorly adapted policies, necessitated system-level redesign and contextually relevant policy frameworks rather than reliance on generic, externally modelled approaches.

Parallel challenges are evident in African contexts. Research across diverse African countries points to inadequate national coordination, insufficient training, and weak enforcement of disability-related policies, resulting in discontinuities in rehabilitation and major gaps in prosthetic service provision. In Nigeria, for instance, limited services and an

ongoing deficit in disability-related data further constrain effective rehabilitation planning (Brückner & Gawron, 2021). In South Africa, policy and procedural shortcomings disproportionately affect rural populations, where persons with lower-limb amputation continue to face systemic barriers, including inadequate standards and limited accessibility, that restrict both access to and utilisation of rehabilitation services (Ennion & Johannesson, 2017). Despite barriers to healthcare, patients are more likely to use healthcare services if their experiences are positive and they are supported by family and friends (Naidoo & Ennion, 2019).

The WHO Framework on Disability-Inclusive Health Access

Publications by the World Health Organization (WHO) (2024) over several recent years highlighted persistent and multifaceted barriers to healthcare access for persons with disabilities, including amputees. These barriers include inadequate policies and standards, which often fail to integrate disability-inclusive approaches into health systems, resulting in systemic exclusion (WHO, 2024). Negative attitudes and stigma among healthcare providers continue to undermine the quality and accessibility of care, while insufficient service provision, particularly in rehabilitation and mental health, remains a critical gap (WHO, 2024). Financial constraints and underfunding of disability-specific programs further limit access, especially in low-resource settings (WHO, 2024). Accessibility challenges such as inaccessible infrastructure, transportation, and communication tools, are frequently cited as major obstacles to effective service utilization (WHO, 2024).

Additionally, the lack of meaningful consultation and participation of persons with disabilities in health sector decision-making processes weakens the relevance and responsiveness of services (WHO, 2024). A significant concern is the absence of reliable, disaggregated data, which hampers evidence-based policy development and monitoring of health equity outcomes (WHO, 2024). To address these barriers, WHO advocates for a rights-

based, equity-oriented approach that includes disability-sensitive planning, inclusive governance, and targeted interventions to ensure universal health coverage and the highest attainable standard of health for all individuals, regardless of disability status (WHO, 2024).

The South African Public-Health Context

In a five-year review of lower limb amputations and rehabilitation outcomes in South Africa, Manickum et al. (2019) found that both patient referrals and patient adherence to rehabilitative programmes were poor, especially in the public sector. Stigmatisation and negative attitudes toward healthcare impacted negatively on patients, and "Negative attitudes and stigmatisation by hospital and rehabilitation staff" contributed to patients feeling depressed (Naidoo & Ennion, 2019, p. 101). These negative psychological factors highlighted by Naidoo and Ennion (2019) were reported as a significant barrier to accessing rehabilitation facilities, thereby impairing recovery even further. Sahu et al. (2017, p. 228) reported distressing psychiatric comorbidities after traumatic limb amputations, referred to as a "neglected entity." They included symptoms of depression, suicidal thoughts, and post-traumatic stress disorder (PTSD). They emphasised the importance of early assessment to ensure psychiatric comorbidities are treated alongside the physical condition, thereby improving patient outcomes. To achieve such an early diagnosis of psychiatric comorbidities, a multidisciplinary approach to the rehabilitation programmes which should include surgeons, psychiatrists, and psychologists, is suggested (Sahu et al., 2017).

Systemic inefficiencies and socio-economic challenges hinder patient engagement with rehabilitation services in South Africa's public health sector. The hierarchical referral system is frequently bypassed, leading to overcrowded district hospitals and disrupted continuity of care, as patients often self-refer due to dissatisfaction with primary care clinics (Mojaki et al., 2011). Rehabilitation services are largely concentrated in urban tertiary facilities, limiting access for rural populations who face long travel distances (Mazibuko et

al., 2024). Financial constraints, including transport costs and income loss, further reduce participation in rehabilitation (Mapipa et al., 2016; Sherry, 2014). Psychological factors such as poor acceptance of disability, depression, and anxiety also negatively impact motivation and attendance (Mapipa et al., 2016; Mathur et al., 2024). Additionally, shortages in trained rehabilitation personnel and inadequate integration at the primary care level compromise service delivery (Louw et al., 2023). Cultural beliefs and limited social support influence patient decisions, with some opting for traditional healing methods over formal rehabilitation, leading to missed appointments and reduced continuity of care (Mathur et al., 2024; Magadzire et al., 2017).

Cultural Beliefs, Stigma, and Traditional Healing in Patient Decision-Making

Cultural perceptions and treatments of amputees differ markedly across societies, shaped by social, psychological, and religious influences that profoundly affect their rehabilitation and societal reintegration. Social stigma frequently engenders isolation, with amputees experiencing diminished self-perception and interpersonal challenges (Sharma et al., 2025; Stancu et al., 2016), particularly in contexts like Japan, where preferences for replantation reflect derogatory attitudes toward amputation (Maroukis et al., 2016). Conversely, familial and communal support, alongside spiritual resources, as evident in Indian contexts, facilitates psychological adaptation and comprehensive rehabilitation addressing both physical and emotional domains (Abouammoh et al., 2021; Sharma et al., 2025; Stancu et al., 2016). Cultural health narratives further frame amputation experiences, such as through Laotian interpretations invoking social outrage, thereby enabling culturally attuned patient-provider communication (Dinh et al., 2008). Emerging societal shifts toward inclusivity for disabled individuals signal potential advancements in acceptance and rehabilitative outcomes. Addressing these barriers requires systemic reform, improved

training, and community-based education to foster inclusive and accessible rehabilitation pathways.

Treatment and Psychological Intervention

Psychological interventions are essential in supporting trauma amputees through the emotional and cognitive challenges associated with limb loss. Techniques such as cognitive-behavioral therapy (CBT) and mirror therapy have demonstrated effectiveness in improving self-esteem by addressing depression and negative body perceptions (Pongrácz, 2014).

Rehabilitation programmes that integrate psychological support contribute to a more positive self-concept, helping individuals adjust to their altered physical identity and enhancing overall self-esteem (Maryam et al., 2024). In terms of body image, interventions like Eye Movement Desensitisation and Reprocessing (EMDR) have shown promise in reducing phantom limb pain and promoting body image satisfaction by facilitating acceptance of the new physical self (Namjoo et al., 2017).

The psychological process of adapting to a prosthesis is also critical, as interventions that encourage acceptance of the prosthetic as part of the body can significantly improve body image and emotional adjustment (Peroni et al., 2017). Furthermore, psychological support plays a pivotal role in social and professional reintegration, helping amputees manage PTSD and depressive symptoms, which, if left unaddressed, may lead to pathological grief and hinder reintegration into society (Khoury & Daouk, 2017; Pomares et al., 2019). A comprehensive rehabilitation approach that includes psychological care not only improves emotional well-being but also enhances quality of life and social functioning (Panyi & Lábadi, 2015). Individual differences, such as coping styles, extent of limb loss, and social support can influence the effectiveness of these interventions, highlighting the need for personalised psychological care and further research into long-term outcomes (Fazilari et al., 2024).

Traumatic amputation has been significantly associated with the development of PTSD, with authors suggesting that treatment approaches for traumatic amputation are similar to those with PTSD (Mohammed et al., 2022). As a means of monitoring patient treatment and rehabilitation, the Measurement-Based Care (MBC) approach for traumatic amputation patients who have PTSD has been indicated (APA, 2017). The MBC includes collecting ongoing patient data throughout treatment to adjust clinical care, a practice usually associated with the management of chronic physical morbidity (Fortney et al., 2017; Scott & Lewis, 2015). However, it does not seem that the MBC approach is standard practice in South Africa specifically, and no robust evidence could be found to prove its efficacy. It is unclear whether the MBC approach considers early warning signs in patients who have yet to exhibit psychological morbidity or PTSD, as it is suggested for amputee patients who already have PTSD (Scott & Lewis, 2015).

Bhuvaneswar et al. (2007) suggested early observation of patients, immediately post-operation, which could mitigate future risk of psychosocial morbidity and PTSD. Difficult surgeries, post-operative mobility, or observing a patient's reaction to first seeing the post-operative limb could identify patients who might need ongoing intervention. Interventions should be tailored to address the specific needs of different demographic groups, including older adults who may face unique challenges related to aging and physical decline (Guegan, 2006). Delayed intervention and ignoring pre-existing psychiatric symptoms could harm treatment, for example, increased risk of suicide attempts and an exacerbation of psychiatric symptoms (Bhuvaneswar et al., 2007). While anxiety and depressive-related symptomatology tend to resolve over time in some post-amputee patients, many need ongoing psychosocial, psychological, and pharmacological intervention and management long after the physical rehabilitation is concluded (Sahu et al., 2016). Thus, supporting the notion of including mental healthcare services and a multidisciplinary approach to treatment and rehabilitation.

The Important Role of Healthcare Professionals (HCPs) in the Rehabilitation of Amputee Patients

Healthcare professionals (HCPs) play a pivotal role in the rehabilitation of individuals who have undergone limb amputation. Their involvement is critical in ensuring effective treatment outcomes and promoting holistic recovery. In a systematic review of 45 studies, Lerch et al. (2024) proposed a comprehensive model illustrating the foundational elements of trust between patients and HCPs. This trust is instrumental in managing chronic conditions, enhancing adherence to treatment protocols, improving patient satisfaction, and fostering proactive health behaviors.

Fiedler et al. (2014) underscored the need for interdisciplinary collaboration among healthcare teams to optimise rehabilitation outcomes. Similarly, Gailey et al. (2022) emphasised the structured approach adopted by HCPs in the rehabilitation of patients with lower limb loss. Their research highlighted the use of standardised outcome measures to assess impairments, establish individualised goals, guide therapeutic interventions, and monitor progress. The delivery of evidence-based, personalised care by HCPs significantly contributed to improved functional outcomes and overall quality of life.

Marques et al. (2014) illustrated the multifaceted support provided by HCPs to amputee patients, who often face complex physical, psychological, and social challenges. A coordinated, interdisciplinary approach is essential to facilitate comprehensive rehabilitation, promote functional independence, and enhance quality of life (Collins et al., 2021). The integration of expertise from various professionals, including physicians, nurses, physical and occupational therapists, and prosthetists, ensures that care plans are tailored to each patient's unique needs (Traballesi et al., 2018).

Effective communication among team members is also vital, as it improves care coordination and fosters a supportive therapeutic environment (Abrahamsen et al., 2023).

Continuity of care, particularly during transitions from acute hospital settings to home-based rehabilitation, is crucial for maintaining patient safety and promoting recovery. Ongoing engagement from HCPs addresses both the physical and emotional dimensions of rehabilitation (Marques et al., 2014).

Patient-centered care, which involves active participation by patients and their families in decision-making, has been shown to enhance adherence to rehabilitation protocols and empower individuals throughout their recovery journey (Traballesi et al., 2018). Emotional and psychological support is equally important, as many amputees experience grief, anxiety, and social isolation following limb loss (Gündüz et al., 2024).

Despite the essential contributions of HCPs, systemic challenges such as high workloads and limited resources may hinder the delivery of optimal care. Addressing these barriers is imperative to strengthening support systems and ensuring equitable access to rehabilitation services for amputee patients.

Chapter Summary

The literature reviewed in this chapter underscores the complex interplay between psychological, social, and systemic factors in the rehabilitation of trauma amputees. Studies across the preceding five decades highlight the emotional and psychological sequelae of traumatic limb amputation, citing anxiety, depression, and PTSD being prevalent (Bhuvaneswar et al., 2007; Cavanagh et al., 2006; Mohamed et al., 2022; Pomares et al., 2019; Singh et al., 2009; Steensma, 1959; Vázquez et al., 2018). Psychological interventions, such as cognitive-behavioural therapy and mirror therapy, have demonstrated efficacy in improving self-esteem and body image, which are critical for emotional recovery and social reintegration (Pongrácz, 2014; Peroni et al., 2017).

However, disparities in access to rehabilitation services, particularly in low-resource settings like South Africa, continue to hinder optimal outcomes (Naidoo & Ennion, 2019;

WHO, 2024). The roles of healthcare professionals and family support are pivotal yet often underexplored in the literature, especially regarding their perceptions and contributions to trauma care (Lerch et al., 2024; Marques et al., 2014). Furthermore, the psychological burden experienced by caregivers and the impact of cultural beliefs and stigma require greater attention in rehabilitation planning. While existing studies provide valuable insights, there remains a need for more context-specific research that addresses the long-term psychological effects of traumatic amputation and evaluates the effectiveness of integrated, multidisciplinary interventions. This chapter lays the foundation for the empirical investigation that follows, which seeks to explore the lived experiences of trauma amputees and the role of psychological support in their rehabilitation journey.

Chapter 3: Research Design and Methods

Following the problem statement and rationale provided in Chapter 1, this chapter outlines the research design and the methods used to address the research question. The study's paradigm and theoretical framework will be discussed, along with the methods used, including sampling strategies, data collection techniques, and the analytical methods applied. Lastly, this chapter addresses the ethical considerations and the measures taken to ensure the study's integrity and trustworthiness.

The research question that steered the study was: *Is there a difference in the level of body image and self-esteem between trauma-related amputees who have undergone psychological intervention (group 1), compared to the trauma-related amputees who have not undergone psychological intervention (group 2)?*

A sequential explanatory mixed-methods design comprising an initial quantitative phase followed by a qualitative phase, to contextualise and deepen understanding of the quantitative results, was employed. The specific aims of the study included: 1) to compare levels of self-esteem and body image among post-trauma amputee patients who have received psychological intervention and those who have not and 2) to explore amputees' subjective perceptions of self-esteem and body image following traumatic limb loss. The objectives developed to address these aims included: 1) to administer the Rosenberg Self-esteem (RSE) scale (Rosenberg, 1965) and to compare levels of self-esteem and body-image across the two groups, and 2) to explore the post-trauma amputees' subjective perceptions of self-esteem and body-image.

Research Design

Paradigmatic Framework and Mixed Methods Design

A pragmatic, paradigmatic framework and a mixed-methods research approach were adopted for this research. Many researchers view pragmatism as the most logical

philosophical justification for mixed methods research and frequently apply it in psychological research (Eaves & Walton, 2013; Kaushik & Walsh, 2019; Maarouf, 2019).

The paradigmatic framework is a philosophical and theoretical structure that guides the research process. It includes the inherent views, theories, and principles that inform how the research will be done. Key aspects of the paradigmatic framework include ontology, epistemology, methodology and axiology.

Ontology, in the context of psychological research, concerns the essence of reality and what constitutes valid knowledge (Pessu, 2019). Ontology, as unpacked by Pessu (2019), examines the objectivity of psychological phenomena and whether they occur independently of human perceptions or are, in fact, shaped by these human connections and encounters. Ontology is critical to categorising and explaining psychological entities and their correlations, and, in other words, to grasping how the relationships between various psychological constructs, including emotions and cognitive processes, can be systematically classified (Michie et al., 2023). Finally, ontologies provide a structured framework for combining different psychological theories and models. This assists the researcher in comparing and contrasting various theoretical views to develop methodical approaches that encapsulate the multitude of facets of human behaviour (Michie et al., 2023). This study adopts a pragmatic ontology, which accepts that reality is multifaceted and can be understood through both objective measures and subjective experiences.

Epistemology explores the nature of knowledge, including how it is acquired, justified, and used. It examines the correlation among knowledge, conviction, and truth to determine how research is affected by these factors (Jovanovic, 2022). Koskinen and Breite (2020) explained how epistemology encompasses the origins of knowledge, including concepts such as empirical evidence, instinct, and interpretation. Moreover, it addresses questions about the reliability and validity of various sources of knowledge. Thus, different

origins of knowledge shape our understanding of psychological concepts (Koskinen & Breite, 2020). Epistemology helps explain how we justify knowledge in psychological research. According to Pessu (2019), it examines the principles and methods used to justify psychological theories and findings, ensuring they are based on solid evidence and sound reasoning.

Methodology refers to the approach used to collect and analyse data (Maarouf, 2019). It involves choosing a research design, selecting data-collection methods, and deciding on appropriate analysis techniques. Once the study's guiding paradigm has been identified, the researcher selects a research design that aligns with it. Overall, methodology focuses on how knowledge about the world is obtained. It includes the assumptions researchers make, the limitations they encounter, and the strategies they use to address these limitations (Kivunja & Kuyini, 2017). A sequential explanatory mixed-methods design comprising an initial quantitative phase followed by a qualitative phase was employed to contextualise and deepen understanding of the quantitative results.

Axiology refers to the values and ethics applied during the research process (Kivunja & Kuyini, 2017; Maarouf, 2019). Within research, axiology essentially defines and comprehends the concepts of right and wrong. The researcher must be clear on the values that will guide their research, how they will ensure that participants' rights are respected, and how they will warrant that their research is conducted in an ethical and just manner. Criteria for ethical conduct are explained by Kivunja and Kuyini (2017) as teleology, which emphasises achieving good results; deontology, which considers the consequences of actions; maintaining innate moral values; and finally treating all participants equally and fairly.

Pragmatists suggest that life changes continuously, as the conditions we find ourselves in constantly change. As such, when selecting the most appropriate framework for conducting research, rather than using just one paradigm, the most applicable framework should be

chosen to answer the research question best. This often leads to a combination of quantitative and qualitative methods, or to mixed-method research. Furthermore, the pragmatic approach is sensible when the emphasis is on the research outcomes and research questions rather than the research methods (Kaushik & Walsh, 2019). There are several reasons why pragmatism within a mixed-methods research approach is appropriate for psychology. It offers flexibility and feasibility, highlighting practical solutions to research problems. Thus, researchers can use both quantitative and qualitative methods concurrently, as required and most relevant. This flexibility is especially key in psychology, where varied approaches are needed to comprehend intricate human behaviours and experiences. When compared to utilising either quantitative or qualitative research on its own, a mixed-methods approach offers the possibility to gain a deeper understanding of human encounters (McBeath, 2022). A pragmatic approach gives precedence to the research question rather than the method. This implies that the chosen methodology is guided by the approach that would ultimately be most appropriate for answering the research question, rather than strictly adhering to a particular methodological practise. According to McBeath (2022), this approach benefits psychological research, which is often complex and sophisticated and requires different approaches to explore various dimensions, ultimately providing a holistic view in such a complex landscape. Furthermore, the integration of quantitative and qualitative methods enables transferability alongside statistical analysis whilst simultaneously portraying the intensity of human encounters. There is alignment with ethical considerations in the context of psychological research, as it persuades researchers to focus on the practical consequences of their research, given the soundness of this methodology and the ethical responsibility (Cresswell & Clark, 2017; Morgan, 2007).

Mixed methods approach

A quant-qual sequential explanatory mixed-method approach was followed throughout the study (Barnes, 2019; Bishop, 2015; Gamlen & McIntyre, 2018; Morse & Niehaus, 2016; Williams et al., 2019). Quantitative and qualitative methods can indeed be used together within a single paradigm and have developed into a rigorous scientific method in the social, behavioural, and health sciences (Barnes, 2019; Fàbregues et al., 2019). A mixed-methods approach provided deeper insights into the research topic than either quantitative or qualitative methods alone (Barnes, 2019; Morse & Niehaus, 2016).

A mixed-methods, sequential, explanatory methodology is a two-phase design in which quantitative research precedes qualitative data collection within a single study, treating each set of data equally (Moorley & Cathala, 2019). The first quantitative phase is rooted in post-positivism and includes hypothesis testing and objective measurement. The second qualitative phase prioritised subjective experiences and in-depth exploration to understand the results of the quantitative phase better.

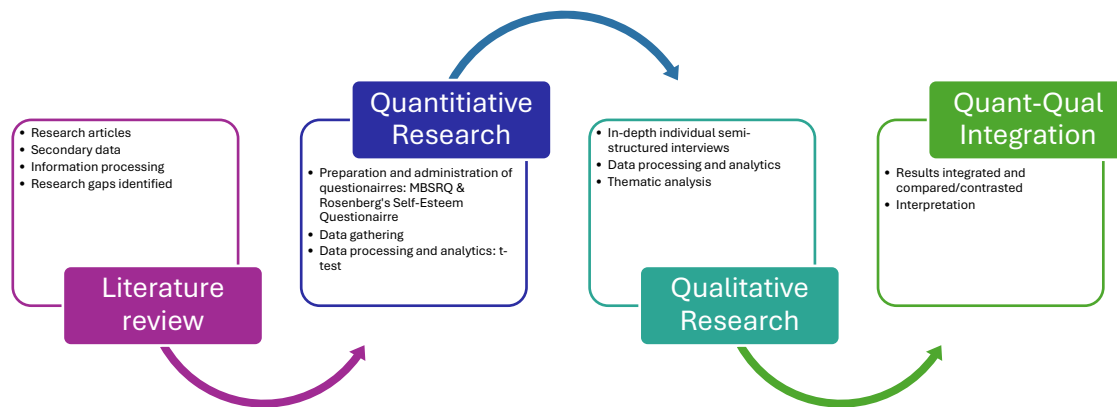
The combination of the two approaches allows for greater opportunity to gain an understanding of complex psychological issues relating to traumatic amputations, which could be neglected or misinterpreted if only qualitative or quantitative approaches are used. By providing a clear audit trail and a justified rationale for the inferences made, emphasis was placed on maintaining the same level of rigour when designing both approaches, as would normally be the case when using mono-methods (Halcomb & Hickman, 2015). An explanatory sequential methodology within the healthcare sector enabled the establishment of statistical relationships among social support and mental health variables. In contrast, subsequent interviews within the qualitative phase allowed the researcher to address gaps and draw significant conclusions (Yardley & Bishop, 2015). The qualitative phase provided added

confidence in the quantitative research by providing additional confirmation and context (Barnes, 2012).

Therefore, a mixed-methods approach, specifically a quant-qual sequential explanatory design, was considered appropriate due to the confirmatory nature of the topic and the need to test the stated hypothesis. Figure 3.1 below details the research process followed.

Figure 3.1

Research process



Research Methods, Data Collection, Data Analysis

Quantitative Phase

Quantitative Research Methods

The hypotheses generated to address Aim 1 were:

Null Hypothesis (H₀): There is no significant difference in self-esteem and body image levels between post-trauma amputee patients who have received psychological intervention and those who have not.

Alternative Hypothesis (H₁): There is a significant difference in self-esteem and body image levels between post-trauma amputee patients who have received psychological intervention and those who have not.

A comparative study involves comparing two or more entities or phenomena to identify similarities and differences (Terre Blanche, Durrheim & Painter, 2009). This research aimed to establish whether there was a difference between the two groups, concerning the impact of psychological intervention on self-esteem and body image in post-traumatic limb amputation patients who have undergone psychological intervention (group 1) and patients who have not (group 2). The objectives developed to address these aims included: 1) to administer the Multidimensional Body-Self Relations Questionnaire (MBSRQ), (Cash, 1990) and the Rosenberg Self-esteem (RSE) scale (Rosenberg, 1965), and to compare levels of self-esteem and body-image across the two groups, and 2) to explore the post-trauma amputees' subjective perceptions of self-esteem and body-image.

Holzer et al. (2014) evaluated body image and self-esteem in lower-limb amputees using the Multidimensional Body-Self Relations Questionnaire (MBSRQ), Rosenberg's Self-Esteem Questionnaire (RSE), and the Short Form (36) Health Survey (SF-36). Results suggested that body image and quality of life factors were much lower for amputees, even though self-esteem levels remained similar to those of the non-amputee control group.

Quantitative participant population and sampling

The targeted participants and sample group for this study were South African patients who had undergone amputation of a limb as a result of a traumatic event. Patients were sourced through Patient Advocacy Groups to which amputee patients belong, as well as through Certified Prosthetists and Orthotists (CPOs). After obtaining ethical clearance, the researcher obtained permission from gatekeepers across advocacy groups and the CPO

medical community to circulate information brochures explaining the research purpose and process, along with an invitation to participate.

The prevalence rates of post-traumatic amputations in South Africa were unclear; as such, it was difficult to calculate a final sample size. The researcher aimed to recruit at least 100 participants. However, only 40 participants completed surveys.

The inclusion criteria for post-amputee patients were:

- 1) South African adult participants, 18 years and older,
- 2) participants must have suffered traumatic limb loss a minimum of one year before the commencement of the study,
- 3) participants who have received psychological counselling, regardless of duration, and those who have not.

The exclusion criteria include:

- 1) patients who have undergone a limb amputation because of non-trauma-related reasons, for example, diabetes or cardiovascular disease.
- 2) patients younger than 18 years of age
- 3) patients who have undergone traumatic amputation less than 12 months before the commencement of the study.

The participant group was heterogeneous for gender, race, socioeconomic background, and type of trauma that resulted in limb amputation.

Quantitative Data Collection

This study employed purposive sampling, a non-probability sampling method in which researchers select the sample based on their judgment of the population's adherence to specific criteria or qualities (Saunders & Lewis, 2018). Nikolopoulou (2023) suggests that, in qualitative or mixed-methods research, purposive sampling is often used, especially when researchers must find participants who can provide highly relevant information and resources

are scarce. Purposive or selective sampling is not unusual to employ specifically in psychological research; some benefits include targeted data collection and depth of information (Nikolopoulou, 2023), effectiveness (Vijayamohan, 2024), flexibility (Regoli, 2019), and access to populations that are more difficult to reach (Raifman et al., 2022; Valerio et al., 2016). The ability to use targeted data collection enabled the researcher to focus on characteristics of the defined population group that were significant to the research question.

Furthermore, this provided in-depth information, which is especially useful in psychology, where researchers aim to understand intricate experiences (Nikolopoulou, 2023). Researchers can speed up the identification and selection of participants who meet the research criteria when using purposive sampling rather than randomised sampling. Thus, purposive sampling promotes efficiency and cost-effectiveness (Vijayamohan, 2024). In her research, Regoli (2019) highlights the flexibility of purposive sampling, which facilitates responsiveness to new insights by allowing the research focus to be adjusted. In their respective research, Raifman et al. (2022) and Valerio et al. (2016) reflect on the fact that purposive sampling allows for access to otherwise difficult-to-reach populations. They explain that purposive sampling is especially valuable when studying specific subgroups or experiences that are difficult to achieve through random sampling.

Thus, purposive sampling made sense to apply for this research, specifically because the patient population was a subgroup of amputee patients. The participants needed to have experienced traumatic limb loss and have lived with this disability for at least 12 months. The reason for using purposive sampling was the low prevalence of the sample group in the general population. It was therefore neither time nor cost-efficient to suggest probability or other sampling methods.

For the quantitative data collection, two psychometric instruments were used to collect data from the participants who had had a limb amputation, thus measuring two

constructs: 1) body-image, 2) self-esteem. First, an anonymised self-administered online demographic questionnaire, to capture information regarding age, gender, type of amputation, and whether the patient received psychological counselling or not, was administered. In addition, the Multidimensional Body-Self Relations Questionnaire (MBSRQ) and the Rosenberg Self-esteem (RSE) scale were administered online to the participants. The instruments were administered to two main groups of amputee patients, those who have gone through psychological counselling as part of the rehabilitative process (group 1), and those who have not (group 2). (Holzer et al., 2014).

The *Multidimensional Body-Self Relations Questionnaire* (MBSRQ) (Cash, 1990) was designed as a multidimensional assessment of the self-attitudinal body-image construct, encompassing cognitive, behavioural, and emotional aspects of body image. An early version of this instrument from 1983 contained 294 items and was labelled the Body-Self Relations Questionnaire (BSRQ). Consequent versions iteratively removed or substituted items based on rational/conceptual and psychometric criteria. Body image remains a complex, multidimensional construct with a significant impact on psychological well-being, combining perceptual, emotional, cognitive, and behavioural aspects of body experience. Holzer et al. (2014), who included a large sample group and used multidimensional scoring in their study, provide a good basis for further investigation into a targeted subgroup of amputees, namely trauma amputees. The MBSRQ is widely used, appears in several research papers, and is considered the most inclusive measure for evaluating body image (Argyrides & Kkeli, 2013; Brown et al., 2011; Vossbeck-Elsebusch et al., 2014). Reliability coefficients for the various sectors within the MBSRQ range between 0.7 and 0.89 for Cronbach's alpha, a measure of internal consistency. This range indicates an acceptable to good internal consistency. The 1-Month Test-Retest factors range from 0.74 to 0.91, also indicating acceptable to good reliability (Cash, 2000).

The MBSRQ offers a detailed assessment of body image using a 5-point Likert-type scale ranging from "definitely disagree" to "definitely agree". It evaluates diverse factors of body image through separate subscales, including:

1. Appearance evaluation, how one feels about physical attractiveness or unattractiveness.
2. Appearance orientation, how much one invests in their appearance.
3. Fitness evaluation, how one feels about their physical fitness.
4. Fitness orientation is the degree to which one invests in their physical fitness.
5. Health evaluation, how one feels about their health.
6. Health orientation is the degree to which one invests in a healthy lifestyle.
7. Body Areas Satisfaction Scale (BASS), how satisfied one is with specific body areas.

These subscales provide scores that reflect various aspects of body image, helping the researcher understand a patient's attitudes and behaviours regarding their body (Cash, 2012). Peltzer and Pengpid (2012), Mitchell (2018), and Raubenheimer (2013) provide examples of how the MBSRQ scale has been used in the South African context.

The *Rosenberg Self-esteem (RSE) scale* (Rosenberg, 1965) is a 10-item, Likert-scale, self-report instrument that assesses adolescent self-esteem and self-worth. However, since its initial design, it has subsequently become a widely used measure of self-esteem in adults (Garcia et al., 2019; Martin-Albo et al., 2007; Robins et al., 2001; Schmitt & Allik, 2005). The RSE has good statistical properties, with an internal consistency of 0.77 and a minimum coefficient of reproducibility of 0.90. An alpha coefficient of 0.72 to 0.87 has been reported, and test-retest reliability was 0.85 at a 2-week interval (Silber & Tippett, 1965; Shorkey & Whiteman, 1978). Refer to Makhubela and Mashegoane (2019), Westaway et al. (2015) and

Westaway and Wolmarans (1992) for examples of where the Rosenberg Self-Esteem (RSE) scale has been used in a South African Context.

Quantitative Data Analysis

This included a t-test with a p-value of 0.05, which was considered noteworthy. A t-test was used to assess significant differences between the two patient groups (those who received psychotherapeutic intervention and those who did not) for each parameter (Holzer et al., 2014). The t-test was also used to determine whether any effect was substantial for any parameter.

Qualitative Phase

Qualitative Research Methods

Qualitative research tends to be exploratory and, therefore, requires a sufficiently large sample of people knowledgeable about the topic to gather diverse perspectives that help explain quantitative results (Saunders & Lewis, 2018). The second aim of the study, which guided the qualitative phase, was to explore the perception of body image and self-esteem of post-traumatic amputee patients. The objective was to triangulate the data through individual interviews with both post-trauma amputee patients and the healthcare professionals who are involved in the rehabilitation of patients.

According to Agius (2013), qualitative research has a rich heritage in the disciplines of human social behaviour and psychology, intending to design methods that help researchers understand social phenomena in as natural a setting as possible (Yadav 2022). Agius (2013) and Povee and Roberts (2014) further emphasise that one of the benefits of qualitative research is its applicability across contexts, enabling researchers to understand how social, cultural, and environmental influences shape psychological processes. Agius (2013) highlighted that qualitative research is particularly relevant in psychiatry, whether used as a sole method or in conjunction with quantitative research. To answer the research question,

more specifically, the second aim of the research, it was important to gain an in-depth understanding of the perception of body image and self-esteem of post-trauma amputee patients. Qualitative research enabled exactly this by providing an extensive, deeper look into the intricate psychological phenomena participants experience, as well as insights into their emotions and thoughts and ultimately, providing a significantly better comprehension of their lived experiences (Yadav, 2022).

Interviews have been found to offer flexibility in research, enabling researchers to adapt and uncover new insights. In turn, a level of adaptability may lead the researcher to investigate different aspects that might not have been considered initially. Moreover, qualitative research highlights the importance of capturing participants' voices and perceptions, thereby enabling a more nuanced understanding of psychological phenomena by accounting for participants' subjective experiences (Bhandari, 2020). The research by Bhandari (2020) indicates that this ability to investigate participants' voices and views in such depth may even lead to the generation of new hypotheses. This could be fundamental for developing new and interesting research questions, as future studies can test new hypotheses.

Grbich (2019) explains the role and levels of theory in qualitative research, as well as the researcher's choice to utilise current theories or to develop new theories from the data. Theory can be viewed as a set of ideas and proposals designed from research observations to clarify correlations or events. Theories can range from extremely basic ideas to advanced, well-researched ones, such as Freud's stages of development. The beauty of theory in qualitative research is that the researcher is responsible for finding the most appropriate approach that ultimately answers the research question.

In conclusion, to provide appropriate insights into the perceptions of body image and self-esteem among post-trauma amputee patients, the researcher's objective was to triangulate the data through individual interviews with both post-trauma amputee patients and the

healthcare professionals involved in their rehabilitation. Thus, supplementing the quantitative research with qualitative research enabled the researcher to fulfil the second aim of this study, as the qualitative phase provided greater confidence in the quantitative findings by offering additional confirmation and context (Barnes, 2012).

Livneh's model of psychosocial adaptation to chronic illness and disability.

Studies that have focused on people with disabilities and the psychosocial concomitants thereof usually include multiple variables, including affective, cognitive, and behavioural domains (Livneh et al., 2004). The psychosocial adaptation to chronic illness and disability (CID) (Livneh et al., 2004) model suggests that, in addition to the disability-triggered reactions to chronic illness and disabilities (for example, depression and anxiety), adaptation-related correlates such as "quality of life, life satisfaction, perceived control, spirituality, optimism, and successful coping" should also be explored (Livneh et al., 2004, p. 412). Livneh's model offers four particular domains within which to understand the adaptation to chronic illness and disability, including: 1) psychosocial reactions to the adaptation process, 2) the role of coping strategies, 3) the role of broad cognitive and perceptual styles and locus of control, and 4) the impact the chronic illness or disability has on quality of life and life satisfaction (Livneh et al., 2004).

The literature suggests that individuals tend to have higher self-esteem and lower feelings of hostility in the context of better adaptation, adjustment, and acceptance of chronic illnesses and disabilities; thus, CID is an appropriate model for contextualising the current study's findings (Livneh et al., 2004). The clinical implications of Livneh's model indicate that interventions focused on specific coping strategies can positively influence outcomes, such as zest for life and self-image.

Livneh's model offered a theoretical framework that could be applied in the specific context of traumatic amputation to understand the psychological sequelae following traumatic

limb amputation, and the impact on one's body image and self-esteem. This study focused on exploring the effect of psychological intervention on the perceived body image and self-esteem of post-traumatic amputated patients (Livneh, 2021).

Qualitative participant population and sampling strategy

For the qualitative part of the study, the population and sample group included two cohorts: the first included post-traumatic amputee patients, and the second included healthcare professionals (HCPs) who work closely with post-traumatic amputee patients. Qualitative research tends to be exploratory and, therefore, requires a sufficiently large sample of knowledgeable participants to gather diverse perspectives that can help explain quantitative results (Saunders & Lewis, 2018). This was achieved through data triangulation, in which two or more independent data sources within a study helped explain the quantitative results (Saunders & Lewis, 2018). The interviews with the HCPs provided a contextual view to augment the data gathered in the study (Di Blasi et al., 2001; Weinberg et al., 2007). The multi-source qualitative data enabled data triangulation, which contributed to the study's rigour (Pandey & Patnaik, 2014).

The patient group was sourced through the CPO network and other healthcare industry contacts. The HCPs were sourced from the prosthetics medical community and network groups. The aim was to include approximately 5 post-traumatic amputee patients who have received psychotherapy, 5 post-traumatic amputee patients who have not received psychotherapy, and 5 HCPs. However, the recruitment process proved to be considerably more challenging than initially anticipated. Despite extensive outreach over 18 months to healthcare professionals actively engaged with post-traumatic amputee patients, many of whom expressed willingness to assist in recruiting participants, it became evident that relatively few patients were willing to participate in qualitative interviews. Among those who agreed, only one consented to a face-to-face interview; the other two, who reside in different

provinces, opted for online interviews. The remaining four participants preferred to respond to the interview questions via email or WhatsApp.

In total, seven post-traumatic amputee patients participated in the study: four had received psychological intervention, and three had not. Additionally, interviews were successfully conducted with five healthcare professionals, including one physiotherapist, one orthopaedic surgeon, and three certified prosthetists and orthotists (CPOs).

The inclusion criteria for the HCP were:

1. Healthcare Professionals who work directly with post-traumatic amputee patients. The group included one Physiotherapist, one Orthopaedic Surgeon and three CPOs.

The exclusion criteria for the HCP were:

2. Healthcare Professionals who do not work directly with post-traumatic amputee patients.

Qualitative Data Collection

For the qualitative data collection, semi-structured individual interviews were conducted with four post-traumatic amputee patients who have undergone psychotherapy (group 1), three post-traumatic amputee patients who have not undergone psychotherapy (group 2), and five HCP's. Semi-structured interviews were conducted to maintain topic precision, allowing some uniformity across interviews while leaving room to explore fascinating or unanticipated topics and ideas (Saunders & Lewis, 2018).

Interviews were conducted face-to-face or online via Microsoft Teams and Zoom; a few responses were also provided via email or WhatsApp. By using online interviews, the researcher was able to conduct interviews with patients and HCPs across the country, rather than being confined to face-to-face interviews in Pretoria, where the researcher resides. This

provided an opportunity for amputees from across the country to participate in the study's qualitative research component.

Several authors have confirmed that online interviews are appropriate; for example, Deakin and Wakefield (2014) emphasise that research populations have expanded significantly in geographic scope and that online interviews provide access to research participants who would previously have had to be excluded due to the limitations of face-to-face interviews. The ethics of online interviews are like those of face-to-face interviews: informed consent, confidentiality and anonymity, data security, and debriefing. These help ensure a positive and ethical experience for participants. Babbie (2014) found that some research participants who would not necessarily have participated in a face-to-face interview due to the sensitive nature of the condition or questions were more likely to participate in an online interview. Lo Lacono, Symonds, and Brown (2016) found that online interviews create new possibilities by enabling contact with broader populations of research participants, thereby increasing sample diversity. They also have a positive effect on areas such as affinity, nonverbal cues, and ethics.

The use of email and other written formats for qualitative interviews in psychological research has gained increasing recognition as a viable methodological approach, offering distinct advantages and presenting unique challenges. Email interviews offer notable flexibility and accessibility, enabling participants to respond at their convenience and facilitating the inclusion of geographically dispersed or time-constrained individuals, thereby enhancing sample diversity (Bowden & Galindo-Gonzalez, 2015; Hawkins, 2018).

Additionally, this approach is cost-effective, as it eliminates travel and transcription costs, since responses are already in written form (Nehls, 2013). The asynchronous nature of email interviews allows participants greater time for reflection, often resulting in more thoughtful and detailed responses (Burns, 2010; Meho, 2006).

However, methodological limitations must be acknowledged, particularly the absence of non-verbal cues, which can restrict the interpretation of emotional and contextual nuances (Olivero & Lunt, 2004; Nehls, 2013). While asynchronous communication may reduce spontaneity and affect conversational flow, it can also diminish interviewer effects and encourage disclosure of sensitive information (Bowden & Galindo-Gonzalez, 2015; Olivero & Lunt, 2004).

Ethical considerations are paramount in email-based qualitative research, necessitating clear protocols for informed consent, privacy, and data security to safeguard participant information (Hamilton & Bowers, 2006; Murray & Sixsmith, 1998). Establishing trust and rapport may be more challenging in the absence of face-to-face interaction, requiring researchers to employ deliberate engagement strategies (Bampton et al., 2013; Olivero & Lunt, 2004).

While email interviews offer substantial practical and methodological benefits, researchers must address the associated limitations and ethical concerns, potentially through mixed-mode approaches that combine email with other interview methods to enhance data richness and validity (Meho, 2006).

Qualitative Data Analysis

In the qualitative section, the analysis procedure aimed to articulate and analyse the collected data. Interview transcripts were completed as soon as possible to ensure data accuracy. Braun and Clarke's (2006) six phases of thematic analysis were followed:

Step 1: Become familiar with the data,

Step 2: Generate initial codes,

Step 3: Search for themes,

Step 4: Review themes,

Step 5: Define themes,

Step 6: Write-up.

Braun and Clarke's tool, namely the six phases of thematic analysis, is simple and appropriate for qualitative research. Given the typically unstructured nature of qualitative research, this tool provided a suitable structure. The phases are transcript – code – category – theme – theory (Saunders & Lewis, 2018).

Measures to Ensure Trustworthiness

Saunders and Lewis (2018) suggest several criteria for qualitative quality control: credibility, transferability, dependability, and confirmability. *Credibility* refers to the extent to which a study's procedures, outcomes, and overall behaviour are judged to be honest and dependable (APA, 2020). The triangulation of the data from the patient and HCP participants lends further credibility to the data. Credibility depended on conducting thorough, prolonged semi-structured interviews, which allowed further exploration of points of interest. It also depended on a systematic and consistent approach to coding the interviews (Korstjens & Moser, 2018). To address the study's credibility, the researcher engaged with the data for an extended period and maintained a reflexive journal. In addition, participation in the study was voluntary. *Transferability* depended on purposive non-probability sampling, which purposefully selected respondents relevant to the topic through thick, detailed descriptions of the results (Korstjens & Moser, 2018). Credible research must be reproducible. The methods were detailed and clear, allowing other researchers to reproduce the results or apply them to other contexts. In view of this, participants were selected through purposive sampling, and the researcher maintained a detailed audit trail of the research procedures and methods and ensured a thick description of the findings. To ensure reliable results, triangulation was again used, along with proper protocols for data transcription and interpretation (Korstjens & Moser, 2018). *Dependability* was ensured through a detailed audit trail. In addition, all interviews were audio recorded to ensure more accurate data capture. Responses received via

email or WhatsApp were captured and saved accordingly. Furthermore, cross-examination of interviewees' responses, through a process of critically and methodically examining the information, ensured that accurate and reliable assumptions were drawn from the data, thereby enhancing *confirmability* (Pandey & Patnaik, 2014; Saunders & Lewis, 2018). Recordings and transcriptions are stored and used in ways that allow other researchers to verify the study's results, thereby contributing to a transparent audit trail (Korstjens & Moser, 2018).

Ethical Considerations

This study was guided by the Research Ethics Policy of the University of South Africa (Unisa, 2013) and the Health Professions Council of South Africa's Ethical Guidelines for Good Practice in the Health Care Professions (HPCSA, 2021).

Key aspects of ethics in psychological research include informed consent, confidentiality and privacy, minimising harm, and competence. Informed consent, as explained by Fried et al. (2020), ensures that all research participants are fully informed about the nature of the research, including any possible risks or benefits they may be exposed to. They emphasise that participants must voluntarily agree to participate in the research. Confidentiality and privacy are other crucial aspects. By protecting personal information and ensuring that data is stored securely, the researcher safeguards the rights and welfare of research participants, thereby promoting autonomy (Fried et al., 2020). The American Psychological Association (2017) outlines the ethical principles and code of conduct that should guide psychologists. These guidelines highlight that all researchers must take all necessary steps to minimise potential physical or psychological harm to participants. In terms of competence, the APA 2017 guidelines make clear that researchers must not only be sufficiently trained and competent to conduct research, but also be able to address any issues that may arise appropriately.

Ethical clearance

This study proposal was submitted to the Departmental Higher Degrees Committee for scientific review. Once approval was obtained, ethical clearance was applied for and obtained by the College of Human Sciences Research Ethics Committee (see Appendix A). The ethics reference number for the study is: 47474181_CRECHS_2023.

Beneficence and non-maleficence

Care was taken to consider the potential ways harm could be caused during the collection of primary data, especially during the qualitative phase of research. Sensitivity to any hesitation in answering questions was taken into account, and participants weren't pressured to respond. Interview questions were reviewed before each interview to ensure that, in the specific circumstances, no question could be seen as humiliating. This was also crucial for follow-up questions, and care was taken to avoid situations that would be embarrassing or offensive. Lastly, the interviewer was cognisant of the interviewee's specific circumstances and considered factors such as time constraints, location, and other aspects that might have caused discomfort (Saunders & Lewis, 2018).

Some risks included anxiety and emotional discomfort when participants recalled their traumatic limb loss experiences. Should patients have experienced any discomfort during the interview, it would have been stopped immediately. Furthermore, participants would have been referred to relevant psychological services should this have been necessary; these included: The Unisa Psychotherapy Clinic and the South African Depression and Anxiety Group.

Debriefing is a fundamental ethical principle in psychological research, focused on the well-being of research participants and the integrity of the research process. It involves providing participants with information about the study's purpose, procedures, and any potential consequences after participation has concluded (American Psychological

Association (APA), 2017). All participants were offered the option of debriefing after their interviews and could be referred for psychological support to The Unisa Psychotherapy Clinic and the South African Depression and Anxiety Group if needed. None of the participants took up the offer of support or indicated that they needed assistance.

There were no direct benefits to the participants; however, an extended benefit was the potential to contribute to improved patient care and to include psychotherapeutic intervention as a core aspect of treatment.

Voluntary participation and freedom to withdraw

Participation in both the quantitative and qualitative phases of the research was completely voluntary. As part of the consent process, participants were informed of their right to withdraw at any time. This was mitigated by providing thorough information in advance and by explaining the research's context and importance. No participant was coerced into participating or completing the process (Saunders & Lewis, 2018). Participants were free to withdraw from the study at any point, without consequence.

Informed consent

For participants in the quantitative study, completing the anonymous questionnaire itself constituted consent. A disclaimer of informed consent was added at the beginning of the digital questionnaire, informing participants about the nature of the study, its risks and benefits, and how the data would be used. Participants in the qualitative portion of the research were requested to complete and sign a consent form after the full research process, including the research's expectations, risks, and benefits, was explained in detail (Saunders & Lewis, 2018).

Anonymity and confidentiality

Given the sensitive nature of medical research, the researcher took significant care to ensure participants' anonymity in the quantitative study, as responses cannot be traced back to

them. For those participants who consented to take part in the qualitative phase, confidentiality and protection of identifiable information were managed by:

1) Once interviews were transcribed, all identifiable factors were removed, and pseudonyms were used to replace actual names of participants.

2) Original recordings of interviews are stored on a password-protected device, and only the researcher and her supervisor have access to this.

3) Transcriptions were saved on a secure, password-protected device.

Chapter Summary

This chapter defined the theoretical framework that informed the research methodology, whilst providing a rationale for the selected paradigm. The research design and methodology were described, including the sampling strategies, data collection techniques, and analytical methods applied. In conclusion, this chapter addressed the ethical considerations and the measures taken to ensure the research's integrity and credibility.

Chapter 4: Introducing the Participants

This chapter presents comprehensive descriptions of participants and their relevant characteristics drawn from both the quantitative and qualitative phases of the study, thereby providing essential contextual grounding for the subsequent analysis. The quantitative data were gathered through the administration of online anonymised questionnaires, and the qualitative data were generated through semi-structured interviews conducted with three distinct groups: four post-traumatic amputees who had received psychological intervention, three post-traumatic amputees who had not received such intervention, and five healthcare professionals who work closely with individuals experiencing post-traumatic limb loss.

Quantitative Phase Demographics

Forty respondents completed the online anonymous questions. See Table 4.1 below for the demographic profile of respondents.

Table 4.1

Introducing the quantitative research participants

No	Age	Gender	Race	Traumatic Amputation	Amputation Cause	Years since Amputation	Psychological Counselling
1	56-65	Male	White	Yes	Trauma	>5	No
2	56-65	Female	White	No	Illness	>5	No
3	46-55	Female	White	Yes	Trauma	>5	Yes
4	36-45	Male	White	Yes	Trauma	1-3	No
5	65+	Male	White	No	Illness	<1	No
6	56-65	Male	White	No	Illness	1-3	No
7	36-45	Male	Black	Yes	Trauma	<1	No
8	46-55	Male	White	No	Illness	1-3	No
9	56-65	Male	White	Yes	Trauma	3-5	No
10	26-35	Male	White	Yes	Trauma	<1	Yes
11	56-65	Female	White	Yes	Trauma	<1	Yes
12	26-35	Female	White	No	Illness	>5	No
13	18-26	Male	White	Yes	Trauma	3-5	Yes
14	56-65	Male	White	Yes	Trauma	>5	No
15	26-35	Male	White	Yes	Trauma	1-3	Yes

16	46-55	Female	White	Yes	Trauma	>5	No
17	36-45	Male	Black	Yes	Trauma	>5	Yes
18	36-45	Female	White	Yes	Trauma	>5	No
19	46-55	Male	White	No	Illness	>5	No
20	36-45	Male	Black	Yes	Trauma	>5	Yes
21	26-35	Male	White	Yes	Trauma	>5	Yes
22	65+	Male	White	No	Illness	1-3	Yes
23	46-55	Female	White	No	Illness	1-3	No
24	26-35	Male	White	Yes	Trauma	3-5	No
25	26-35	Male	Black	Yes	Trauma	>5	Yes
26	18-26	Male	White	Yes	Trauma	>5	Yes
27	18-26	Male	White	No	Illness	1-3	Yes
28	18-26	Male	White	No	Illness	>5	Yes
29	36-45	Female	White	Yes	Trauma	1-3	No
30	56-65	Female	Coloured	No	Illness	>5	No
31	36-45	Female	White	Yes	Trauma	3-5	No
32	46-55	Male	White	No	Illness	<1	No
33	46-55	Male	White	Yes	Trauma	>5	No
34	56-65	Male	White	Yes	Trauma	>5	No
35	18-26	Male	White	No	Illness	>5	No
36	26-35	Male	White	No	Illness	>5	Yes
37	36-45	Male	White	Yes	Trauma	<1	No
38	46-55	Male	White	Yes	Trauma	1-3	Yes
39	65+	Male	White	Yes	Trauma	>5	No
40	56-65	Male	White	No	Illness	<1	No

Introducing the Qualitative Research Participants

Post-traumatic amputee participants

Of the 12 participants who were interviewed, seven were post-traumatic amputee patients (Table 4.2) and give were HCP's (Table 4.3).

Table 4.2

Patients

No	Alias	Age	Gender	Race	Psychological Intervention	Years since Loss	Interview Technique
Participant 1	Charl	55	Male	White	Yes	21	Virtual Interview (Zoom)

Participant 2	Dave	33	Male	White	Yes	17	Responded via Email
Participant 3	Gary	42	Male	White	Yes	16	Responded via WhatsApp
Participant 4	Ira	30	Male	White	No	14	Virtual Interview (Teams)
Participant 5	Kevin	42	Male	White	No	14	Face-to-Face
Participant 6	Richard	34	Male	Indian	Yes	17	Responded via WhatsApp
Participant 7	Thabani	45	Male	Black	No	10	Responded via WhatsApp

Participant 1

Charl is a 55-year-old transfemoral (above-knee) amputee who sustained a traumatic injury resulting in the loss of his left leg following a paragliding accident. Over a period of four years, post-injury, extensive medical interventions were undertaken to salvage the limb. Despite these efforts, persistent infections and chronic pain necessitated a decision to proceed with amputation. This decision, although initially accompanied by a sense of relief, later required significant psychological adjustment as Charl came to terms with the permanent loss of his limb.

He is actively engaged in advocacy and public education about amputation, and through his social media platforms, Charl shares personal narratives and reflections on his journey from limited mobility and emotional distress to a significantly improved quality of life. His content often highlights the psychological and physical challenges of living with limb loss, as well as the transformative impact of therapeutic support and appropriate prosthetic care.

Charl's recovery trajectory was notably influenced by his decision to seek psychological treatment nine years after the accident, particularly by establishing a strong rapport with a prosthetist whose approach aligned with his needs. These factors marked a turning point in his rehabilitation, enabling him to embrace a lifestyle characterised by physical activity and personal fulfilment. He participates in mountain biking, hiking, and other extreme sports, demonstrating a high level of physical capability and resilience.

Before the accident, Charl described himself as an active, independent individual with a positive body image and a balanced disposition. The prolonged period of limb salvage was marked by intense physical suffering, opioid dependency, and emotional turmoil. His eventual transition to amputation and subsequent rehabilitation reflects a complex interplay of medical, psychological, and social factors. Today, Charl remains an active member of the amputee community, offering practical guidance and motivational support to others navigating similar experiences.

Participant 2

Dave is a 33-year-old transtibial (below-knee) amputee who lost his right lower limb in a motor vehicle accident at the age of 16. Before the accident, he was an active and socially engaged individual with a strong interest in sports. The initial postoperative period was marked by frustration due to limited mobility while awaiting prosthetic fitting, resulting in social isolation and increased dependence on family and friends for support.

Upon receiving his prosthesis, Dave faced challenges related to public perception and adapted by wearing long trousers to avoid unwanted attention. He identified dependence and isolation as significant psychological hurdles during recovery, although he acknowledged the consistent support provided by his social network.

Professionally, Dave encountered barriers in proving his capability to employers in physically demanding environments, such as airlines and cruise ships. Despite demonstrating a normal gait and functional competence, he noted that the invisible nature of residual limb pain often led to misunderstandings about his need for occasional rest or use of crutches.

Dave reported a positive self-image before the accident and shared that past experiences of bullying were unrelated to his physical appearance. His narrative highlights the complex interplay between physical recovery, social reintegration, and the ongoing negotiation of identity and capability in the context of limb loss.

Following the accident, the participant initially relied on athletic activity as a primary coping mechanism. However, after sustaining a spinal injury during sport, he experienced a psychological breakdown, prompting him to seek professional psychological support. He described the therapeutic process as frustrating and ineffective for his personal needs, citing discomfort with disclosing intimate details to a stranger. Consequently, he discontinued formal therapy after a few sessions. Instead, the participant found emotional support and psychological resilience through close friendships, particularly with individuals who shared similar experiences and had academic backgrounds in biomechanics and amputee sport. He emphasised the importance of peer support and expressed a strong preference for informal, experience-based guidance over traditional psychological intervention, which he does not perceive as personally beneficial.

Participant 3

Gary is a 42-year-old, left transtibial (below-knee) amputee who sustained his injury in a motorcycle accident while commuting to work. At the time of the accident, he was 26 years old. He described the amputation as a life-altering event that, paradoxically, led to personal growth, increased patience, and emotional resilience. Despite the abrupt nature of the trauma, he returned home within days and resumed work and recreational activities, including motorcycling, within two months of the incident.

Initial rehabilitation was informal and largely self-directed, supported by a neighbour who was a physiotherapist and a prosthetist who facilitated early prosthetic fitting. The participant demonstrated rapid physical adaptation, reporting minimal engagement with structured rehabilitation or physiotherapy beyond the first month post-amputation.

The most significant challenge post-amputation was managing phantom limb pain, which he described as psychologically distressing. He sought hypnotherapy to address this issue, which initially proved effective but diminished in efficacy over time. More recently, he

engaged in spiritually oriented psychological support, which he found beneficial in addressing both phantom pain and broader emotional challenges.

Pre-amputation, the participant identified as a career-driven individual with limited focus on physical or emotional self-care. Post-amputation, he reported a shift toward greater awareness of mental and physical health, supported by an active family lifestyle and a spouse who is a fitness professional. He emphasised the importance of mental strength and a proactive mindset in his recovery, often sharing his story to inspire others facing similar challenges.

Participant 4

Ira is a 30-year-old transtibial (below-knee) amputee who sustained his injury at the age of 16 following a road accident during a school holiday when a truck collided with the quadbike he was on. The accident resulted in the immediate traumatic loss of his limb at the scene. Despite the severity of the incident, Ira described the experience as ultimately transformative, redirecting his life toward academic and professional pursuits in biomedical engineering. He is currently engaged in doctoral research focused on prosthetics and orthotics, with aspirations to contribute meaningfully to the field and support others with limb loss.

Post-amputation, Ira adapted rapidly to his new physical condition, beginning to walk within six weeks and running on a prosthetic blade within six months. He transitioned from high-impact sports such as rugby and motorbike racing to activities like gym training, mountain biking, hiking, and hunting. He reported that these lifestyle changes have improved his physical fitness compared to his pre-amputation state. The most significant physical challenge Ira identified was navigating uneven terrain, particularly uphill slopes and angled surfaces, which affect his balance and gait. He noted minimal difficulty with stairs due to the quality of his prosthetic limb.

Ira did not receive formal psychological intervention following his amputation, aside from assessments required for legal processes. He reported no significant emotional distress and attributed his psychological resilience to a proactive mindset and strong support from his prosthetist, who provided both physical and informal psychological guidance. Ira emphasised the role of physical activity, particularly gym training, in maintaining mental well-being and managing secondary issues such as back and hip pain. His recovery approach was portrayed by a focus on physical rehabilitation, self-motivation, and a positive outlook, which he now shares with others through informal mentorship and storytelling.

Participant 5

Kevin is a 42-year-old male who sustained a traumatic above-knee amputation of his right leg in 2011, following a motor vehicle accident. The incident occurred while he was assisting an elderly couple with a flat tyre at an intersection. A third vehicle collided with his stationary car, trapping him between the two vehicles, resulting in the immediate loss of his limb. Emergency surgery was performed on-site before he was transported to the hospital, where he regained consciousness two days later.

Before the amputation, Kevin described himself as athletic, impulsive, and in the prime of his life. He had recently completed his studies, held a stable job, and enjoyed a financially secure and active lifestyle. Post-amputation, he reported significant changes in both physical and psychological domains. Physically, he became less active and gained weight, though he expressed a strong desire to regain fitness and improve his health with the aid of a new pro. He acknowledged the increased effort required to maintain physical health following limb loss and stressed the importance of discipline and self-perception in rehabilitation.

Psychologically, Kevin experienced a period of depression and emotional distress, particularly in response to societal reactions and perceived pity. He highlighted the

importance of a supportive social environment, noting that humour and camaraderie among friends played a critical role in his recovery. He also mentioned the need for psychological support immediately following traumatic amputation, suggesting that early intervention could prevent severe emotional consequences, including suicidal ideation.

Although he did not receive formal psychological care at the time of his injury, he recounted a negative encounter with a psychiatrist that left him feeling misunderstood and unsupported. Instead, he found meaningful guidance from his surgeon, who communicated clearly and empathised during the early stages of recovery. Kevin also described a personal turning point during a retreat to his family's farm, where he chose to discontinue medication and alcohol use, marking the beginning of a more positive and proactive phase in his rehabilitation.

Kevin's narrative reflects a complex and deeply personal journey of adaptation, resilience, and transformation. He has become more empathetic and humbler, and he actively seeks to inspire others facing similar challenges. His story underscores the multifaceted impact of limb loss and the critical role of psychological, social, and environmental factors in shaping recovery outcomes.

Participant 6

Richard is a 34-year-old, lower-limb amputee who sustained the loss of his leg at the age of 17 due to a rugby-related injury during his final year of secondary school. Initially believed to be a routine fracture, the injury rapidly escalated, resulting in an unexpected amputation within four days. The suddenness of the event left him with no time to prepare mentally, emotionally, or physically, and he relied heavily on his spirituality to cope with the trauma.

The amputation had a profound and multifaceted impact on his life. It disrupted his academic and athletic aspirations, particularly his plans to pursue a university education in

sports science and a semi-professional rugby career. He described the experience as deeply disorienting, with significant psychological consequences and a pervasive sense of loss. The adjustment to a new lifestyle was particularly challenging given the simultaneous pressure to complete his schooling.

Seventeen years post-amputation, the participant reported ongoing emotional struggles, noting that while coping mechanisms have improved over time, the psychological burden remains. He pointed out that adaptation is a lifelong process marked by persistent fluctuations in emotional well-being.

The most difficult aspect of his recovery was accepting the reality of his condition upon discharge from the hospital. He described the emotional and psychological adaptation as more challenging than the physical rehabilitation, which he approached with determination and discipline. Before the amputation, he viewed himself as physically fit, emotionally stable, and mentally strong, and he excelled in various sports. Post-amputation, he struggled with body image and mobility limitations and continues to experience discomfort when not wearing his prosthesis. Despite these challenges, he has maintained a commitment to physical rehabilitation, which he found more effective than psychological support. Although he participated in a support group, he found limited value in verbal processing alone, noting that everyone must ultimately confront their own reality. He described physical rehabilitation as a more empowering and effective coping strategy, at times becoming an obsession in his pursuit of mobility and independence. Richard's narrative highlights the enduring psychological and emotional impact of traumatic limb loss, the importance of self-directed physical rehabilitation, and the complex interplay between personal resilience, social support, and long-term adaptation.

Participant 7

Thabani is a 45-year-old lower-limb amputee who sustained his injury in a head-on collision with a vehicle while riding his motorcycle 10 years ago. The driver of the car was intoxicated and lost control, resulting in a severe impact that shattered Thabani's knee and fractured both hands. He was initially declared dead at the scene by the first emergency responders, but was resuscitated by a second ambulance team through CPR and an adrenaline injection. Thabani spent nine months in hospital following the accident, a period he described as emotionally devastating due to the sudden loss of independence and mobility.

Post-amputation, Thabani faced significant physical and emotional challenges. He required full-time care, including assistance with basic tasks such as bathing and using the toilet, which he found deeply humiliating. The breakdown of his marriage compounded the emotional toll; his wife left him during his hospitalisation, expressing that she could not accept his condition. This experience intensified his psychological distress and feelings of abandonment.

Before the accident, Thabani was physically active and health-conscious, regularly engaging in gym workouts, motorbike riding, long walks, and playing soccer with his children. The sudden loss of mobility and independence marked a stark contrast to his previous lifestyle. However, he demonstrated remarkable psychological resilience. He described a pivotal moment of acceptance, during which he requested solitude in the hospital to process the reality of his condition. From that point forward, he committed to embracing life with determination and self-love.

Thabani did not find formal psychological intervention particularly helpful, noting that the assigned therapist contributed little to his recovery. Instead, he found strength through self-reflection, spiritual resilience, and reading, particularly a book on forgiveness by Joyce Meyer, which helped him process the emotional trauma of his wife's departure and the

actions of the drunk driver. He stressed the importance of forgiveness as a personal journey and credited it with enabling him to move forward.

Today, Thabani leads an active and independent life. He continues to ride motorbikes, swim, drive, and engage in activities that defy common assumptions about disability. He rejects the label of disabled, viewing himself as fully capable despite the loss of a limb. His story reflects a powerful narrative of survival, acceptance, and transformation, underscoring the importance of psychological resilience, self-determination, and the redefinition of identity following traumatic limb loss.

Healthcare Professionals Participants

Table 4.3

Healthcare Professionals

Number	Pseudonym	Profession	Interview Technique
Participant 1	Carol	Physiotherapist	Responded via Email
Participant 2	Jake	Orthopaedic Surgeon	Virtual Interview via MS Teams
Participant 3	Paul	Certified Prosthetist Orthotist	Face-to-face
Participant 4	Rick	Certified Prosthetist Orthotist	Face-to-face
Participant 5	Yolanda	Certified Prosthetist Orthotist	Responded via WhatsApp

Participant 1: Carol (Physiotherapist)

Carol is a qualified physiotherapist with experience in both the public and private healthcare sectors in South Africa. She obtained her physiotherapy degree in 2003 and completed a Master's in Rehabilitation Science in 2018. Over the past two decades, she has worked in a multidisciplinary rehabilitation setting that provided services across various domains, including neurology, vestibular rehabilitation, oncology, amputations, and chronic pain. The multidisciplinary team comprised physiotherapists, occupational therapists, speech therapists, and psychologists.

In her most recent role as a senior physiotherapist and clinical executive, Carol was responsible for designing evidence-based rehabilitation programmes. She emphasised that psychological intervention should be a core component of the rehabilitation process for amputee patients. According to her, the need for psychological support often becomes more pertinent after discharge, as patients begin to confront new functional limitations and altered life roles. She confirmed the importance of ongoing psychological input in enabling positive reintegration into daily life following traumatic amputation.

Participant 2: Jake (Orthopaedic Surgeon)

As an orthopaedic surgeon, Jake is authorised to perform a variety of procedures and treatments, including surgical interventions (joint replacements, fracture repairs, amputations, and corrective surgeries for deformities), non-surgical treatment (prescribing medications, physical therapy, and other rehabilitation methods), diagnostic procedures (use of imaging techniques like X-rays, MRIs, and CT scans to diagnose musculoskeletal conditions) and patient management (overseeing the overall care of patients).

Jake is an experienced private practitioner with over 15 years of clinical practice, including prior service in the public health sector. Throughout his career, he has performed a substantial number of amputations, encompassing both elective (planned) and emergency (traumatic) procedures. He emphasises the profound differences between these two categories of amputation, noting that they diverge significantly in terms of clinical approach, patient experience, and psychosocial outcomes.

In the case of elective amputations, typically necessitated by chronic illness, congenital deformities, or non-healing wounds, patients are allowed to prepare both mentally and physically for the impending loss of a limb. This preparatory period allows for comprehensive preoperative counselling, psychological support, and the involvement of the patient's support network, including family and close friends. According to Jake, this

collaborative preparation facilitates a more structured and supportive transition through surgery, recovery, and rehabilitation.

On the contrary, traumatic amputations often occur under emergent conditions, such as accidents or severe injuries, where immediate surgical intervention is required to save the patient's life. In many instances, the patient is unconscious or otherwise incapacitated at the time the decision to amputate is made. In extreme cases, the amputation may be performed at the scene of the incident. As a result, patients frequently regain consciousness only to discover that a limb has been removed, without having had the opportunity to process the procedure beforehand.

Jake asserts that psychological care should be considered a fundamental component of treatment for all amputees, irrespective of whether the amputation was planned or traumatic. He contends that integrating psychological support into both the preoperative and postoperative phases can significantly enhance patient outcomes. Such support enables individuals to navigate the grieving process, adjust to their altered physical state, and reintegrate more effectively into their communities and daily lives.

Participant 3: Paul (Certified Prosthetist Orthotist (CPO))

Paul has 14 years of professional experience in the private healthcare sector in South Africa. CPOs are highly trained healthcare professionals responsible for the assessment, design, fitting, and ongoing management of orthotic and prosthetic devices for individuals with physical impairments. Their role is integral to the rehabilitation process and to enhancing the quality of life for patients with limb loss or musculoskeletal conditions.

In addition to his professional qualifications, Paul is himself an above-knee amputee. His leg was amputated in his early twenties following a prolonged and painful medical journey that began with a diagnosis of bone cancer at the age of ten. His personal experience with limb loss was a significant motivating factor in his decision to pursue a career in

prosthetics and orthotics. Paul's lived experience as an amputee provides him with a unique and empathetic perspective on the challenges his patients face, enabling him to offer care that is both clinically informed and deeply compassionate.

Paul is regarded as a practitioner with a positive outlook and a strong commitment to patient-centred care. He is particularly passionate about improving the standard of care for amputees in South Africa and is an advocate for the integration of psychological support into the rehabilitation process. Drawing on his professional and personal experiences, Paul emphasises the critical role that psychological care plays in the overall recovery and adaptation process for amputee patients. He has worked in rehabilitation settings with differing approaches to psychological care. In one practice, psychological support was embedded into the standard rehabilitation protocol, with a multidisciplinary team comprising psychologists, counsellors, and social workers working in close collaboration with the physical rehabilitation team. Paul observed that patients in this setting adapted to their prosthetic devices more rapidly and achieved better overall rehabilitation outcomes.

In contrast, he also worked in a practice where psychological care was not routinely offered. In this context, he noted that patients often struggled with the emotional and psychological aspects of limb loss, which in turn delayed their physical rehabilitation. These patients typically required more frequent consultations and took longer to adapt to their prostheses. Paul further highlighted the financial barriers that many patients face, noting that limited resources often force individuals to prioritise physical rehabilitation over psychological care. However, he argues that a holistic approach, one that integrates both physical and psychological support, is essential for optimal rehabilitation outcomes.

Participant 4: Rick (Certified Prosthetist Orthotist)

Rick has 24 years of experience in South Africa's private healthcare sector, having qualified in 2001. He emphasised that traumatic amputations are typically sudden and

unexpected, often resulting in psychological responses such as shock, grief, and despair. Based on his clinical experience, Rick asserted that patients who receive psychological support demonstrate significantly better coping mechanisms and rehabilitation outcomes compared to those who do not. He stressed the need for the integration of psychological care as a core component of the rehabilitation process, arguing that it equips patients with essential emotional tools to accept their limb loss and adapt to a fulfilling life post-amputation. To illustrate this, Rick described a case involving a patient eager to resume walking. However, the rehabilitation process, comprising wound healing, stump shaping, casting, and prosthetic fitting, is often prolonged and subject to complications and administrative delays, such as medical aid authorisations.

In this context, Rick highlighted the critical role of psychological support in managing patient expectations and emotional resilience. He noted that without such support, patients may misdirect frustration toward clinicians, as seen in the aforementioned case. He concluded that psychological care should be introduced early in the rehabilitation journey to help patients navigate the multifaceted challenges of post-amputation recovery, beyond the physical loss itself.

Participant 5: Yolanda (Certified Prosthetist Orthotist).

Yolanda is a private practitioner with over a decade of experience in post-amputation care. She reported that nearly all patients she has encountered following traumatic amputation exhibit symptoms of psychological distress, including post-traumatic stress disorder (PTSD), depression, body image disturbances, and negative self-perception. She further noted that traumatic amputations often preclude optimal surgical planning for the residual limb, potentially necessitating additional corrective surgeries, which can exacerbate body image concerns.

Yolanda observed a marked difference in rehabilitation outcomes between patients who received psychological support and those who did not. In her experience, the absence of psychological intervention is frequently associated with maladaptive coping behaviours such as substance abuse, emotional dysregulation, relationship breakdowns, and difficulty reintegrating into the workforce. Conversely, patients who engage in counselling demonstrate improved body image, more effective grief processing, and better overall adjustment. These benefits also extend to caregivers and family members, who are better equipped to support the patient during recovery.

She views psychological care as indispensable to rehabilitation, on par with or more important than receiving a prosthesis. Yolanda emphasised that mental health support is essential throughout each phase of recovery and that involving caregivers in this process can strengthen long-term family dynamics, thereby enhancing the patient's support system and overall rehabilitation outcomes.

Chapter Summary

In summary, this chapter provided an in-depth overview of the participants who formed the quantitative and qualitative components of this study. By outlining the demographic characteristics, professional backgrounds, and lived experiences of amputee patients and healthcare professionals, the chapter established the contextual foundation for interpreting the study's subsequent findings. These detailed profiles illuminate the diverse pathways through which individuals encounter and navigate traumatic limb loss, as well as the varied roles of psychological intervention across different circumstances and recovery trajectories.

Understanding the nuances within these participant groups is essential for interpreting the patterns, themes, and relationships discussed in the chapters that follow. The next chapter presents the quantitative findings, offering a statistical perspective on body image and self-

esteem outcomes among amputees with and without psychological intervention. This is followed by a qualitative analysis that explores the lived experiences, meaning-making processes, and psychosocial dimensions of recovery as articulated by participants. Together, these findings provide a comprehensive understanding of the psychological implications of post-traumatic amputation and the potential impact of psychological support on rehabilitation and adaptation.

Chapter 5: Quantitative Research Findings and Discussion

This chapter presents the analysis and interpretation of the study's quantitative data. The researcher first examined the results of the quantitative online survey, followed by a critical evaluation of these findings. To answer the research question and address the study's aims, a sequential explanatory mixed-methods design was employed.

The research question steering the study was: Is there a difference in the level of body image and self-esteem between trauma-related amputees who have undergone psychological intervention (group 1), compared to the trauma-related amputees who have not undergone psychological intervention (group 2)? The research aims were:

Aim 1 was to compare levels of self-esteem and body image among post-trauma amputee patients who have received psychological intervention and those who have not.

Aim 2 was to explore amputees' subjective perceptions of self-esteem and body image following traumatic limb loss, and this will be explored in the qualitative research chapter.

Hypotheses to address Aim 1

Null Hypothesis (H_0): There is no significant difference in self-esteem and body-image levels between post-trauma amputee patients who have received psychological intervention and those who have not.

Alternative Hypothesis (H_1): There is a significant difference in self-esteem and body-image levels between post-trauma amputee patients who have received psychological intervention and those who have not.

Descriptive statistics

A total of 40 participants completed the quantitative online surveys (the *Multidimensional Body-Self Relations Questionnaire (MBRSQ)* and The *Rosenberg Self-Esteem* questionnaire). As reflected in Table 5.1 below, the sample consisted predominantly of male respondents ($n = 30$, 75%), with female participants accounting for 25% ($n = 10$).

Table 5.1*Participant Demographics and Characteristics*

Sample Characteristics	Frequency (n= 40)	Percent %
Sociodemographic Characteristics		
Age Bands		
18-25	5	12,5
26-35	7	17,5
36-45	8	20
46-55	8	20
56-65	9	22,5
65+	3	7,5
Gender		
Female	10	25
Male	30	75
Prefer not to say	0	0
Ethnicity		
Black	4	10
Coloured	1	2,5
White	35	87,5
Amputation Cause		
Illness	15	37,5
Trauma	25	62,5
Psychological Support		
No	25	62,5
Yes	15	37,5

Participants ranged in age from 18 to 65+ years, distributed across the following age bands: 18–25 (n = 5; 12.5%); 26–35 (n = 9; 22.5%); 36–45 (n = 9; 22.5%); 46–55 (n = 8; 20%); 56–65 (n = 7; 17.5%), and 65+ (n = 2; 5%).

In terms of race, the majority identified as White (n = 35; 87.5%), with Black participants representing 10% (n = 4; 10%), and one participant identifying as Coloured (n = 1; 2.5%).

Most respondents had undergone a traumatic amputation ($n = 25$; 62.5%), while 15 participants (37.5%) reported amputation due to illness.

The time lapsed since the amputation varied, with 15% occurring in <1 year ($n = 6$); 22.5% occurring between 1–3 years ago ($n = 9$; 12.5% occurring 3–5 years ago ($n = 5$), and the largest proportion, 50%, having experienced amputation more than five years ago ($n = 20$).

Regarding psychological interventions, 25 participants (62.5%) reported not receiving psychological counselling, whereas 15 participants (37.5%) indicated that they had accessed such support.

Overall, the demographic and clinical profile reflects a predominantly white, male, middle-aged group, with amputation histories extending across a wide range of timelines and fewer than half having received psychological counselling following their limb loss.

Quantitative data were collected through an anonymous online survey that incorporated items from two validated measurement instruments: the Multidimensional Body-Self Relations Questionnaire (MBSRQ; Cash, 1990) and the Rosenberg Self-Esteem Scale (Rosenberg, 1965).

The *Multidimensional Body-Self Relations Questionnaire (MBRSQ)* (see Table 5.2 below) ranked participants' scores on body-image as having low, medium or high body image levels (Cash, 1990). Out of the 40 overall participants, 13 ranked low (32.5%); 14 ranked medium (35%) and 13 ranked high (32.5%).

From the 25 participants who indicated trauma as the amputation cause, 8 ranked low (32%), 11 ranked medium (44%), and 6 ranked high (24%).

Amongst the 25 participants with amputation cause resulting from trauma (group 1), 11 (44%) indicated that they received psychological support, whilst 14 (56%) reported not receiving any psychological counselling (group 2).

Table 5.2*MBRSQ Body Image Levels Among Trauma-Amputee Participants*

Group	Low	Medium	High	Total
Group 1: Received psychological support	5 (45.5%)	3 (27.3%)	3 (27.3%)	11 (100%)
Group 2: No psychological support	3 (21.4%)	8 (57.1%)	3 (21.4%)	14 (100%)
Total	8	11	6	25

Note. N = 25. Percentages are row percentages (calculated within each group) and are rounded to one decimal place. Rankings reflect the level of body image in low, medium, and high categories.

The *Rosenberg Self-Esteem* questionnaire score interpretation ranges (see Table 5.3 below) are: 0-14 = low self-esteem with negative self-perception, often associated with depression or anxiety; 15-25 = normal/average self-esteem, generally positive self-regard, but with some fluctuations; 26-30 = high self-esteem; strong self-worth, confidence, and positive self-acceptance (Rosenberg, 1965).

From the 25 participants who indicated trauma as the amputation cause, 5 ranked low (20%), 5 ranked normal (20%), and 15 ranked high (60%). In group 1, 3 ranked low (27%), 1 ranked normal (9%) and 7 ranked high (64%). In group 2, 2 ranked low (14%), 4 ranked medium (29%) and 8 ranked high (57%).

Table 5.3*Self-Esteem Levels Among Trauma-Amputee Participants*

Group	Low	Normal	High	Total
Group 1: Received psychological support	3 (27%)	1 (9%)	7 (64%)	11 (100%)
Group 2: No psychological support	2 (14%)	4 (29%)	8 (57%)	14 (100%)
Total	5 (20%)	5 (20%)	15 (60%)	25 (100%)

Note. N = 25. Percentages are row percentages (calculated within each group) and are rounded to one decimal place. Rankings reflect the level of body image in low, medium, and high categories.

Table 5.4*Self-Esteem Scores by Cause of Amputation*

Cause of Amputation	Low	Normal	High	Total
Trauma	5 (20%)	5 (20%)	15 (60%)	25 (100%)
Illness	4 (27%)	5 (33%)	6 (40%)	15 (100%)
Total	9	10	21	40

Note. N = 40. Results from the Rosenberg Self-Esteem Questionnaire. Percentages are calculated within each cause-of-amputation group (row percentages). Resilience was categorised as low, normal, or high.

Comparing body image and self-esteem across the two groups

The results between the two groups did not reach statistical significance in the body-image or the self-esteem measures. These results could potentially be a result of the relatively small sample size.

Table 5.5*Results of Body Image Scores between Participants in Group 1 and Group 2*

Group	Frequency (n= 25)	Mean	SD
Counselling = Yes (Group 1)	11	2.953	1.015
Counselling = No (Group 2)	14	3.225	0.844
Welch t-test: $t(19.42) = -0.718$, $p = 0.481$ (two-tailed)			
Mean difference (Yes – No) = -0.273, 95% CI [-1.067, 0.4222]			
Hedge's $g = -0.286$			
Levene's test: $W = 0.674$, $p = 0.420$			

Body Image Scores

To examine whether counselling was associated with differences in body image among individuals who had experienced a traumatic amputation (see Table 5.5 above), an independent Welch's t -test was conducted comparing Body Image Scores between participants who reported receiving counselling and those who did not (Jan, & Shieh, 2014; Welch, 1947). Analysis indicated no statistically significant difference between the

counselling group ($n = 11$, $M = 2.95$, $SD = 1.01$) and the non-counselling group ($n = 14$, $M = 3.23$, $SD = 0.84$), $t(19.42) = -0.72$, $p = .48$, suggesting that counselling status did not meaningfully influence body image in this sample.

The mean difference between groups (-0.27) was small and accompanied by a 95% confidence interval $[-1.07, 0.52]$, further indicating a lack of significant group differences. Consistent with this interpretation, the effect size (Hedges' $g = -0.29$) fell within the small range, implying limited practical significance (Hedges, 1981). Additionally, Levene's test confirmed no violation of variance homogeneity, $W = 0.67$, $p = .42$, supporting the suitability of the Welch test output (Levene, 1960). Overall, these findings suggest that, within this dataset, counselling was not associated with improved or worsened body image outcomes among individuals with traumatic amputations.

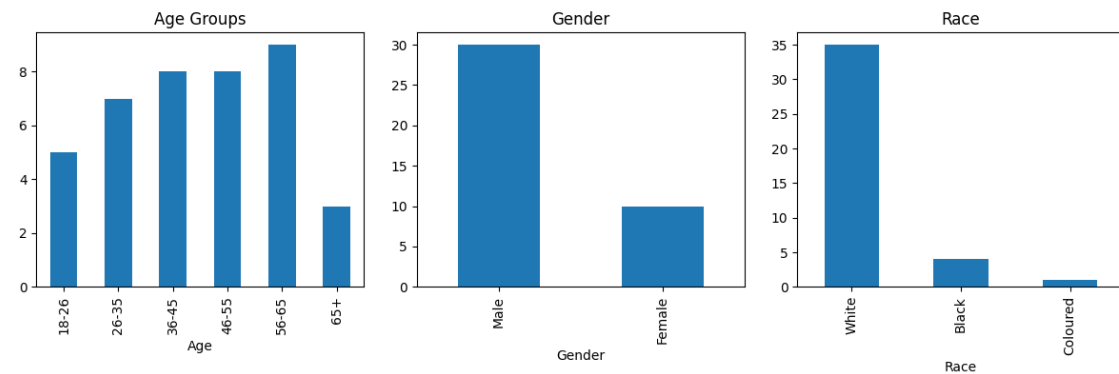
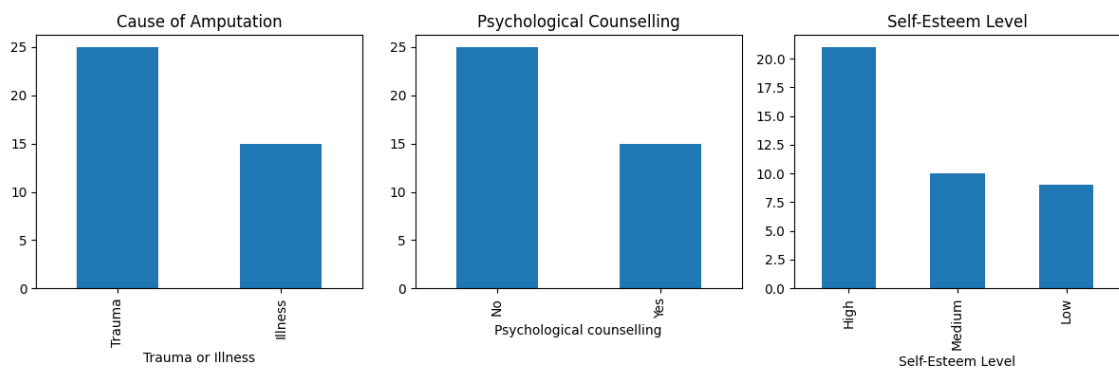
Table 5.6

Results of Self-Esteem Scores between Participants in Group 1 and Group 2

Group	Frequency (n= 25)	Mean	SD
Counselling = Yes (Group 1)	11	32.00	7.11
Counselling = No (Group 2)	14	28.28	6.14
Welch t-test: $t = 1.68$, $p = 0.104$			

Self-Esteem Scores

An independent samples t -test assessed whether self-esteem differed between participants who had received psychological counselling and those who had not. Although participants who received counselling reported slightly higher self-esteem ($M = 32.00$, $SD = 7.11$) compared with those who did not ($M = 28.28$, $SD = 6.14$), this difference was not statistically significant, $t = 1.68$, $p = .104$. While not conclusive, the direction of the mean difference suggests a possible positive association between counselling and self-esteem.

Figure 5.1*Age, Gender Race***Figure 5.2***Cause of Amputation, Psychological Counselling, Self-Esteem Level*

Discussion of Results

The purpose of the analysis was to explore whether self-esteem varied as a function of psychological counselling status (received vs. not received). Self-esteem was assessed using the Rosenberg Self-Esteem Scale (RSES), a robust and widely applied measure of global self-worth. Participants who received psychological counselling had higher mean self-esteem scores than those who did not; however, this difference was not statistically significant. Despite the lack of statistical significance, the observed trend aligns with existing research suggesting that psychological interventions can support emotional adjustment following major physical trauma. The absence of significant group differences may reflect the relatively small sample size or variability in the timing, duration, and type of counselling received.

These factors may obscure the potential benefits of counselling on self-esteem in quantitative analyses.

To address the primary research question, whether psychological intervention influences self-esteem and body image among trauma-related amputees, a subset analysis was conducted including only participants with trauma-related amputations. Participants were compared based on their counselling status. Those who received counselling ($n = 11$) reported slightly higher self-esteem ($M = 31.55$, $SD = 7.78$) than those who did not ($n = 14$; $M = 29.71$, $SD = 6.16$). However, this difference was not statistically significant, $t(23) = 0.64$, $p = .530$, and the effect size was small ($d = 0.27$). These findings suggest that although counselling may have modest benefits, these were not strong enough to reach statistical significance within the trauma-only group.

Collectively, the findings indicate that neither cause of amputation nor psychological counselling status significantly predicted self-esteem among participants. Nonetheless, consistent trends across analyses suggest that psychological counselling may hold potential value for supporting self-esteem, even if this effect was not detectable statistically in the current sample. These observations reinforce the importance of accessible psychological support in post-amputation care.

Among the 40 survey participants, 15 reported receiving psychological counselling following amputation, whereas 25 indicated they had not accessed such support. This distribution aligns with existing literature, which consistently highlights that psychological counselling is not routinely provided to the majority of amputee patients during rehabilitation (Ali et al., 2018; Thompson & Haran, 1984). Despite the known need for psychological support in amputee rehabilitation, such services are frequently absent from standard care protocols. This omission is often linked to limited awareness among healthcare professionals and patients regarding the critical role of mental health in recovery and adjustment (Ali et al.,

2018; Thompson & Haran, 1984). Socioeconomic constraints, including lower income levels and inadequate social support networks, further restrict access to psychological interventions for many individuals (Ali et al., 2018; Cotigă et al., 2020). Additionally, a pervasive lack of understanding and utilisation of available mental health resources persists, with patients and their families frequently unaware of how to access these services (Thompson & Haran, 1984). Addressing these barriers requires targeted educational initiatives and systemic integration of psychological care within multidisciplinary rehabilitation frameworks.

The limited participation of amputee patients in psychological research is a complex issue shaped by multiple interrelated factors. Historically, studies have often grouped amputees with broader categories of orthopaedic disabilities, such as poliomyelitis and scoliosis, which obscures their distinct psychological needs (Siller, 1960). Recruitment challenges further exacerbate this gap, as amputation is associated with profound psychological consequences, including depression, anxiety, post-traumatic stress disorder (PTSD), phantom limb experiences, and body image disturbances, that may hinder research engagement (Abouammoh et al., 2021; Bonilla-Flores, 2024; Cotigă et al., 2020). Socio-demographic variables, including age, marital status, and cultural context, also influence psychological adjustment and willingness to participate in studies (Cotigă et al., 2020; Ohenewa et al., 2025). Moreover, inadequate psychological preparation and support before and after surgery, coupled with the absence of integrated screening and interventions, further limit opportunities for research inclusion (Islam & Javed, 2025; Loyal & Hanna, 2024; Nunes et al., 2012). Addressing these barriers through targeted, culturally sensitive strategies and comprehensive mental health support is essential for improving amputees' participation in research and enhancing their overall quality of life.

The absence of significant differences in single-factor analyses aligns with the conservative nature of Welch's test under conditions of small, unbalanced samples and

variance heterogeneity. The detection of significant interactions in two-factor models highlights the complexity of body-image outcomes and suggests that averaging over one factor may obscure differences that emerge conditionally on another. These findings underscore the importance of considering interaction effects in psychological and health-related research.

Interesting Additional Trends and Visual Observations

Visual summaries (boxplots/means $\pm$ CIs) suggested apparent trends (e.g., higher means for middle-aged groups compared to others; higher perceived body-image scores the further in the past amputation was conducted). However, visual differences are not a substitute for statistical significance – especially under small sample sizes – and they should be framed as hypotheses for future verification (Norman, 2010; Carifio & Perla, 2008).

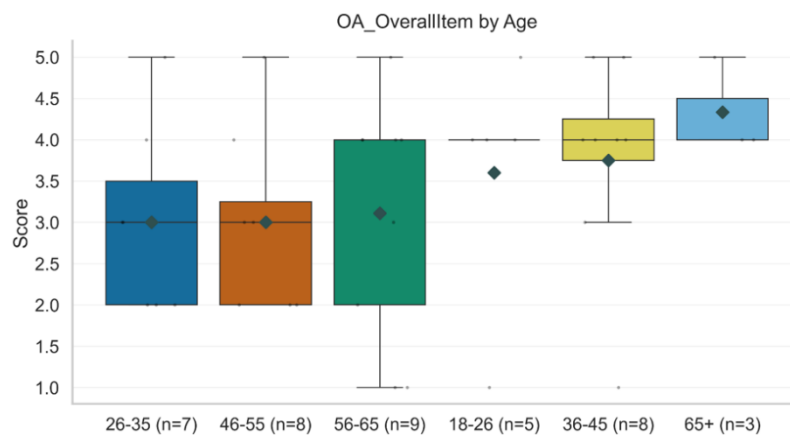
Table 5.7

Key for the terms used in the titles of the graphs:

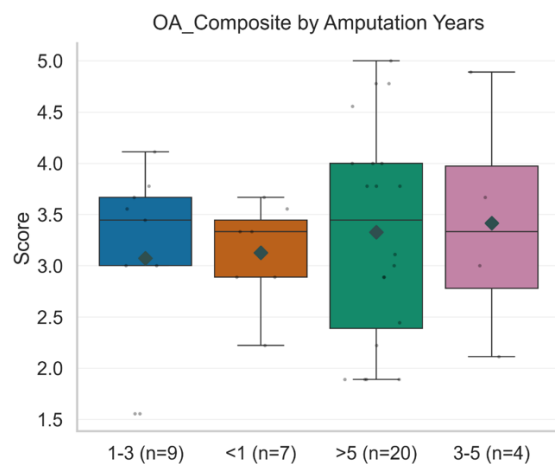
Key	Description
OA_Overallitem	The average Likert score across all survey answers
AG_Score	The average Likert score across survey question answers that were focused on Appearance and Grooming
PF_Score	The average Likert score across survey question answers that were focused on Physical Fitness and Health
BI_Score	The average Likert score across survey question answers that were focused on Body Image & Weight Concerns
EX_Score	The average Likert score across survey question answers that were focused on Exercise/Sport Involvement & Priority
HL_Score	The average Likert score across survey question answers that were focused on Health Awareness & Lifestyle
IV_Score	The average Likert score across survey question answers that were focused on Illness Susceptibility & Vigilance
OA_Composite	OA_Composite is the average Likert score across survey question answers that were focused on Overall Appearance Rating

Figure 5.3

Likert scores averaged across survey answers across Age groups

**Figure 5.4**

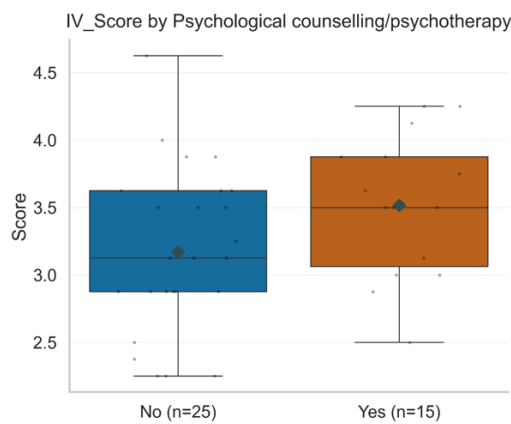
Likert scores averaged across survey answers across years since Amputation



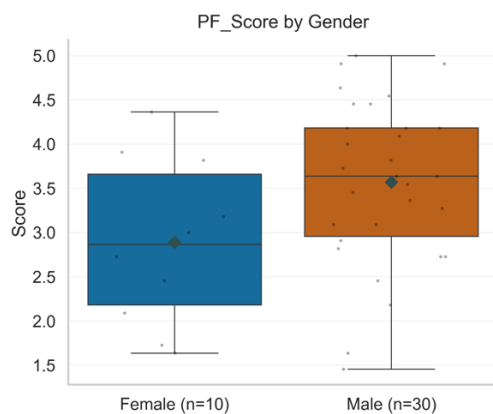
It is interesting to note from *Figure 5.5* below that amputee patients who have undergone psychological treatment scored higher on average across survey question answers that were focused on Illness Susceptibility & Vigilance. This might suggest that these patients have a greater perceived vulnerability to illness and higher health vigilance, meaning the individual is more cautious, attentive to symptoms, and possibly more proactive in health-related behaviours. This could correlate with heightened health anxiety or preventive health behaviours.

Figure 5.5

Likert scores averaged across survey answers across attendance of psychotherapy

**Figure 5.6**

Likert scores averaged across survey answers across Gender

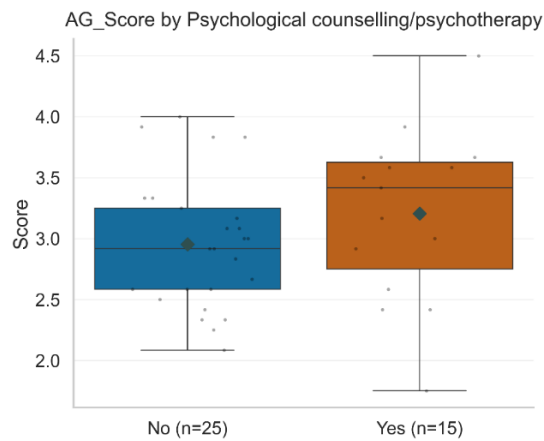


Patients who have undergone psychological counselling scored higher on average across survey question answers that were focused on Appearance and Grooming, versus patients who have not had any psychological counselling. Again, there is no statistically significant difference, but it is noteworthy that the first group of patients, i.e. those who received psychological counselling, scored higher in this instance than the group of patients with no psychological counselling, referring to *Figure 5.7* below. A higher average score on items related to appearance and grooming might suggest that participants place significant emphasis on maintaining personal aesthetics and physical presentation. This tendency may reflect heightened self-awareness. In the context of amputee patients, elevated scores could

indicate an increased sensitivity to body image concerns, which are often amplified following limb loss (Holzer et al., 2014; Sarroca et al., 2021). These scores may also signal adaptive coping strategies, where attention to grooming serves as a mechanism for preserving self-esteem and social identity despite physical alterations (Gilg, 2016).

Figure 5.7

Likert scores averaged across survey question answers that were focused on Appearance and Grooming

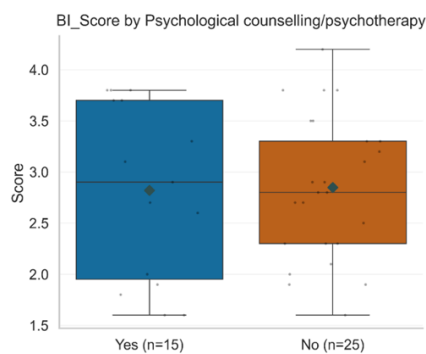


A wider range of average Likert scores on body image and weight concerns (*Figure 5.8*) among amputee patients who have undergone psychological counselling suggests heterogeneous responses to therapeutic interventions. High scores may indicate persistent dissatisfaction with appearance and heightened sensitivity to weight-related issues, reflecting challenges in achieving body image acceptance despite counselling efforts (Rybarczyk et al., 1995; McDonald et al., 2021). Conversely, lower scores could signify successful adjustment, improved self-perception, and reduced salience of physical appearance in overall well-being (Calabrese et al., 2023; Sarroca et al., 2021). This variability underscores the individualised nature of psychological recovery following limb loss, influenced by factors such as coping strategies, cultural norms, and social support systems (Rybarczyk et al., 2008; Maffoni et al., 2025). Consequently, these findings highlight the need for tailored counselling approaches

that address body image concerns as a dynamic and context-dependent aspect of rehabilitation.

Figure 5.8

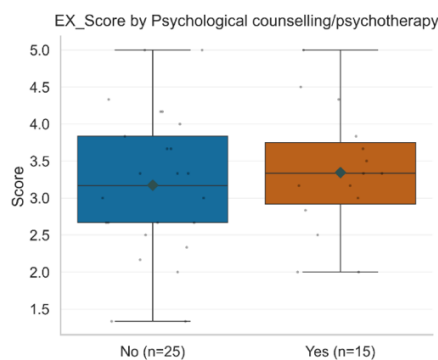
Likert scores averaged across survey question answers that were focused on Body Image & Weight Concerns



Analysis of scores related to Exercise/Sport Involvement and Priority (*Figure 5.9*) revealed minimal differences between the two groups. The group without psychological counselling exhibited a slightly broader score range and marginally higher upper values compared to those who received counselling; however, these variations were not sufficient to support meaningful interpretation.

Figure 5.9

Likert scores averaged across survey question answers that were focused on Exercise/Sport Involvement & Priority

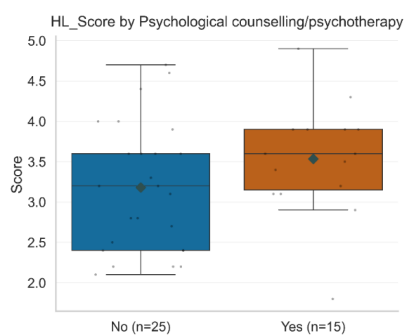


Analysis of scores related to Health Awareness and Lifestyle (*Figure 5.10*) reflected a higher rating from patients who have undergone psychological counselling compared to those who have not.

Figure 5.10

Likert scores averaged across survey question answers that were focused on Health

Awareness & Lifestyle

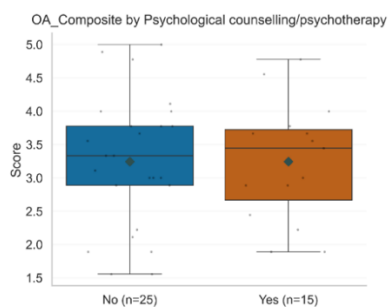


Analysis of scores related to Overall Appearance Rating (*Figure 5.11*) revealed minimal differences between the two groups. The group with psychological counselling exhibited a slightly broader score range and similar higher upper values compared to those who had not received counselling; however, these variations were not sufficient to support meaningful interpretation.

Figure 5.11

Likert scores averaged across survey question answers that were focused on the Overall

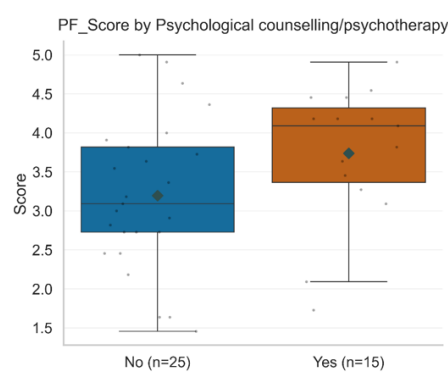
Appearance Rating



Analysis of scores under Physical Fitness and Health (*Figure 5.12*) reflected a higher rating from patients who have undergone psychological counselling versus those who have not.

Figure 5.12

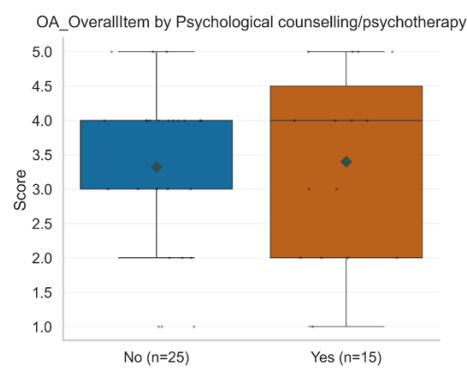
Likert scores averaged across survey question answers that were focused on Physical Fitness and Health



Analysis of scores across all survey answers (*Figure 5.13*) reflected a higher rating from patients who have undergone psychological counselling compared to those who have not.

Figure 5.13

Likert scores averaged across survey question answers across all survey answers



Chapter Summary

The research question that steered the study was: Is there a difference in the level of body image and self-esteem between trauma-related amputees who have undergone psychological intervention (group 1), compared to the trauma-related amputees who have not undergone psychological intervention (group 2)? While descriptive trends suggest that Group 1 scored higher across all survey domains, these observations lack statistical significance. Consequently, although the findings indicate potential hypotheses, definitive conclusions require further data collection and analysis to substantiate the observed patterns.

In summary, the analysis provides a cautious but informative assessment of body-image and self-esteem outcomes across demographic and clinical factors. The results highlight the need for larger, more representative samples and suggest that future research should explore interaction effects in greater detail. The methodological approach, combining robust statistical tests, serves as a model for similar studies facing challenges of small sample sizes and heteroscedasticity.

Chapter 6: Findings and Discussion from Qualitative Interviews

This chapter presents the analysis and interpretation of the study's qualitative data. The data from the semi-structured interviews were analysed using thematic analysis, supported by direct excerpts from the interviews. Atlas.ti software (2025) was used in the development of the relevant themes. These findings are further contextualised through integration with relevant academic literature, thereby situating the results within the broader academic discourse on post-traumatic amputation and psychological rehabilitation.

Findings from Qualitative Research: Healthcare Professionals and Patient Participants

The thematic analysis elicited eight main themes and related sub-themes, as shown in Table 6.1 below. An integrated discussion of each theme will follow below. Excerpts from discussions with healthcare professionals will be indicated in the quotes where applicable.

Table 6.1

Themes uncovered from interviews with healthcare professionals and patients

Theme	Subtheme
1. Psychological Impact of Amputation	
2. Identity, Body Image and Self-Perception	
3. Coping Mechanisms	
4. Role of Healthcare Professionals	
5. Challenges Faced in the Post-Amputation Adjustment Process	5.1 Loss of Identity and Frustration as Core Post-Amputation Challenges 5.2 Dependence, Isolation, and Misunderstood Limitations Post-Amputation 5.3 Phantom Pain and Mental Resilience in Post-Amputation Recovery 5.4 Redirection of Life Goals and Physical Limitations in Post-Amputation Experience 5.5 Psychosocial Impact and the Role of Social Environment in Post-Amputation Recovery 5.6 Early-Life Trauma, Identity Disruption, and Long-Term Psychological Adjustment

Theme	Subtheme
	5.7 Loss of Autonomy, Emotional Trauma, and Social Rejection in Post-Amputation Adjustment
6. Healthcare and Rehabilitation	6.1 Collaboration and the Prosthetist's Role 6.2 Patient Trajectories and Personalised Pathways 6.3 Access and System Constraints 6.4 Psychological Readiness and Prosthetic Fitting 6.5 Traumatic Versus Elective Pathways
7. Long-Term Adaptation	7.1 Patients' Lived Experiences 7.2 Integrative Evidence
8. Call for Systemic Change	8.1 Mental Health as a Core Component of Care 8.2 Holistic and Individualised Rehabilitation Models 8.3 Early Intervention and Informed Support 8.4 Peer Mentorship and Community-Based Support 8.5 Public Awareness and Social Inclusion

Theme 1: Psychological Impact of Amputation

The psychological impact of sudden, trauma-related limb loss is profound and often enduring, disrupting patients' emotional stability, self-perception, and quality of life. Individuals commonly describe the immediate post-amputation phase as intensely destabilising, characterised by overwhelming shock, deep grief, and pervasive confusion upon regaining consciousness in hospital and confronting the abrupt absence of a limb, often without prior psychological preparation or timely supportive interventions. This sudden confrontation frequently initiates a complex grieving process marked by intense feelings of helplessness, despair, and vulnerability, which can delay progression from denial to acceptance and hinder early adaptive coping. Patient participants described the immediate aftermath of amputation as emotionally destabilising, marked by shock, grief, and confusion. Many regained consciousness in hospital only to be confronted with the unexpected reality of their limb loss, often without psychological preparation or structured early support. Patient accounts highlighted the lived reality of these psychological effects.

Kevin (Pt): “Emergency services had to perform surgery on the scene before taking me to hospital. Mentally, I was scarred.”

Richard (Pt): “It’s been 17 years later, and I still get my down days about my situation, and it doesn’t get easier... Always going to be ups and downs where that’s concerned, and then still have to deal with life.”

Kevin (Pt) reported severe psychological distress following his amputation, including depressive symptoms, alcohol misuse, and excessive reliance on prescribed psychiatric medication. A period of withdrawal to his family’s farm facilitated a critical moment of self-reflection, during which he discontinued alcohol and medication as part of a broader effort to regain agency. He noted that temporary removal from stressful environments, combined with self-care practices, supported emotional stabilisation. Although he continues to experience episodic sadness, intentional solitude, and strategic withdrawal from daily pressures have become central to his long-term coping.

Kevin (Pt): “I had a drinking problem for a while and was very depressed, especially in the beginning. I would then take the pills that I received initially from the psychiatrist...who told me to take it whenever I felt bad. I constantly had a voice in my head telling me that I am feeling bad, so I kept taking the pills. I was in a very dark place... I decided to go to my family’s farm for about two months. This was where I reached a turning point and decided to flush all the pills down the toilet. I also poured all the alcohol down the drain. I then showered and shaved and decided this was not the kind of life I wanted. My saving grace was that I could break away and get away from circumstances and all the negativity...this is what we all need when life gets too difficult. I still have times when I feel down and sad about life, but I then take time off and break away...this is how I cope with the difficult times.”

These lived experiences align with the elevated prevalence of mental health conditions, such as depression, anxiety, post-traumatic stress disorder (PTSD), and phantom limb phenomena, which contribute to significant impairments in daily functioning and overall well-being (Cotigă et al., 2020; Sahu et al., 2017). Two of the seven patients (Charl and Kevin) reported using opioids and alcohol as coping mechanisms for their mental health issues.

Healthcare professionals observe that traumatic, unplanned amputations elicit more severe grief, helplessness, and despair than elective procedures, and that delayed emotional adjustment complicates rehabilitation.

Yolanda (HCP): “There is a dramatic difference between patients who receive counselling and those who do not. I have found that patients who do not have intervention are more prone to substance abuse, fits of rage and anger, breakdown in relationships, difficulty returning to the workplace, and overall have a negative narrative.”

These findings align with various studies in this regard (Lange & Heuft, 2001; Mostovaya et al., 2021; Sahu et al., 2017; Peroni et al., 2017). These difficulties are often compounded by reduced functional capacity and limited earning potential (Ranti et al., 2015). PTSD occurs in roughly 20.3% of amputees, frequently co-occurring with phantom limb pain, with younger trauma survivors particularly vulnerable (Sahu et al., 2017). Disruptions in physical and role functioning further diminish overall quality of life (Cotigă et al., 2020). Despite these challenges, early psychological intervention and comprehensive pain management have been shown to improve rehabilitation outcomes and long-term adjustment (Skoff & Skoff, 2022).

Collectively, the participants emphasised an absence of early, sustained, and accessible psychological care as a key gap in facilitating emotional adjustment, underscoring

the necessity for integrated, stigma-reducing mental health support embedded within holistic rehabilitation frameworks to address these enduring psychological burdens.

Theme 2: Identity, Body Image and Self-Perception

Patient narratives revealed that amputation significantly altered self-perception and body image, often triggering a complex emotional response marked by grief, frustration, and gradual adaptation. Many participants described a shift in identity, moving from physically active, independent individuals to persons grappling with new limitations and increased dependency. The loss of physical capabilities, such as engaging in sports or performing routine tasks, was frequently cited as a source of emotional distress. Despite these challenges, some individuals reported developing resilience and a deeper appreciation for life, suggesting that acceptance and personal growth can coexist with ongoing grief.

Charl (Pt): “The biggest challenge for me has been how you need to shift your identity, how you have to let go of a part of you that you used to be, redefine who you are, what your abilities are and come to terms with that. I felt like, this is not me, and it happened overnight. I don’t know what the right word is, but I mean I felt as though my body was contaminated because of the constant infection.”

Richard (Pt): “It was difficult accepting how I looked physically and not being as mobile as I was a month before. There are still some days, even after 17 years, that I can't see myself without my prosthetic limb on.”

Participants reported that the emotional consequences of limb amputation were often as difficult to manage as the physical limitations. Boakye et al. (2022) found that individuals who had undergone lower-limb amputation due to type 2 diabetes mellitus experienced significant psychological and emotional distress. While physical impairments were evident, the emotional toll was often more severe. Some participants exhibited adaptive coping strategies, indicating differences in psychological resilience.

Kevin (Pt) faced significant physical challenges, as he could no longer engage in the sports and activities he loved. Mentally, he struggled with the stigma of being an amputee, feeling that people treated him with pity.

Paul, an amputee and healthcare professional, coped by pushing aside a core part of his identity, being gay, throughout both his cancer experience and his amputation. He explained that although he knew from childhood that he was gay, years of chronic pain, medical uncertainty, and later the psychological demands of adapting to limb loss left him unable to confront His sexual orientation. Managing his amputation required all his emotional resources, compounding his struggles with body image and self-acceptance. As a result, he suppressed this aspect of himself for a decade after surgery, noting that he could not expect others to accept him while he was still unable to accept himself.

Paul (HCP): "It was as if I continuously had to push parts of me aside...it was something that was truly challenging to get past...it took me 10 years after my amputation to accept that aspect of myself."

HCP participants observed that individuals who received psychological interventions demonstrated greater resilience in coping with identity-related challenges and body image concerns, and generally experienced more favourable rehabilitation outcomes. However, limited access to such services, primarily due to funding constraints within the South African healthcare system, was highlighted as a significant barrier. They further reported that the psychological effects of amputation persisted well beyond the initial recovery phase. Participants emphasised the need for ongoing psychological care to address long-term issues such as body image disturbances, identity reconstruction, and social reintegration.

Rick (HCP): "Patients with psychological interventions seem to cope a lot better with their body image, self-esteem, as well as feelings of identity challenges. So, I think, yes, they will definitely cope a lot better than peers that did not receive any intervention."

Carol (HCP): “Changes to body image and self-esteem can negatively impact motivation to engage in a rehabilitation process. A feeling of one's body letting you down... a sense of dislike or even disgust in one's own body, all affect self-esteem and ability to engage proactively in recovery.”

Grogan (2016) defines body image as an individual's mental representation of their physical self. Research consistently shows that amputation disrupts this representation, altering self-perception and emotional well-being (Boakye et al., 2022; Holzer et al., 2014; Rybarczyk et al., 1995; Verschuren et al., 2015). These disruptions often manifest as grief, identity loss, and lowered self-esteem, particularly when early psychological support is absent.

Post-traumatic amputees commonly report persistent distress, including grief, helplessness, and depression (Armstrong-James, 2015). Body-image dissatisfaction can further undermine self-esteem and personal identity (Panyi & Lábadi, 2015), while dependency and stigma frequently intensify social isolation (Armstrong-James, 2015). Support from family and healthcare professionals helps mitigate these challenges (Gündüz et al., 2024), yet reconciling one's altered physical state with one's self-concept remains an ongoing process (Panyi & Lábadi, 2015). Despite these difficulties, some individuals experience personal growth and develop a renewed sense of identity.

Theme 3: Coping Mechanisms

Coping mechanisms are central to physical and psychological adjustment following limb amputation and vary across participants. While some found value in psychological counselling and peer support, others relied on physical rehabilitation, spirituality, or self-directed reflection and substances. One participant, for example, described suppressing emotional pain for years and developing a dependency on pain medication, likening its comfort to being wrapped in a warm duvet. This metaphor illustrates both the psychological

allure and the difficulty of overcoming such dependencies, which ultimately became the means to cope with the amputation.

Charl (Pt) distinguished between “coping” and “thriving,” arguing that psychological well-being extends beyond managing daily demands and instead requires intentional, purposeful engagement with life. His perspective emphasises a proactive orientation toward personal growth and resilience.

Charl (Pt): “Two things can be true at once. You can cope, but not have quality of life. It is possible that you are coping with life, but I don’t want to cope, I want to thrive, I want to live.”

In contrast, Dave’s (Pt) experience illustrates the limitations of traditional psychological counselling for some individuals. Finding formal therapy misaligned with his needs, he sought support from peers with shared experiences, underscoring the value of community-based networks in fostering psychological well-being where conventional therapeutic models may be less effective.

Dave (Pt): “After my accident, I used athletics as coping mechanism. After fracturing my back doing sports, I had a complete breakdown, as this was my coping method. I then saw a psychologist for a while. This was more frustrating. I find it very difficult to tell a stranger about my most intimate problems/relationships/friendships. I stopped after a few sessions and relied completely on close friends to keep mentally healthy. I have been fortunate enough to make friends (who studied biomechanics of amputees and sport) with similar interests and experience with people like me and my problems to support me and just be there for me. I cannot see myself willingly going to a psychologist to speak about my personal problems, as I feel it doesn’t work for me personally.”

Ira (Pt) demonstrated a notably resilient and adaptive response to amputation. Redirecting his ambitions from athletics to academics, he pursued advanced studies in

engineering, focusing on prosthetics and orthotics. Maintaining a highly active lifestyle, he attributed his emotional stability to physical rehabilitation and the support of his prosthetist rather than formal psychological intervention. His adjustment trajectory highlights the therapeutic value of physical activity, goal-directed behaviour, and self-efficacy in promoting post-amputation well-being.

Ira (Pt): "I didn't really get depressed or anything. I think the people around me got more depressed than I was. I just, enjoyed going to the gym, doing like outdoor activities we hike a lot or doing mountain biking and stuff like that and that kind of like, I don't know, maybe due to that that I didn't get any like depro symptoms and anything."

The suddenness of his amputation complicated Richard's (Pt) adjustment during a critical academic period. He relied heavily on spirituality as a coping mechanism and found physical rehabilitation more effective than psychological support groups in managing his distress. Despite ongoing challenges related to body image and identity, he continues to use periodic withdrawal and selective social engagement to navigate emotional fluctuations, illustrating the importance of tailored, multidimensional coping strategies.

Richard (Pt): "I was 17 years old at the time in my matric final year of school and rugby injury led to my amputation, thinking it was just a broken leg and that I'll recover a few months later but that wasn't the case 4 days later my amputation took place. Couldn't mentally, physically, or emotionally prepare and had to hold onto my spirituality."

Thabani (Pt) experienced substantial physical and emotional trauma following a severe motorcycle accident and prolonged hospitalisation. Loss of independence and marital dissolution intensified his psychological burden. Despite this, he exhibited strong internal resilience, rejecting formal psychological intervention in favour of self-reflection, spiritual growth, and engagement with literature on forgiveness. He reframed his disability, resumed physically demanding activities, and maintained a positive self-concept, explicitly rejecting

the label of “disabled.” His narrative demonstrates the role of self-directed meaning-making and internal locus of control in long-term adjustment.

Healthcare professionals in this study emphasised that effective coping strategies are essential for both physical and psychological adjustment following limb loss. All five of the HCPs interviewed noted that emotional responses, such as despair, frustration, and reduced self-esteem, often hinder rehabilitation, particularly when patients experience setbacks, including delayed wound healing, postponed prosthetic fitting, or difficulty accessing funding. These insights underscore the need for integrated rehabilitation approaches that address emotional and psychosocial challenges alongside physical recovery.

Effective strategies help mitigate the emotional burden of limb loss, with social support reducing isolation and distress, and religious coping providing hope and a sense of belonging (Fazilari et al., 2024; Ohenewa et al., 2025). Early psychological intervention is critical for addressing body-image concerns and depressive symptoms, which may otherwise impede rehabilitation (Fazilari et al., 2024). Although some individuals experience post-traumatic growth and increased resilience (Carnahan et al., 2024), mental health challenges such as depression and anxiety remain common when coping strategies are insufficient.

Theme 4. Role of Healthcare Professionals

Participant narratives highlight the multifaceted and often deeply personal roles that various healthcare professionals played throughout their rehabilitation journeys. These accounts revealed the importance of individualised care and the value of professional relationships in facilitating recovery.

One participant, Ira (Pt), emphasised the central role of his prosthetist, describing this professional as his primary point of contact for all matters related to his amputation. This highlights the potential for prosthetists to serve not only as technical experts but also as key coordinators in the rehabilitation process. Charl (Pt) highlighted the complementary roles of

psychological and prosthetic care in his recovery. Kevin's (Pt) experience underscored the value of empathetic communication and relational continuity. His negative encounter with a psychiatrist contrasted sharply with the support offered by his orthopaedic surgeon.

Ira (Pt): "I think my prosthetist was probably pretty much my psychologist, my rehab person."

Charl (Pt): "I started working with someone (a psychologist) to understand dependence... She was brilliant and helped me to kick that bad habit...my prosthetist played a very big part in this... he's clinical, but compassionate... the prosthetist's role... can be immense."

Kevin (Pt): "I did have one encounter with a psychiatrist... he was very bombastic... gave me a prescription...my surgeon... took the time to explain everything to me... We still have a very good relationship today."

These stories illustrate the diverse and often underappreciated roles that healthcare professionals play in the lives of amputee patients. They also underscore the importance of personalised care, therapeutic relationships, and interdisciplinary collaboration in promoting holistic recovery. These accounts further reflect the varied, yet central roles HCPs play in facilitating physical recovery, emotional adaptation, and motivation. They also highlight the value of holistic, relational, and interdisciplinary approaches.

HCPs identified psychological intervention as essential for effective rehabilitation. Individuals who accessed such support showed greater resilience, improved body image, and better adjustment, according to the HCPs. However, limited funding and access, particularly within the South African healthcare context, were significant barriers.

Research highlights the central role of healthcare professionals (HCPs) in supporting amputees through the physical, psychological, and social challenges of recovery (Marques et al., 2014). Interdisciplinary collaboration, integrating physicians, therapists, nurses, and

prosthetists, is essential for comprehensive rehabilitation and improved quality of life (Collins et al., 2021; Trallesi et al., 2018). Effective communication within teams and continuity of care further strengthen patient safety and long-term outcomes (Abrahamsen et al., 2023).

Patient-centred approaches that involve individuals and their families in decision-making enhance adherence and empower patients throughout rehabilitation (Trallesi et al., 2018). However, systemic issues such as high workloads and limited resources continue to restrict optimal service delivery. Overall, the evidence underscores HCPs' vital contribution not only to technical rehabilitation but also to emotional support and sustained engagement, affirming the need for holistic, psychologically integrated care models that promote long-term well-being.

Theme 5. Challenges Faced in the Post-Amputation Adjustment Process

The seven sub-themes that follow demonstrate the challenges each patient participant faced in adjusting to life after amputation. Results from the HCP participants' perspectives further illustrate these challenges.

5.1 Loss of Identity and Frustration as Core Post-Amputation Challenges

Traumatic limb amputation frequently results in significant identity disruption, emotional distress, and ongoing attempts to reconcile one's altered physical state with a prior self-concept (Panyi & Lábadi, 2015). Charl's (Pt) account highlights loss of identity and persistent frustration as central post-amputation challenges. He described the transition from independence to reliance on others as profoundly disempowering, particularly when he could mentally solve problems but was no longer able to act on them physically. This loss of former capability required him to reconstruct his identity, let go of a self closely tied to autonomy, and develop greater emotional resilience. His narrative also reflects the internal struggle

between acknowledging anger and maintaining strength, illustrating the psychological complexity of post-amputation adjustment.

Charl (Pt): “Going from being ‘I do most things really well’ ... to suddenly not being able to do things intuitively and quickly, or how I was able to do. For me, that has been the biggest challenge and remains the biggest challenge; it frustrates me, so the biggest challenge is probably frustration. It frustrates me when I can see a situation that I can sort out quickly, or used to be able to, and now I can’t.”

Emotional frustration is also prevalent, with many amputees developing depression or anxiety linked to sudden lifestyle changes and the psychological shock of injury (Shue et al., 2021). Coping responses vary and may include social, spiritual, or peer-based strategies (Ohenewa et al., 2025).

Consistent with this, healthcare professionals in the present study emphasised the psychological challenges associated with prosthetic use, particularly when patients lack emotional readiness.

Yolanda (HCP): “A depressed, low self-esteem patient is less likely to conduct their rehab and therapy and struggles to adapt to the use of a prosthesis.”

Jake (HCP): “I think that the ones that do receive psychological intervention...They're much more motivated. They're willing to go for prosthetic fitment, they want to return to work. They want to return to the new normal.”

Rick (HCP): “I've heard that they (amputee patients) say that all of a sudden it feels as if they need to double up on other things to get the same respect as what they used to (after amputation).”

Together, these insights illustrate that identity loss and frustration are central psychological challenges after amputation, shaped by body-image disruption, reduced autonomy, and social isolation. Body-image concerns play an important role in identity loss.

Burden et al. (2018) found that prosthesis users often experience disgust or dissatisfaction with their appearance, leading to self-stigmatisation and unmet expectations regarding their bodies. Holistic rehabilitation must therefore incorporate emotional, psychological, and social dimensions, not only physical recovery, to support more adaptive identity reconstruction and long-term well-being (Fazilari et al., 2024).

5.2 Dependence, Isolation, and Misunderstood Limitations Post-Amputation

The psychological aftermath of amputation is multifaceted, often marked by vulnerability, social disconnection, and misinterpretation of functional limitations. Amputees frequently experience anxiety, depression, and PTSD, influenced by premorbid personality and coping styles (Rudenko & Assonov, 2023).

Dave's (Pt) account highlights the interplay between physical limitations, social perceptions, and emotional adjustment after amputation. He found the sudden dependence on others unsettling and experienced isolation as peers continued with their lives. Professionally, he struggled with the scrutiny of physical ability in sectors such as aviation and maritime work and the ongoing need to prove competence despite appearing capable. This mismatch between outward appearance and fluctuating physical capacity contributed to frustration, especially when others misunderstood periods of reduced mobility. His narrative underscores the emotional burden of being judged by appearance rather than ability and the need for greater awareness of the invisible aspects of disability.

Dave (Pt): "Then it's frustration to be actually limited, people assume as I walk normal I can do anything, and then don't understand when I cannot walk one day."

Body image dissatisfaction commonly contributes to withdrawal and hampers adjustment (Fazilari et al., 2024). Reintegration is further challenged by limited social support, mobility barriers, chronic pain, and inaccessible environments (Carnahan et al., 2024; Rudenko & Assonov, 2023). Stigma-related misunderstandings about physical ability

often reinforce isolation (Armstrong-James, 2015). These factors underscore the need for individualised rehabilitation strategies that address both the psychological and physical dimensions of recovery (Fazilari et al., 2024).

Healthcare professionals emphasised that emotional well-being strongly influences rehabilitation engagement. Access to psychological support was linked to smoother transitions from trauma to acceptance, greater motivation, and improved participation in rehabilitation.

Carol (HCP): “Those who have received psychological intervention tend to present with increased levels of self-efficacy... better levels of resilience and an accelerated trajectory of acceptance.”

These observations align with broader research. Psychological well-being strongly predicts rehabilitation outcomes (Bonilla-Flores, 2024), while early intervention reduces the burden of mood disorders and supports emotional resilience (Phutane et al., 2024; Yilleng & Dapap, 2020). Social support similarly protects against anxiety and depression, aiding adjustment (Rotter et al., 2008). Yet emotional responses vary substantially; some individuals exhibit denial or avoidance that hinders progress, underscoring the need for tailored psychological care (Bonilla-Flores, 2024; Fazilari et al., 2024).

5.3 Phantom Pain and Mental Resilience in Post-Amputation Recovery

Hogan et al. (2022) report that phantom limb pain (PLP) presents a major psychological and physiological challenge after amputation, often weakening mental resilience and complicating rehabilitation. Phantom limb pain adds further emotional strain (Roşca et al., 2021).

Gary’s (Pt) experience highlights the significant impact of phantom limb pain and the central role of mental resilience in post-amputation recovery. He described phantom pain as the most overwhelming challenge, despite rapid physical reintegration supported by informal

physiotherapy and intuitive prosthetic use. Managing this pain required targeted psychological interventions, including hypnotherapy and spiritual practices. His strong internal drive, shaped by prior life challenges and family support, illustrates how psychological factors and personal belief systems critically influence long-term adjustment and quality of life after amputation.

Gary (Pt): "I went to a Psychologist/Hypnotherapist Lady that helped me with the ghost pains, cause that was a thing that almost had me go mental, was the fact that the ghost pains, because it was a trauma, I couldn't get rid of it...For me, it was just not lying there and feeling sorry for myself, and that's when I talk to young people and being approached by people to tell my story, it's just a get up and go mentality."

PLP is strongly associated with psychiatric comorbidities, including major depressive disorder, generalised anxiety disorder, and PTSD. These conditions intensify the experience of pain and elevate the risk of suicidal ideation, underscoring the need for integrated psychological support within post-amputation care.

5.4 Redirection of Life Goals and Physical Limitations in Post-Amputation Experience

Adjustment after amputation reflects interconnected psychological, physical, and social factors. Effective reintegration requires attention to mental health, physical barriers, and prosthetic adaptation, with early screening and interdisciplinary intervention improving outcomes (Carnahan et al., 2024). Psychological flexibility, specifically the ability to let go of unattainable goals and pursue achievable ones, supports emotional well-being (Coffey et al., 2014).

Ira's (Pt) post-amputation experience illustrates how limb loss can catalyse a significant redirection of life goals. Although he had envisioned a future in sports, his amputation prompted a shift toward engineering, culminating in a master's degree and ongoing doctoral research in prosthetics and orthotics. He framed this transition positively,

viewing it as an opportunity to contribute meaningfully to the field and support others facing similar challenges. Despite this constructive adaptation, Ira noted persistent physical limitations, particularly difficulty navigating uneven terrain and uphill slopes due to asymmetry between limbs. While stair negotiation was manageable with a high-quality prosthesis, outdoor terrain remained challenging. Nevertheless, he maintains an active lifestyle, including mountain biking, and emphasised that amputation shaped the direction of his life rather than diminishing its quality. His account reflects resilience, purpose-driven adaptation, and the nuanced physical demands that persist despite advances in prosthetic design.

Ira (Pt): “Probably had a better impact on it than I thought. Before my accident, I probably would have ended up trying to do sport or something, but yeah, afterwards it actually got me into studying engineering and doing my master's degree, busy with my PhD, going into actually becoming a lecturer and doing research on prosthetics and orthotics. So, it actually kind of like pushed me in a direction to maybe help others one day.”

Long-term quality of life is further shaped by physical activity and factors such as amputation level, phantom pain, and back pain (Christensen et al., 2016). Social determinants, including education and supportive interpersonal networks, also significantly influence recovery trajectories (Reiber & Smith, 2010).

Healthcare professionals in this study likewise emphasised that psychological interventions enhance self-efficacy and support more active participation in rehabilitation.

Jake (HCP): “The ones that do receive psychological intervention... really do much, much better. They’re much more motivated... They want to return to the new normal.”

Carol (HCP): “Those who have received psychological intervention tend to present with increased levels of self-efficacy... better levels of resilience and an accelerated trajectory of acceptance.”

Research supports these findings. Psychological intervention enhances self-efficacy and engagement in rehabilitation (Bonilla-Flores, 2024; Fazilari et al., 2024), reduces anxiety and depression (Kashif et al., 2004; Srivastava & Chaudhury, 2014), and strengthens confidence in managing rehabilitation demands (Mostovaya et al., 2021). It also facilitates emotional and social adjustment and supports reintegration into daily and occupational roles (Bonilla-Flores, 2024; Fazilari et al., 2024). Sustained psychological care is associated with long-term mental health benefits and improved adherence to rehabilitation protocols, underscoring its critical role in comprehensive post-amputation recovery (Bonilla-Flores, 2024; Kashif et al., 2004).

5.5 Psychosocial Impact and the Role of Social Environment in Post-Amputation Recovery

Kevin's (Pt) narrative illustrates the profound psychosocial impact of limb loss, particularly the emotional toll of judgment, pity, and altered social perceptions. These experiences, combined with the loss of previously enjoyed physical activities, created lasting emotional strain. He credited close friends, whose humour and support eased his distress, as central to his psychological recovery. Kevin emphasised that environment and mindset significantly shape rehabilitation, noting that negative surroundings can hinder both emotional and physical progress. He likened limb loss to bereavement and acknowledged the personal growth that followed. His narrative underscores the need for empathetic social support and the avoidance of stigmatising attitudes, advocating for encouragement, inclusion, and respect for autonomy.

Kevin (Pt): "When the reality sinks in of what has happened, it very quickly becomes a snowball effect, and the problem is that when there is no one to support you psychologically, someone could very easily end up taking their own life because of the loss they've suffered."

The psychosocial consequences of traumatic limb amputation are substantial, shaped by both individual psychological factors and the surrounding social environment. Recovery outcomes often depend on early mental health intervention and robust support systems that facilitate emotional adjustment and social reintegration (Fazilari et al., 2024).

The conversations with HCPs highlighted that amputees frequently experience significant emotional and psychosocial difficulties, including altered body image, feelings of loss, and social isolation, which can complicate discussions around care limitations. These conversations must be approached with sensitivity, acknowledging the patient's vulnerability and the critical role of support systems such as family and healthcare providers (Gündüz et al., 2024).

Carol (HCP): "The impact of a post-traumatic amputation can be devastating on an individual's well-being. I have observed signs of reduced self-confidence and reduced self-efficacy. Premorbid character and psychosocial factors do play a role in well-being and functional outcomes; however, the impact on body-image and self-esteem, even for the well-adapted individual, is not to be underestimated."

A substantial proportion of amputees experience early mental health difficulties, with around 42% showing clinical depression within two weeks post-surgery (Ranti et al., 2015). Body-image disturbances, including body dysmorphia, further hinder psychological adjustment and social engagement (Fazilari et al., 2024). Supportive family and peer relationships play a crucial role in strengthening emotional resilience during rehabilitation (Carnahan et al., 2024). Despite these challenges, some individuals exhibit post-traumatic growth, finding renewed purpose after limb loss (Rack & Hofmann, 2003). Nevertheless, many continue to require sustained psychological, psychosocial, and pharmacological support long after physical rehabilitation ends (Sahu et al., 2016).

5.6 Early-Life Trauma, Identity Disruption, and Long-Term Psychological Adjustment

Given that participants were, on average, 15 years post-amputation, their accounts may not fully capture experiences from the immediate postoperative period. However, Richard's (Pt) narrative illustrates the profound psychological impact of limb loss during adolescence. Amputated at 17, he faced a sudden disruption of academic and athletic aspirations. Although spirituality offered initial support, he experienced the event as deeply traumatic, with emotional and identity-related challenges surpassing physical recovery. Despite intensive rehabilitation, episodic emotional lows persist 17 years later, highlighting the enduring psychological impact of early-life amputation and the need for holistic, personalised support.

Richard (Pt): "Ultimately, I'll conclude that personally by saying the physical aspect was a bit easier than the mental and emotional part of it all, and it still affects me physically, mentally, and emotionally up till today. I've just learnt to tolerate and deal with it a bit better than the 1st few years."

The psychological adjustment following traumatic amputation is complex, shaped by early-life trauma, disrupted identity, and long-term emotional adaptation. Amputees frequently experience depression, anxiety, and PTSD, which can persist long after the injury (Lavanga et al., 2024; Shue et al., 2021). A central challenge is the disruption of self-identity, as individuals must reconcile their altered physical state with their prior self-concept, often accompanied by body-image dissatisfaction and the need to redefine identity (Grobler, 2008; Panyi & Lábadi, 2015). This renegotiation is influenced by factors such as access to information, autonomy, and social context (Hamill et al., 2010).

Social support, personal resilience, and adaptive coping, such as reframing the loss, are critical for facilitating adjustment (Cater, 2012; Ferguson et al., 2004). Therapeutic approaches, including psychotherapy and narrative therapy, help support identity reconstruction and emotional healing (Grobler, 2008; Lange & Heuft, 2001). Long-term

adjustment remains ongoing, with major amputations associated with higher rates of depressive episodes and increased reliance on antidepressants (Lavanga et al., 2024). Integrating psychological care throughout rehabilitation is therefore essential to address persistent emotional challenges and promote adaptive functioning (Silander, 2018).

5.7 Loss of Autonomy, Emotional Trauma, and Social Rejection in Post-Amputation Adjustment

Thabani's (Pt) account illustrates the profound psychological impact of limb loss, particularly the loss of autonomy and dignity during early recovery. Sudden dependence on his mother for basic care was experienced as profoundly humiliating, while rejection from his spouse inflicted lasting emotional harm, severely undermining self-worth. His narrative demonstrates how the convergence of physical dependence and social rejection can intensify psychological distress and highlights the need for compassionate caregiving and psychosocial support that fosters emotional healing and reintegration, especially where familial support is absent.

Thabani (Pt): "I spent 9 months in hospital, and that crippled me emotionally as I was no longer able to do for myself the things I used to do. I had to be bathed, fed and pushed around in a wheelchair. I think the hardest for me was after I was discharged in hospital and had to go home to be cared for by my mother. I was 35 years old at the time of my accident, having your mother accompany you to the loo and her having to bathe me really made me feel like I would have been better off dead. My then wife left me with words that killed me. She said to me while I was in hospital, "What am I to do with you in your condition, I didn't marry a cripple."

The adjustment process following traumatic limb amputation is multifaceted, involving psychological, emotional, and social challenges that shape recovery and reintegration. Healthcare professionals noted that few patients seek psychological

counselling, yet those who do often show meaningful improvements in body image and grief processing, while unresolved trauma can hinder rehabilitation and adjustment. Carol (HCP) emphasised this gap, and Paul (HCP) described a patient who, despite strong physical recovery, continued to struggle with self-esteem years later due to the absence of psychological support. Similarly, Rick (HCP) highlighted the emotional and logistical difficulties patients face, citing a case where prolonged healing led to significant frustration. Together, these accounts underscore the need for holistic care that integrates psychological support throughout rehabilitation.

Yolanda (HCP): “Very few patients have gone for counselling. But this has definitely improved their body image, helped with the cycle of grief and healing and assisted their caregivers and families to adapt too.”

Jake (HCP): “I must be honest, the minority really did (go for counselling), especially with the traumatic ones. That is a big problem...There's definitely, I think, a lack of insight into the ones that don't receive good support.”

Rick (HCP): “We as Orthotists or Prosthetists can try and positively influence our patients, but I can't help them with the correct tools. But that's why there are other disciplines that might be able to assist them.”

Loss of autonomy seems to be one of the most immediate challenges following amputation, as reliance on caregivers for daily tasks often leads to helplessness and reduced self-worth (Gündüz et al., 2024). Physical limitations, reduced mobility, and dependence on assistive devices further complicate independence, particularly for individuals with limited resources (Gündüz et al., 2024; Wolfe et al., 2008). Although rehabilitation and prosthetic fitting support the restoration of autonomy, these processes require sustained psychological resilience (Panyi & Lábadi, 2015). Emotional trauma, including depression, anxiety, and body-image disturbance, is common and may be intensified by phantom limb sensations and

the complex task of identity reconstruction (Panyi & Lábadi, 2015; Rudenko & Assonov, 2023; Hamill et al., 2010; Ohenewa et al., 2025). Support from family, peers, and healthcare providers helps buffer emotional strain, yet stigma and social rejection often contribute to isolation and hinder reintegration (Cater, 2012; Gündüz et al., 2024; Rudenko & Assonov, 2023). Access to appropriate prosthetics enhances independence, though availability remains uneven (Gündüz et al., 2024). Overall, comprehensive rehabilitation must address the psychological, social, and emotional dimensions of adjustment, with integrated mental health support improving long-term well-being (Fatima, 2023; Silander, 2018).

Theme 6. Healthcare and Rehabilitation

The dynamics of healthcare and rehabilitation for amputee patients reveal a complex interplay between physical recovery, psychological resilience, and systemic support structures. Interviews with individuals who have undergone limb loss underscore a significant gap in integrated care, particularly in the provision of mental health services. While four participants benefited from skilled prosthetists and rehabilitation professionals, others encountered dismissive or inadequate psychological support, with one recounting a particularly negative experience with a psychiatrist, highlighting the urgent need for trauma-informed and empathetic clinical practice. These findings are well supported in literature (Coelho et al., 2024; de Oliveira et al., 2022; Fazilari et al., 2024; Myers et al., 2018; Pomey et al., 2015; Trallesi et al., 2018; Vincent et al., 2015).

6.1 Collaboration and the prosthetist's role.

Psychological readiness and motivation are critical for successful rehabilitation, as they influence the individual's ability to accept changes in body image and identity (Panyi & Lábadi, 2015). HCPs play a crucial role in this regard, as the prosthetic fitting process is gradual and adapts to the patient's evolving physical and emotional recovery (Fiedler et al., 2014). Charl (Pt) emphasised the synergy between psychological support and physical/

prosthetic rehabilitation, and the value of informed guidance from prosthetists/CPOs in adjustment and recovery:

Charl (Pt): "I started working with someone (a psychologist) to understand dependence. That was the first time ever in my life, but not until the cost of not asking for help far outweighed the benefit of not asking for help. She was brilliant and helped me to kick that bad habit... So, the intervention was a two-part thing: it's the psychological part and the CPO's role. I think it is undervalued. I don't think CPOs maybe quite understand what a difference (some of them do, I know), they make."

The conversations with healthcare professionals highlighted critical themes in healthcare delivery concerning patient communication and resource allocation. There is a consensus among healthcare professionals regarding the need for integrated approaches that encompass multiple disciplines to enhance patient outcomes and satisfaction. HCPs consistently emphasised the importance of a multidisciplinary approach to optimise patient outcomes. Carol (HCP) focused on the critical role of physiotherapy in enhancing post-amputation quality of life. However, she stressed that optimal recovery requires collaboration across disciplines, particularly the early involvement of psychological support.

Carol (HCP): "The impact of a post-traumatic amputation can be devastating on an individual's well-being...Premorbid character and psychosocial factors do play a role in well-being and functional outcomes, however the impact on body-image and self-esteem, even for the well-adapted individual, is not to be underestimated...Those who have received psychological intervention tend to present with increased levels of self-efficacy and are more willing to positively engage in a rehabilitation program. They show better levels of resilience and an accelerated trajectory of acceptance of their situation."

Yolanda (HCP) demonstrated the transformative impact of advancements in prosthetic technology on mobility and independence. She affirmed the psychological challenges

associated with adapting to new prosthetics, asserting that psychological care is equally, if not more important than physical rehabilitation.

Yolanda (HCP): “Very few patients have gone for counselling. But this has definitely improved their body image, helped with the cycle of grief and healing and assisted their caregivers and families to adapt too...Psychological intervention should be a standard procedure. There is no doubt about it. It is as important as receiving their prosthetic limb, if not more important.”

Rick (HCP) discussed the evolution of prosthetic fittings and the importance of tailoring devices to individual needs. He stressed the emotional toll of the rehabilitation process and the frustration patients often experience due to its length and complexity. Rick (HCP) advocated for the integration of psychological care into rehabilitation, noting that patients who receive such support cope more effectively with identity challenges, body image concerns, and emotional adjustment.

Rick (HCP): “Patients with psychological interventions... will definitely cope a lot better than peers that did not receive any intervention...It (psychological intervention) must definitely form an integral part of any rehab process to teach patients the emotional tools to cope with it (traumatic amputation)...and they (patients) get frustrated... because it is a lengthy process (rehabilitation and fitting of prosthesis).”

Early prosthetic fitting supports both immediate physical rehabilitation and timely psychological intervention, which together improve long-term outcomes (Pirowska & Nowobilski, 2006). Successful adjustment also requires addressing psychological and social factors, including body image, coping strategies, and social support, all of which shape emotional adaptation and rehabilitation success (Schaffalitzky et al., 2009). Paul (HCP) highlighted the lack of psychological support available to amputees. He emphasised its positive impact on body image and grief processing, noting that counselling benefits both

patients and their families. This aligns with research showing that caregiver well-being is closely linked to amputee anxiety levels (Tsoulou et al., 2019) and that families often experience significant psychological, financial, and emotional strain (Akodu et al., 2020).

Jake (HCP) reinforced the devastating impact of traumatic amputations on patients' overall well-being, particularly in terms of body image and self-esteem. He distinguished between traumatic and elective amputations, noting that the lack of psychological preparation in trauma cases exacerbates long-term emotional consequences.

The psychological outcomes of amputation differ markedly between traumatic and elective procedures. Individuals undergoing primary amputations often show better functional and psychological recovery than those receiving secondary or tertiary surgeries (Rack & Hofmann, 2003). Elective amputations allow for preoperative psychological preparation, which can reduce distress and support smoother adjustment (Loyal & Hanna, 2024), particularly when psychological support is provided beforehand. However, emotional difficulties may still arise, and recovery in both traumatic and elective cases is shaped by personality factors and the availability of social support (Rudenko & Assonov, 2023). Overall, these findings highlight a persistent gap in mental health provision for amputees; despite technological advances in prosthetics, the emotional and psychological dimensions of recovery remain insufficiently addressed.

6.2 Patient trajectories and personalised pathways

Interviews with patient participants revealed that each individual followed a distinct recovery trajectory, characterised by diverse needs, preferences, and approaches to rehabilitation. The narratives of Dave (Pt) and Greg (Pt) illustrate the emotional and social challenges that post-amputation patients face, including isolation, altered self-image, and the impact on professional aspirations. Dave's (Pt) preference for peer support over formal counselling reflects the importance of community and shared experience in mental health

recovery. At the same time, Greg's (Pt) reliance on informal care networks and spiritual guidance demonstrates both resilience and the limitations of unstructured rehabilitation. Ira's (Pt) recovery was supported proactively through early fitting, informal physiotherapy, and goal-directed physical activity (mountain biking, strength training), which helped him redirect his life goals toward engineering (prosthetics/orthotics).

Kevin's (Pt) story adds a poignant dimension to the discourse, emphasising the psychological toll of sudden trauma and the social stigma associated with amputation. His initial struggle with public perception and the emotional weight of limb loss, likened to bereavement, supports the need for compassionate and informed mental health care. Despite a dismissive psychiatric encounter, Kevin (Pt) found support through his surgeon and ultimately developed a more empathetic outlook, using his experience to inspire others. Richard (Pt) found that spirituality and groups offered partial relief; physical rehabilitation felt more attainable than long-term emotional recovery.

Thabani (Pt) experienced severe trauma, dependence, marital breakdown; later self-acceptance and agency through self-guided healing (e.g., literature on forgiveness) and return to meaningful activities.

Dave (Pt): "I then saw a psychologist for a while. This was more frustrating. I find it very difficult to tell a stranger about my most intimate problems/relationships/friendships. I stopped after a few sessions and relied completely on close friends to keep mentally healthy."

Thabani (Pt): "Nothing beats accepting the inevitable. Sulking and crying, "Why me?", has never been a solution to any challenge...The day I was informed of what had transpired, my heart broke, and I was down, but then I had to accept that this is how the universe conspired for me. I had to chase everyone out and had a talk with Thabani... I love myself as I am, and I always tell those who care to listen that I'm not disabled, I merely lost a

limb. I always push myself to do the things most consider impossible. I still ride motorbikes, I'm able to swim, I drive a normal car, I lead a normal life."

6.3 Access and system constraints.

This theme was recurrent in the discussions with HCPs and emphasised the limited awareness and availability of psychological services, especially in resource-constrained contexts. According to research, ~42% show clinical anxiety/depression within two weeks post-amputation (Fiedler et al., 2014; Lombard-Vance, 2017; Ranti et al., 2015). Body-image disturbance can drive withdrawal, particularly where integrated psychological services are absent (Fazilari et al., 2024; Gerhards et al., 1984).

HCPs consistently identified psychological support as a critical component of effective rehabilitation for amputee patients. Participants observed that individuals who received psychological interventions demonstrated greater resilience in coping with identity-related challenges and body image concerns, and generally experienced more favourable rehabilitation outcomes. However, limited access to such services, primarily due to funding constraints within the South African healthcare system, was highlighted as a significant barrier.

Jake (HCP): "Unfortunately, in South Africa with the government side sector, it's not freely available... we're sometimes not even aware that the service is there... and sometimes if the service is there, it's overwhelmed."

Paul (HCP): "The problem usually is getting funds for counselling."

These barriers reflect reimbursement/funding constraints, siloed services, and the prioritisation of physical over psychological care; strengthening funding mechanisms, interprofessional collaboration, and the routine integration of psychological interventions are key (Kuehn, 2008; Lange & Heuft, 2001; Srivastava & Chaudhury, 2014).

6.4 Psychological readiness and prosthetic fitting

From the HCP perspective, psychological readiness and motivation strongly influence prosthetic adaptation and rehabilitation engagement, as supported by the relevant literature (Alessa et al., 2022; Panyi & Lábadi, 2015; Souza et al., 2022).

Paul (HCP): “Recovery was drastically faster... when psychological counselling was part of it.”

Rick (HCP): “With the correct rehab... people excel... even better self-esteem than before.”

Yolanda (HCP): “Very few patients have gone for counselling... but this has definitely improved their body image... and helped with the cycle of grief.”

Early fitting supports physical recovery and timely psychological input; staged, customised fitting addresses functional and psychosocial needs (Fiedler et al., 2014; Pirowska & Nowobilski, 2006; Schaffalitzky et al., 2009).

6.5 Traumatic versus elective pathways

Psychological outcomes differ by aetiology and timing: traumatic amputations often elicit intense immediate distress and longer-term challenges, while pre-surgical preparation in elective cases can mitigate distress; timing of primary vs later amputation also affects outcomes (Fazilari et al., 2024; Loyal & Hanna, 2024; Rack & Hofmann, 2003; Rudenko & Assonov, 2023; Silander, 2018). The literature findings align with the feedback from HCPs in this study.

Jake (HCP): “As a result, it has a devastating long-term impact, although I don't see in the short-term that initial phase, especially with traumatic amputations as compared to the other, shall we call it, elective amputations where there is time to prepare psychologically.”?

Paul (HCP): “I know for a fact that mine (referring to his amputation) at the time was acceptable because I was prepared for it (elective amputation). But, we had so many patients for whom it took two or three missed consultations before the patient would even show up.”

Theme 7. Long-Term Adaptation

Participants in this study had an average of 15 years elapsed since their amputation, indicating a substantial duration of post-amputation experience across the sample.

7.1 Patients' lived experiences

These accounts demonstrate heterogeneous but patterned long-term adaptation trajectories that align with literature foregrounding holistic, multidisciplinary rehabilitation and psychosocial determinants.

Charl (Pt), 21 years post-amputation, described his adjustment following elective amputation as an ongoing, nonlinear process marked by relief, frustration, grief, and identity reconstruction. His adaptation was shaped by growing self-awareness, the ability to hold conflicting emotions, a delayed but transformative psychological intervention that addressed opioid dependence, and the support of a compassionate prosthetist who facilitated both mobility and resilience.”

Charl (Pt): “Coping does not necessarily equate to thriving.”

Dave (Pt) initially experienced frustration related to dependence and loss of autonomy, but later achieved strong physical adaptation through support from his prosthetist and specialised physiotherapy. He gradually accepted changes in appearance while navigating ongoing sport-related limitations that affected his mood and weight. He found formal therapy unhelpful and instead relied on close peers with lived experience and biomechanical insight, underscoring the importance of peer support, individualised coping strategies, and rehabilitation plans aligned with personal preferences and physical constraints.

Dave (Pt): “If I don’t want people to stare, I wear long pants... this doesn’t happen often.... changed to not caring about that at all because this is what I look like now... I am struggling with weight, and have an emotional struggle with being overweight.”

Greg (Pt) characterised his adjustment as positively transformative, drawing on an active lifestyle, spousal and family support, and guidance from a personal trainer despite minimal formal rehabilitation. Phantom limb pain remained his primary challenge; initial hypnotherapy and later Christian-based therapy provided relief by addressing both pain and broader stressors. He attributed positive long-term adjustment to mental strength, spiritual grounding, a future-focused orientation, self-efficacy, and strong familial support

Ira's (Pt) amputation became a pivotal turning point, redirecting him toward engineering and doctoral research in prosthetics/orthotics. He achieved rapid physical recovery, later maintaining fitness through strength training, biking, and hiking while managing secondary pain. Reporting minimal emotional distress and no formal psychological intervention beyond a legal evaluation, he attributed his stability to an active lifestyle, a prosthetist who offered both clinical and psychosocial support, and a purposeful mindset.

After sustaining a roadside accident while assisting others, Kevin (Pt) experienced severe psychological distress compounded by stigma, depression, substance misuse, and the absence of immediate psychological care, including a negative psychiatric encounter. His recovery was supported by social networks, a period of isolation, and the deliberate abandonment of self-destructive behaviours. He emphasised the influence of contextual factors and mindset on rehabilitation and advocated for early, empathetic psychological intervention, which now informs his motivation to support others

The abrupt amputation during Richard's (Pt) final school year disrupted academic and athletic aspirations, causing significant distress. While group support offered limited benefit, physical rehabilitation restored a sense of control through improved mobility and strength. Emotional acceptance remains complex, with episodic lows persisting 17 years later despite better self-management, underscoring the enduring psychological burden and the value of personalised coping.

Following a motorcycle collision and prolonged hospitalisation, Thabani (Pt) experienced profound emotional distress, loss of independence, and marital dissolution. Psychological input offered limited benefit relative to self-directed strategies, including reflective practices and readings on forgiveness, which facilitated a reframed sense of identity. His case illustrates the role of intrinsic motivation, self-empowerment, and forgiveness as effective complements or alternatives to formal psychological support.

Thabani (Pt): “I am not disabled but simply living with limb loss.”

7.2 Integrative evidence.

Feedback from HCPs in this study corroborates findings in the literature, demonstrating that holistic rehabilitation with early therapeutic engagement supports functional recovery, psychological adjustment, and independence (Myers et al., 2018; Pope et al., 2017). For example, military programmes further emphasise prompt pain management and early mobility (Pope et al., 2017). Prosthetists contribute beyond technical fitting, facilitating psychosocial adaptation through lifestyle alignment and interdisciplinary collaboration (Uytman, 2014; Rheinstein et al., 2021). Multidisciplinary teams (physicians, therapists, psychologists, dieticians) enable coordinated, patient-centred reintegration (de Oliveira et al., 2022; Glapa et al., 2021; Pomey et al., 2015; Trallesi et al., 2018).

Jake (HCP): “It shouldn’t be negotiable... part of the whole multidisciplinary team.”

Carol (HCP): “Psychological intervention should absolutely be a core aspect of a patient’s rehabilitation process.”

Paul (HCP): “If you don’t offer holistic care, you can’t even attempt successful rehabilitation.”

Theme 8. Call for Systemic-Change

The collective experiences of seven individuals living with limb loss because of trauma, together with the findings from interviews with five healthcare professionals,

revealed a compelling call for systemic reform in post-amputation care. While each participant's journey was unique, their stories converged around several critical areas in need of transformation.

8.1 Mental Health as a Core Component of Care

Participants repeatedly mentioned the psychological toll of amputation. Ira (Pt), like others, did not receive formal psychological support and instead relied on physical activity to maintain emotional stability. Charl (Pt) and Kevin (Pt) highlighted the long-term emotional consequences of delayed or absent mental health care, while Richard (Pt) and Thabani (Pt) described the emotional burden of abandonment and identity loss. These accounts underscore the urgent need to embed accessible, empathetic, and ongoing mental health services into rehabilitation pathways.

Thabani (Pt): "I think the hardest for me was after I was discharged in hospital and had to go home to be cared for by my mother. I was 35 years old at the time of my accident, having your mother accompany you to the loo and her having to bathe me really made me feel like I would have been better off dead. Remember, I dealt with the loss of the limb and the loss of the woman I loved more than anything in the world."

Healthcare professionals reinforced the critical role of psychological support in facilitating emotional adjustment (Bonilla-Flores, 2024; Fazilari et al., 2024). Patients who received mental health interventions were better able to manage challenges related to body image, identity reconstruction, and self-esteem. In contrast, the absence of psychological care often hindered emotional recovery and prolonged the rehabilitation timeline (Lange & Heuft, 2001; Mostovaya et al., 2021). HCPs further acknowledged the critical importance of addressing both physical and psychological dimensions of recovery in patients undergoing rehabilitation following amputation. Amputees often encounter a range of psychological and emotional challenges that can significantly influence their rehabilitation outcomes. Key areas

identified include coping strategies, access to psychological interventions, body image concerns, self-esteem, rehabilitation barriers, the influence of support networks, the accessibility of mental health services and personal experiences.

Rick (HCP): “Patients with psychological interventions seem to cope a lot better... than peers that did not receive any intervention.”

Yolanda (HCP): “Those who do not have intervention are more prone to substance abuse... difficulty returning to the workplace... and overall have a negative narrative.”

Jake (HCP): “The ones... not really well supported... use it as an excuse sometimes... but those with a support network really do much, much better.”

Amputation often results in significant psychological challenges, including depression, anxiety, and body image disturbances, which can hinder reintegration if left unaddressed (Fazilari et al., 2024). Early and continuous psychological support is therefore critical to facilitate emotional adjustment and social participation. Interdisciplinary rehabilitation models that include mental health professionals are associated with improved outcomes, as they address both physical and psychological needs (Keszler et al., 2020; Sobti et al., 2021). The biopsychosocial framework further emphasises the importance of managing mood disorders, pain, and cognitive functioning to enhance motivation and engagement in rehabilitation (Del Piero et al., 2020). Structured approaches such as the Lower Limb-Loss Rehabilitation Continuum (LLRC) and the Interdisciplinary Care for Amputees Network (ICAN) offer promising models for integrating psychosocial care into rehabilitation (Grover & Karuppan, 2023; Sobti et al., 2021). However, challenges such as limited resources and workforce shortages continue to constrain the delivery of comprehensive mental health services (Mohammed et al., 2024). Addressing these barriers is vital to ensure equitable access to care and to support long-term recovery and quality of life for amputee patients (Carnahan et al., 2024; Reiber & Smith, 2010).

8.2 Holistic and Individualised Rehabilitation Models

Developments in amputee rehabilitation emphasise a shift from traditional, survival-focused models to holistic approaches that foster thriving and long-term well-being. While conventional care prioritises physical recovery and prosthetic integration, emerging models advocate for biopsychosocial frameworks that address psychological resilience, social reintegration, and functional independence (Fazilari et al., 2024; Lange & Heuft, 2001).

Kevin (Pt), Greg (Pt) and Dave (Pt) stressed the importance of addressing both physical and emotional recovery. Participants expressed frustration with systems that focused solely on mobility while neglecting identity reconstruction, emotional resilience, and social reintegration.

Kevin (Pt): “Mentally, I was scarred. Everyone looks at you differently...this (psychological care) should have been integrated 20 years ago already.”

Gary (Pt): “It (traumatic amputation) changed my life immediately, but for the good. I went to a Psychologist/Hypnotherapist Lady that helped me with the ghost pains, cause that was a thing that almost had me go mental.”

Overall, the interviews reinforced the complex interplay between physical, emotional, and social dimensions of recovery following amputation. All five HCPs interviewed for this study advocated for a comprehensive rehabilitation model that includes psychological support as a standard component (Bonilla-Flores, 2024). Effective communication, multidisciplinary collaboration, and long-term emotional care were identified as key factors in improving patient outcomes and quality of life (Jo et al., 2021).

Jake (HCP): “It shouldn’t be negotiable... part of the whole multidisciplinary team.”

Carol (HCP): “Psychological intervention should absolutely be a core aspect of a patient’s rehabilitation process.”

Rick (HCP): “It must definitely form an integral part... to teach patients the emotional tools to cope.”

Paul (HCP): “If you don’t offer holistic care, you can’t even attempt successful rehabilitation.”

Yolanda (HCP): “It... is as important as receiving their prosthetic limb.”

Interdisciplinary collaboration among healthcare professionals, including physicians, psychologists, prosthetists, and dieticians, is essential for delivering patient-centred care (Glapa et al., 2021; Trallesi et al., 2018). Technological innovations, such as the SMART program (self-management for amputee rehabilitation and technology), enhance self-management and accessibility, particularly where traditional services are limited (Esfandiari et al., 2023). Despite promising advancements, challenges remain in scalability and resource allocation, underscoring the need for adaptable, inclusive rehabilitation systems (Bonilla-Flores, 2024).

8.3 Early Intervention and Informed Support.

Several participants, including Charl (Pt) and Kevin (Pt), described the critical importance of early psychological and informational support. The absence of timely guidance often led to prolonged distress, confusion, and missed opportunities for smoother adaptation. Participants called for trained professionals to be present immediately post-trauma to provide emotional grounding, practical information, and hope. HCPs further mentioned that trauma patients often are still in denial about the loss of a limb by the time that they need to go for their first prosthetic fitment.

Charl (Pt): “Whoever suffers from limb loss, or has to deal with this, they need to be informed, they need information, they need to speak to somebody that can help them understand what the possibilities are.”

Kevin (Pt): “Depression is not visible, mental health or mental issues are not visible. This research is valuable and important. That someone who wakes up in hospital being told that they’ve suffered a traumatic amputation, desperately needs someone who can be by their side on this very difficult journey.”

Richard (Pt): “Most challenging part was dealing with reality coming out of hospital cause ultimately life has to go on, so adapting mentally, emotionally and having acceptance of it.”

Jake (HCP): “It (psychological intervention) shouldn't be negotiable...it's crucial...especially more so in your traumatic amputations...they’re still probably in the denial phase by the time...they go for their first (prosthesis) fitment...”

Early intervention and informed support are pivotal in optimising rehabilitation outcomes for amputee patients (Sheikh et al., 2024). Psychological care initiated shortly after amputation has been shown to significantly reduce anxiety and depression, facilitating smoother emotional adjustment and social reintegration (Carnahan et al., 2024; Fazilari et al., 2024; Guo, 2014). A holistic approach that integrates mental health care with physical rehabilitation and family involvement is essential for addressing the complex challenges faced by amputees. Interdisciplinary collaboration among surgeons, psychologists, and physical therapists ensures that both physical and psychosocial needs are met (Almeida et al., 2022; Trallesi et al., 2018).

8.4 Peer Mentorship and Community-Based Support

Dave (Pt) and Richard (Pt) found strength in peer connections and shared experiences, often valuing these more than formal therapy. Participants advocated for structured peer mentorship programs and community-based networks to reduce isolation and foster resilience. The role of prosthetists and rehabilitation professionals who understand the psychosocial dimensions of limb loss was also highlighted as transformative.

Dave (Pt): “I relied completely on close friends to keep mentally healthy. I have been fortunate enough to make friends (who studied biomechanics of amputees and sport) with similar interests and experience with people like me and my problems to support me and just be there for me. I cannot see myself willingly go to a psychologist to speak about my personal problems as I feel it doesn’t work for me personally.”

Richard (Pt): “I was part of a support group and was good networking and hearing other people’s stories and hearing their traumatic experiences, but felt like talking about it didn’t resolve much, as out of the group you still faced with your own reality, your own challenges and trying to live and build your own life.”

The findings from these patient participants align somewhat with the literature on peer mentorship programs, which suggests that these programs offer benefits for amputee rehabilitation by enhancing psychosocial well-being, mobility, and coping strategies. Research report improved emotional support, reduced isolation, and increased resilience through shared experiences and encouragement (Costa-Parke et al., 2023; Richardson et al., 2020). Successful implementation depends on clear role definitions and comprehensive mentor training to ensure emotional preparedness and effective support delivery (Richardson et al., 2020). Community-based networks extend the reach of peer support to individuals outside traditional healthcare systems, promoting social connection and recovery (Fisher et al., 2018; Wasilewski et al., 2022).

8.5 Public Awareness and Social Inclusion.

Stigma, pity, and misunderstanding were recurring challenges. Participants like Dave (Pt) and Kevin (Pt) described the emotional toll of being stared at or underestimated. At the same time, Thabani (Pt) and Richard (Pt) emphasised the need for society to move beyond superficial perceptions of disability. Greater public education and inclusive practices were identified as necessary to promote dignity and reduce marginalisation.

Kevin (Pt): “The things that really break you, is when people look at you, and pity you, and the things they sometimes say to you.”

Dave (Pt): “I had to get use to people staring.”

Social stigma remains a significant barrier to the psychological and social well-being of amputees, often manifesting through negative stereotypes, discrimination, and perceptions of incompleteness or incapacity (Bettlach et al., 2021; Gourinat & Ehrler, 2015; Senra et al., 2012). These societal attitudes contribute to isolation, depression, and anxiety, underscoring the need for rehabilitation programs that address both physical and psychosocial dimensions (Fazilari et al., 2024). Pity and misunderstanding, though sometimes well-intentioned, can reinforce feelings of helplessness and hinder appropriate support and integration (Gündüz et al., 2024; Öztürk et al., 2022). Amputees frequently report that their emotional needs are overlooked in favour of physical recovery, despite the profound psychological impact of amputation, which can resemble grief and include conditions such as PTSD and body image disturbances (Luchetti et al., 2013; Rudenko & Assonov, 2023). Effective adaptation is closely linked to strong social support systems and the use of prosthetics, which can enhance self-perception and reduce stigma (Gündüz et al., 2024; Senra et al., 2012). Addressing stigma requires a multifaceted approach involving public education, policy reform, and inclusive rehabilitation strategies to foster societal understanding and improve the quality of life for amputees.

These accounts collectively call for a systemic shift toward integrated, compassionate, and informed care. Participants advocated for mental health services to be embedded within rehabilitation, for peer and community support to be formalised, and for public attitudes to evolve. The overarching message is clear: post-amputation care must be holistic, timely, and person-centred, supporting not only physical recovery but also emotional healing, identity reconstruction, and social reintegration.

Chapter Summary

This chapter evaluated the qualitative interviews with seven post-trauma amputee patients and five healthcare professionals. The findings highlight the multifaceted psychological, social, and physical challenges experienced by individuals following traumatic limb amputation. Participants described recovery as an ongoing process marked by identity reconstruction, emotional adjustment, and efforts to restore autonomy. Common psychological difficulties, including depression, anxiety, and body-image disturbance, were often exacerbated by limited early psychological support and experiences of stigma.

Social support emerged as a key protective factor, with family, peers, and healthcare professionals, especially prosthetists and psychologists, playing critical roles in emotional resilience and long-term adaptation. Peer mentorship and community-based networks frequently offered a deeper understanding than formal therapy. Despite profound challenges, many participants demonstrated resilience and post-traumatic growth through physical activity, spirituality, and self-directed coping. Systemic barriers, such as insufficient mental health services and persistent societal stigma, continue to limit equitable access to comprehensive rehabilitation. Healthcare professionals corroborated these findings, noting frequent patterns of prolonged grief, vulnerability in public or workplace contexts, and delayed acceptance in trauma-related amputees. Overall, the chapter reveals that optimal recovery requires an integrated, holistic rehabilitation model that embeds routine psychological care, fosters interdisciplinary collaboration, and promotes supportive environments. Such approaches strengthen resilience, facilitate adaptive identity reconstruction, and enhance long-term quality of life for individuals living with limb loss.

Chapter 7: Conclusion and Recommendations

The final chapter of this dissertation summarises the research undertaken and highlights the most salient findings in relation to the study's objectives. An integrated discussion of both the quantitative results and qualitative findings will be provided. Following this, the strengths and limitations inherent in the methodology, scope, and execution of the work are reviewed. The chapter concludes with considered recommendations for future research, aimed at addressing unresolved questions and extending the present research's contributions.

Summary of Findings

The purpose of this research was to explore whether there is a difference between two groups of patients in South Africa, concerning the impact of psychological intervention on self-esteem and body image in post-traumatic limb amputation patients who have undergone psychological intervention (group 1) and patients who have not (group 2).

A sequential explanatory mixed-methods design comprising an initial quantitative phase followed by a qualitative phase, to contextualise and deepen understanding of the quantitative results, was employed. The specific aims of the study included: 1) to compare levels of self-esteem and body image among post-trauma amputee patients who have received psychological intervention and those who have not and 2) to explore amputees' subjective perceptions of self-esteem and body image following traumatic limb loss.

The study was conducted in two sequential phases, beginning with the quantitative component. In the quantitative phase, data were collected from 40 participants through an anonymous online survey, directly addressing the first aim of the study: *to compare levels of self-esteem and body image between post-traumatic amputee patients who had received psychological intervention and those who had not*. To meet this aim, the corresponding objective involved administering two standardised instruments, namely the Multidimensional

Body-Self Relations Questionnaire (MBSRQ) (Cash, 1990) and the Rosenberg Self-Esteem Scale (RSE) (Rosenberg, 1965), to assess and compare self-esteem and body-image outcomes across the two groups. Although the survey results did not reach statistical significance, participants who accessed psychological counselling showed higher mean self-esteem and body-image scores than those who did not, indicating trends aligned with the study's expectations despite the nonsignificant findings.

Following the quantitative phase, the qualitative phase was undertaken to address the second aim: *to explore post-trauma amputees' subjective perceptions of self-esteem and body image following limb loss*. This phase involved semi-structured interviews with two participant groups, seven post-traumatic amputee patients, followed by five healthcare professionals, to gather rich, contextualised perspectives and to triangulate the findings across different viewpoints. The qualitative component fulfilled the second objective of the study by offering an in-depth exploration of amputees' lived experiences, thereby deepening understanding of the psychological processes underpinning self-esteem and body-image perceptions beyond the survey data.

From the qualitative data, eight superordinate themes were identified: 1) *Psychological impact of amputation*; 2) *Identity, body image and self-perception*; 3) *Coping mechanisms*; 4) *Role of healthcare professionals*; 5) *Challenges faced in the post-amputation adjustment process*; 6) *Healthcare and rehabilitation*; 7) *Long-term adaptation* and 8) *Call for systemic change*.

Interviews with participants, including both the post-traumatic amputees and the healthcare professionals, showed that the psychological impact of post-traumatic amputation is profound, affecting well-being, body image, and self-esteem. Participants described a dual adjustment process involving both physical adaptation and emotional responses such as grief, despair, and identity disruption, particularly in the immediate, unanticipated aftermath of

injury. These lived experiences reflect the well-documented prevalence of psychological difficulties following traumatic amputation, including depression, anxiety, PTSD, and phantom limb phenomena, all of which are known to impair daily functioning and overall well-being. The findings of this study are consistent with previous research demonstrating similar patterns of psychological distress among amputee populations (Cotigă et al., 2020; Lange & Heuft, 2001; Mostovaya et al., 2021; Peroni et al., 2017; Sahu et al., 2017;). Many reported disturbed body image, feelings of incompleteness, and reduced self-worth, with these effects more pronounced among trauma-related amputees who lacked time to prepare psychologically. The loss was frequently experienced as a rupture of self-concept, compounded by social stigma and perceptions of disability. Support systems emerged as critical for recovery. Participants with access to empathetic family, peer networks, and psychological intervention demonstrated greater resilience, engagement in rehabilitation, and more positive body-image perceptions. In contrast, limited psychological support was associated with ongoing distress and reduced engagement in recovery processes. These findings reflect established evidence that amputation disrupts body representation and self-perception, leading to grief, identity disturbance, and reduced self-esteem, particularly without early psychological support. Consistent with prior research, participants also reported persistent distress, body-image dissatisfaction, and social isolation driven by dependency and stigma (Armstrong-James, 2015; Boakye et al., 2022; Holzer et al., 2014; Panyi & Lábadi, 2015; Rybarczyk et al., 1995; Verschuren et al., 2015).

Although many participants relied on adaptive coping strategies, such as peer support, spiritual practices, and structured physical activity, which were described as essential for emotional regulation and restoring agency, some also reported turning to substance use as a coping mechanism. While ultimately ineffective and detrimental to well-being, this maladaptive strategy underscored the depth of psychological strain experienced in the

absence of adequate support. This aligns with current research reflecting that coping mechanisms are central to adjustment after limb amputation, with social and religious support helping to reduce distress and foster resilience, while early psychological intervention is essential for preventing maladaptive responses, such as depressive symptoms, body-image difficulties, and substance use, that may impede rehabilitation (Fazilari et al., 2024; Ohenewa et al., 2025).

The narratives also highlighted the central relational role of healthcare professionals. Beyond clinical duties, HCPs provided emotional support, motivation, and continuity of care. Individualised treatment approaches and strong therapeutic relationships were viewed as significant contributors to trust, resilience, and patient agency, underscoring the importance of person-centred, holistic rehabilitation practices. Literature similarly reflect that healthcare professionals play a central role in supporting amputees through the physical, psychological, and social challenges of recovery (Marques et al., 2014). Effective rehabilitation is strengthened through interdisciplinary collaboration among physicians, therapists, nurses, and prosthetists, which enhances overall outcomes and quality of life (Collins et al., 2021; Trallesi et al., 2018).

Participants further reported challenges in relearning daily tasks, managing chronic pain, and adjusting to prosthetic use, often without sufficient support. While many demonstrated resilience, gaps in integrated care, particularly in mental health, were evident, with some patients describing dismissive or harmful encounters with providers, reinforcing the need for trauma-informed, empathetic practice. Similar findings are reflected in current research demonstrating that prosthesis users frequently experience appearance-related dissatisfaction that contributes to self-stigmatisation (Burden et al., 2018), underscoring the need for holistic rehabilitation approaches that address emotional, psychological, and social

dimensions alongside physical recovery to support adaptive identity reconstruction and long-term well-being (Fazilari et al., 2024).

Over time, individuals developed more nuanced understandings of their experiences, reflecting themes of long-term adaptation, active acceptance, and personal growth. Feedback from HCPs in this study supports existing evidence that holistic rehabilitation, coupled with early therapeutic engagement, enhances functional recovery, psychological adjustment, and patient independence (Myers et al., 2018; Pope et al., 2017).

Participants advocated for systemic improvements, including expanded mental health services, early psychological intervention, peer mentorship, and community-based support. The study's findings align with evidence that early and sustained psychological support is essential for emotional adjustment and social participation, particularly when integrated within interdisciplinary rehabilitation models that address both physical and psychological needs (Keszler et al., 2020; Sobti et al., 2021).

Collectively, the findings emphasise that the psychological impact of traumatic amputation is as significant as its physical consequences and that holistic, multidisciplinary care is essential for optimising recovery and quality of life. These narratives highlight the importance of empathy, agency, and inclusive, person-centred approaches in rehabilitation and broader societal contexts.

To elucidate the research question, the findings reveal that there is a difference concerning the impact of psychological intervention on self-esteem and body image in post-traumatic limb amputation patients who have undergone psychological intervention compared to patients who have not. Furthermore, by exploring amputees' subjective perceptions of self-esteem and body image following traumatic limb loss, the psychological impact of traumatic amputation is as profound as its physical effects, necessitating holistic, multidisciplinary care to optimise recovery and quality of life.

Significance of the Study

This research contributes to the existing body of knowledge by addressing a notable gap in the literature on post-traumatic amputee rehabilitation, particularly within the South African context. It provides empirical insights into the impact of psychological support on the adjustment, well-being, and overall rehabilitation outcomes of individuals who have undergone amputation due to trauma.

The findings hold relevance for multiple stakeholders. For healthcare professionals involved in amputee care, the study offers evidence that can inform clinical practice and advocacy efforts aimed at integrating psychological interventions as a standard component of multidisciplinary rehabilitation programs. By highlighting the positive effects of such support, the research may strengthen arguments presented to healthcare payers, providers, and governmental bodies for enhanced funding and reimbursement policies that prioritise psychological care alongside physical rehabilitation.

Furthermore, the study equips patient advocacy groups and organisations supporting amputees with robust, context-specific data to amplify the voices of affected individuals. This can facilitate targeted efforts to advocate for systemic improvements, ensuring that the psychological and emotional needs of amputees—and the challenges faced by healthcare providers in delivering comprehensive care—are adequately recognised and addressed within current healthcare frameworks.

Ultimately, by underscoring the value of psychological support in mitigating the biopsychosocial consequences of amputation, this work promotes more holistic, patient-centred approaches to rehabilitation in resource-constrained settings like South Africa, with potential implications for policy, service delivery, and improved quality of life for this population.

Strengths and Limitations of the Study

Strengths

A mixed-methods approach allowed for a more in-depth and contextualised understanding of the topic. A key strength of this research lies in its adoption of a pragmatic approach, which recognises reality as dynamic and continuously evolving. This philosophical stance enabled the flexible selection of methods best suited to addressing the specific research question, rather than confining the study to a single, rigid paradigm. By embracing this flexibility, the study effectively utilised a mixed-methods design, integrating quantitative and qualitative approaches to prioritise practical insights and deepen the overall understanding of the phenomenon under investigation. This is supported in the literature, which highlights how mixed-methods prioritise practical outcomes and the demands of the inquiry over methodological purity (Kaushik & Walsh, 2019).

In psychological research, pragmatism is particularly apt given the complexity of human behaviour and experience, which often requires multifaceted exploration. A pragmatic mixed-methods framework affords flexibility and feasibility, enabling researchers to integrate quantitative rigour (e.g., statistical analysis and transferability) with qualitative depth (e.g., capturing the intensity and nuance of lived experiences). This integration yields a more comprehensive understanding than either approach alone (McBeath, 2022).

By centring the research question as the primary guide, pragmatism permits methodological choices driven by what is most effective for generating actionable insights, rather than preconceived epistemological commitments. This orientation aligns well with the intricate phenomena of psychology, promoting holistic perspectives across diverse dimensions. Moreover, it supports ethical considerations in psychological inquiry by emphasising practical consequences, methodological soundness, and responsibility toward participants and societal impact (Creswell & Plano Clark, 2017; Morgan, 2007).

Overall, pragmatism provides a robust philosophical foundation for mixed-methods research in psychology, enabling flexible, context-responsive designs that enhance both theoretical depth and real-world applicability. Within this study, a key strength emerging from this approach was the ability to triangulate data across multiple participant groups, specifically post-traumatic amputees and healthcare professionals. This triangulation enriched the analysis by capturing converging perspectives from those living the experience and those supporting it clinically, thereby strengthening the credibility, depth, and validity of the findings.

Limitations

The quantitative results were not statistically significant. Despite numerous recruitment efforts over an 18-month period, only 40 complete responses were obtained. This constrained sample underscores the challenges inherent in recruiting participants for research involving sensitive psychological and medical experiences.

First, the relatively small sample size of 40 participants substantially reduced the analyses' statistical power and may have limited the ability to detect meaningful effects. The quantitative component examined group differences in body-image outcomes, assessed through averaged Likert-type scores across several categorical variables, including age, gender, race, years since amputation, and psychological counselling status. The low response rate itself represents a noteworthy limitation, as it may indicate reluctance among amputee patients to revisit potentially distressing experiences through research participation, a concern echoed by healthcare professionals who reported that their patients were hesitant to engage in the study. Additionally, the exclusive use of self-report measures introduces the potential for response bias.

Personal Reflection

This research holds profound personal significance for me, as it stems directly from over 15 years of professional experience in the healthcare and prosthetics sector, both in South Africa and internationally. Throughout my career, I have worked closely with numerous amputee patients, witnessing firsthand the multifaceted challenges they face, not only physical but profoundly psychological and emotional. These encounters repeatedly revealed significant gaps in the provision of psychological support within rehabilitation pathways, gaps that often left patients struggling with adjustment, grief, identity shifts, and diminished quality of life despite advances in prosthetic technology and physical therapy. This persistent observation fuelled my decision to pursue formal training in psychology and ultimately shaped the motivation for this study. The topic is, therefore, close to my heart; it represents a long-standing commitment to advocating for more holistic, patient-centred care that addresses the biopsychosocial dimensions of amputation.

I approached this inquiry pragmatically, with an awareness that complete detachment from the phenomenon under study was neither possible nor desirable. My extensive insider perspective as a professional in the healthcare industry working with amputees inevitably influenced how I engaged with the participants' narratives, interpreted their lived experiences, and made sense of the data. I brought to the research a pre-existing empathy and recognition of the emotional toll of traumatic amputation, informed by years of clinical interactions. This background allowed me to build rapport quickly during interviews and to probe sensitively into sensitive topics, such as phantom limb pain, body image distress, social stigma, and the search for meaning post-amputation.

At the same time, I remained vigilant about the potential for bias. My professional history could predispose me to emphasise certain themes, such as the necessity of integrated psychological care, while perhaps underplaying alternative perspectives or instances where

patients demonstrated remarkable resilience without formal intervention. To mitigate this, I deliberately sought out disconfirming evidence in the literature and in the participants' accounts that challenged my preconceptions, ensuring a balanced representation of experiences. I honestly endeavoured to bracket my assumptions as far as possible and to foreground the participants' meanings rather than imposing my own.

What touched me most deeply was the courage and openness of the patient participants, who entrusted me with their deeply personal and often traumatic stories of sudden loss, profound grief, adaptation struggles, moments of despair, and glimmers of hope. I felt profoundly honoured by their willingness to share these vulnerable experiences, many of which echoed the challenges I had observed over the years but which they articulated with raw authenticity and insight. These conversations were humbling; they reinforced the human dimension of amputation beyond clinical metrics and reminded me of the immense strength individuals summon in the face of life-altering adversity.

I hope that this research does justice to their voices by contributing meaningfully to the limited body of literature on psychological support for post-traumatic amputees, particularly in the South African context, where resource constraints amplify these vulnerabilities. My aspiration is that the findings will serve as evidence to advocate for the routine inclusion and funding of psychological care within amputee rehabilitation programs, not only in South Africa, but across the African continent and beyond. By highlighting the transformative potential of such support, I aim to help shift policy, practice, and reimbursement frameworks toward more comprehensive, equitable care that truly honours the full spectrum of amputees' needs.

Ultimately, this study has been both professionally fulfilling and personally enriching. It has deepened my appreciation for the resilience of the human spirit while underscoring the ethical imperative to ensure no amputee navigates this journey without adequate

psychological accompaniment. The work reaffirms my commitment to bridging the gap between physical restoration and emotional healing in rehabilitation.

Recommendations for future research

Future research should prioritise addressing key methodological and systemic gaps identified in this study to strengthen the evidence base on post-traumatic amputation in South Africa and beyond.

First, the challenges encountered in recruiting participants highlight a broader issue of research hesitancy among post-traumatic amputees, potentially stemming from emotional vulnerability, stigma, mobility limitations, or distrust of healthcare systems. Future studies should employ targeted recruitment strategies, such as collaboration with amputee support groups, peer-led outreach, trauma-informed consent processes, and multi-site sampling, to overcome these barriers and achieve larger, more diverse samples. Enhanced sample sizes would improve the statistical power, generalisability, and robustness of findings related to psychological adjustment, body image, and long-term outcomes.

Second, the absence of comprehensive national or regional patient registries for amputees in South Africa represents a critical limitation for epidemiological understanding and service planning. Establishing or expanding dedicated registries, particularly those capturing trauma-related cases, sociodemographic profiles, aetiology, and psychosocial needs, would provide essential data on incidence, prevalence, and sub-populations. Such registries could inform advocacy efforts, resource allocation, and policy development, enabling better representation of the lived experiences and unmet needs of amputees across diverse contexts.

Third, building on the study's emphasis on the profound psychological impact of traumatic amputation, future investigations should rigorously evaluate the integration of routine psychological care as a minimum standard within holistic rehabilitation protocols.

Longitudinal, mixed-methods research, ideally prospective cohort designs or randomised controlled trials, could assess the efficacy of early, trauma-informed psychological interventions (e.g., counselling, peer mentorship, or cognitive-behavioural approaches) on outcomes such as resilience, self-efficacy, body image satisfaction, prosthetic adherence, quality of life, and reintegration. Comparative studies examining multidisciplinary models with versus without embedded mental health support would help quantify benefits and identify implementation barriers in resource-constrained settings like South Africa.

Lastly, it may also be valuable for future studies to include health-economic outcomes research to demonstrate not only the benefits for funders, providers, and government stakeholders, including private medical schemes, but also the wider societal and economic gains associated with integrating psychological care into rehabilitation programmes. By supporting faster social reintegration and improved functional outcomes, such investments may ultimately enable amputee patients to participate more fully in their communities and contribute meaningfully to the economy.

Collectively, these directions would advance person-centred, evidence-informed care, ultimately contributing to improved holistic rehabilitation practices and better long-term well-being for individuals living with limb loss.

Conclusion

In conclusion, the lived experiences documented in this research present a narrative of profound loss tempered by the human capacity for resilience and transformation. These accounts challenge simplistic or reductive conceptualisations of disability, highlighting the need for empathy, agency, and inclusive, person-centred approaches in clinical practice, rehabilitation policy, and broader societal discourse. By addressing the psychosocial dimensions of traumatic limb loss with the same rigour as the physical aspects, future care

can more effectively support individuals not merely to survive, but to thrive in the aftermath of amputation.

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Appendices

Appendix A: Unisa Ethics Clearance Certificate



COLLEGE OF HUMAN SCIENCES RESEARCH ETHICS REVIEW COMMITTEE

13 December 2023

Dear Mrs Louise Van Der Merwe

NHREC Registration # :

Rec-240816-052

CREC Reference # :

47474181_CREC_CHS_2023

Decision:

Ethics Approval from 13 December 2023 to 13 December 2024

Researcher(s): Name: Mrs. L. Van Der Merwe

Contact details: 47474181@mylife.unisa.ac.za

Supervisor(s): Name: Dr N. Themistocleous

Contact details: themis@unisa.ac.za

Title: Exploring the impact of psychological intervention on self-esteem and body image in post-traumatic limb amputation patients: a mixed methods study

Degree Purpose: Masters

Thank you for the application for research ethics clearance by the Unisa College of Human Science Ethics Committee. Ethics approval is granted for one year.

The *medium-risk application* was reviewed by College of Human Sciences Research Ethics Committee, in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the



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- confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
 6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
 7. No fieldwork activities may continue after the expiry date (**13 December 2024**). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

*The reference number **47474181_CREC_CHS_2023** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

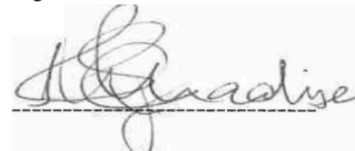
Yours sincerely,

Signature:



Prof. KB Khan
CHS Research Ethics Committee Chairperson
Email: khankb@unisa.ac.za
Tel: (012) 429 8210

Signature: PP



Prof ZZ Nkosi
Exécutive Dean: CHS
E-mail: nkosizz@unisa.ac.za
Tel: 012 429 6758



Appendix B: Qualitative Interview Questions

Qualitative Interview Questions for Patient Participants:

1. Please can you describe your experience that led to your limb amputation, and the impact this has had on your life.
2. What has been the most challenging aspects to deal with post amputation?
3. How would you describe your view of yourself, and of your body before the amputation?
4. How would you describe your view of yourself and of your body post-amputation?
5. If you received psychological intervention, please describe your experience of this, and how this intervention contributed to your overall rehabilitation.

Qualitative Interview Questions for Healthcare Professional Participants

1. In your experience, how would describe the impact of a post-trauma amputation on patients' overall wellbeing, and specifically on their perceptions regarding their body-image and self-esteem?
2. In your experience, what differences do you notice in terms of patients' rehabilitation and overall wellbeing in those who have received psychological intervention, and those who have not?
3. In your opinion, how does the perception of one's body-image and self-esteem impact or influence their rehabilitation process?
4. What is your opinion regarding including psychological intervention as a core aspect of patients' rehabilitation process?

Appendix C: Permission letter to conduct research

PERMISSION LETTER

Research title: Exploring the impact of psychological intervention on self-esteem and body image in post-traumatic limb amputation patients: A mixed methods study.

Researcher: Louise Van Der Merwe

Request for permission to conduct research at UNISA.

“Exploring the impact of psychological intervention on self-esteem and body image in post-traumatic limb amputation patients: A mixed methods study.”

13 March 2024

Dr. Nikki Themistocleous

Department of Psychology

0124298277 / themin@unisa.ac.za

Dear ,

I, Louise Van Der Merwe am doing research with Dr. Nikki Themistocleous, a Senior Lecturer in the Department of Psychology towards a MA Psychology at the University of South Africa. We are inviting you to participate in a study entitled “*Exploring the impact of psychological intervention on self-esteem and body image in post-traumatic limb amputation patients: A mixed methods study.*”

The aim of the study is to explore the impact of psychological intervention on self-esteem and body image in post-traumatic amputation patients.

Your practice has been selected because your patient population includes post-traumatic amputee patients who are relevant to the study and could be potential participants.

The study will entail a quant-qual sequential explanatory mixed-method approach. A mixture of quantitative and qualitative methods will be used in a mixed methods research approach as quantitative and qualitative methods can be used together under a single paradigm and has grown as a rigorous scientific method in the social, behavioural, and health sciences. A mixed methods approach offers deeper insights into the relevant research topic versus what quantitative or qualitative methods would have uncovered by themselves.

There are no direct benefits to the participants such as monetary benefits, however, an extended benefit includes the potential to contribute to improved patient care and the inclusion of psychotherapeutic intervention as a core aspect of treatment and the rehabilitation process.

Potential risks might include anxiety and emotional discomfort when participants recall their traumatic limb loss experiences. Should patients experience any discomfort during the interview, it will be stopped immediately. Furthermore, participants will be referred to relevant psychological services should this be necessary, these include: The Unisa Psychotherapy Clinic and the South African Depression and Anxiety Group.

Feedback procedure will entail sharing of the study results.

Yours sincerely

A handwritten signature in dark ink, appearing to be 'Louise Van Der Merwe', written on a light blue background.

Louise Van Der Merwe

Student

Appendix D: Information and Informed Consent Form – Post-Traumatic Amputee Patients

Dear Participant

Thank you for agreeing to be part of the research project titled: Exploring the impact of psychological intervention on self esteem and body image in post-traumatic limb amputation patients: A mixed methods study. The researcher, Louise Van Der Merwe is currently a MA Psychology student at the University of South Africa embarking on a study titled: Exploring the impact of psychological intervention on self-esteem and body image in post-traumatic limb amputation patients: A mixed methods study.

The aim of the current study is intended to explore the hypothesis that post-traumatic amputee patients who undergo psychological counselling as part of their rehabilitation journey will have better overall body-image and self-esteem than patients who do not receive psychological counselling at all. Thus, the research question guiding this study is:

Is there a difference in body image and self-esteem between trauma-related amputees who have undergone psychological intervention, and those who have not?

You have been identified as a prospective participant for this project and are thus invited to participate in the above-mentioned study. Your experience in this field will be highly beneficial and may work towards new insights and ultimately answering the research questions of the study.

Your participation in the study is voluntary and you are free to withdraw at any time without prejudice or consequence. Data collection will be in the form of individual face-to-face interviews. The interviews will be audio recorded, and later transcribed to ensure the trustworthiness of the study, however, the researcher will ensure that all personal and

identifying information will be secured during, and after the study is completed. Parts of the transcriptions may be included in the study, or as appendices, however, all identifying information will be absent.

The findings of the study will be used as part of the final mini-dissertation to be submitted for examination as part of the MA Psychology Programme.

There are no direct benefits to the participants, however, an extended benefit includes the potential to contribute to improved patient care and the inclusion of psychotherapeutic intervention as a core aspect of post-trauma amputation treatment.

There are no foreseeable or expected negative consequences for participating in the research. If, however, the interview causes you any discomfort, you can be referred to the following psychological services to provide psychological counselling:

1. Unisa Psychotherapy Clinic (at Muckleneuk Campus, Pretoria) - (012) 429 8930
2. Unisa Student Counselling <http://www.unisa.ac.za/counselling> or counselling@unisa.ac.za (for Unisa students only)
3. South African Depression and Anxiety Group
4. Lifeline South Africa – 011 715 2000 Should you require any debriefing, counselling or feedback during or after your interview, such will be arranged and provided to you free of charge.

All information which is collected about you during the course of this research study will be kept strictly confidential. The researcher, supervisors, examiners, transcribers and co-coders may have access to your data, but all personal and identifying information will be removed. Additionally, confidentiality agreements will be required from all service providers (e.g. transcribers).

You will not be remunerated for your participation in the study and there will be no direct benefits to participating in this study. There are no incentives linked to your participation in this study.

I _____ (name of participant) agree to take part in the above-mentioned study, and acknowledge the following conditions:

1. I participate voluntarily in the above-mentioned study, and have not been convinced or coerced in any way.
2. I understand the aims of the study and the procedures that will be followed.
3. I understand that no compensation will be afforded to me for my participation, nor will there be any cost to me.
4. I understand and acknowledge that information I share will be used as part of a mini-dissertation for examination as part of the MA Clinical Psychology Degree, at the University of South Africa.
5. I understand that I may withdraw from the study at any time, without any negative consequences. In such a case I therefore acknowledge that any information shared by myself will not be used as part of the study.

My participation is voluntary

☐	YES	☐	NO
--------------------------	-----	--------------------------	----

I was not pressured or convinced to participate

☐	YES	☐	NO
--------------------------	-----	--------------------------	----

I was given the opportunity to ask questions and clarify
any information, which was clearly and satisfactorily
answered

☐	YES	☐	NO
--------------------------	-----	--------------------------	----

I understand and accept all the above conditions

☐	YES	☐	NO
--------------------------	-----	--------------------------	----

Louise Van Der Merwe

Dr. Nikki Themistocleous

Name of Researcher

Name of Supervisor

Researcher

Supervisor

Signed at:		On		20
Full Name:				
Signature:				

Appendix E: Information And Informed Consent Form – Healthcare Professionals

Dear Participant

Thank you for agreeing to be part of the research project titled: Exploring the impact of psychological intervention on self esteem and body image in post-traumatic limb amputation patients: A mixed methods study. The researcher, Louise Van Der Merwe is currently a MA Psychology student at the University of South Africa embarking on a study titled: Exploring the impact of psychological intervention on self-esteem and body image in post-traumatic limb amputation patients: A mixed methods study.

The aim of the current study is intended to explore the hypothesis that post-traumatic amputee patients who undergo psychological counselling as part of their rehabilitation journey will have better overall body-image and self-esteem than patients who do not receive psychological counselling at all. Thus, the research question guiding this study is:

Is there a difference in body image and self-esteem between trauma-related amputees who have undergone psychological intervention, and those who have not?

You have been identified as a prospective participant for this project and are thus invited to participate in the above-mentioned study. Your experience in this field will be highly beneficial and may work towards new insights and ultimately answering the research questions of the study.

Your participation in the study is voluntary and you are free to withdraw at any time without prejudice or consequence. Data collection will be in the form of 1) online questionnaires and 2) individual interviews. Depending on the Covid-pandemic status at the time of interviews,

these will be conducted either face-to-face or online. The interviews will be audio recorded, and later transcribed to ensure the trustworthiness of the study, however, the researcher will ensure that all personal and identifying information will be secured during, and after the study is completed. Parts of the transcriptions may be included in the study, or as appendices, however, all identifying information will be absent.

The findings of the study will be used as part of the final mini-dissertation to be submitted for examination as part of the MA Psychology Programme.

There are no direct benefits to the participants, however, an extended benefit includes the potential to contribute to improved patient care and the inclusion of psychotherapeutic intervention as a core aspect of post-trauma amputation treatment.

There are no foreseeable or expected negative consequences for participating in the research.

If, however, the interview causes you any discomfort, you can be referred to the following psychological services to provide psychological counselling:

1. Unisa Psychotherapy Clinic (at Muckleneuk Campus, Pretoria) - (012) 429 8930
2. Unisa Student Counselling <http://www.unisa.ac.za/counselling> or counselling@unisa.ac.za (for Unisa students only)
3. South African Depression and Anxiety Group
4. Lifeline South Africa – 011 715 2000. Should you require any debriefing, counselling or feedback during or after your interview, such will be arranged and provided to you free of charge.

All information which is collected about you during the course of this research study will be kept strictly confidential. The researcher, supervisors, examiners, transcribers and co-coders may have access to your data, but all personal and identifying information will be removed.

Additionally, confidentiality agreements will be required from all service providers (e.g. transcribers).

You will not be remunerated for your participation in the study and there will be no direct benefits to participating in this study. There are no incentives linked to your participation in this study.

I _____ (name of participant)

agree to take part in the above-mentioned study, and acknowledge the following conditions:

1. I participate voluntarily in the above-mentioned study, and have not been convinced or coerced in any way.
2. I understand the aims of the study and the procedures that will be followed.
3. I understand that no compensation will be afforded to me for my participation, nor will there be any cost to me.
4. I understand and acknowledge that information I share will be used as part of a mini-dissertation for examination as part of the MA Clinical Psychology Degree, at the University of South Africa.
5. I understand that I may withdraw from the study at any time, without any negative consequences. In such a case I therefore acknowledge that any information shared by myself will not be used as part of the study.

My participation is voluntary

☐	YES	☐	NO
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I was not pressured or convinced to participate

☐	YES	☐	NO
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I was given the opportunity to ask questions and clarify

☐	YES	☐	NO
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any information, which was clearly and satisfactorily answered

I understand and accept all the above conditions

☐	YES	☐	NO
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Louise Van Der Merwe

Dr. Nikki Themistocleous

Name of Researcher

Name of Supervisor

Researcher

Supervisor

Signed at:		On		20
Full Name:				
Signature:				

Appendix F: Participant Information Sheet – Post-Traumatic Amputee Patients

Ethics clearance reference number: 47474181_CREC_CHS_2023

Research permission reference number (if applicable): Rec-240816-052

Date: 02 February 2024

Title: Exploring the impact of psychological intervention on self-esteem and body image in post-traumatic limb amputation patients: A mixed methods study.

Dear Prospective Participant

My name is Louise Van Der Merwe, a MA Psychology student at the University of South Africa. I am doing research with Dr Nikki Themistocleous, a Senior Lecturer and Clinical Psychologist in the Department of Psychology at the University of South Africa, towards a Masters Degree in Psychology. We are inviting you to participate in a study entitled: *Exploring the impact of psychological intervention on self-esteem and body image in post-traumatic limb amputation patients: A mixed methods study.*

WHAT IS THE PURPOSE OF THE STUDY?

I am conducting this research to explore the hypothesis that post-traumatic amputee patients who undergo psychological counselling as part of their rehabilitation journey will have better overall body-image and self-esteem than patients who do not receive psychological counselling at all. Thus, the research question guiding this study is:

Is there a difference in body image and self-esteem between trauma-related amputees who have undergone psychological intervention, and those who have not?

WHY AM I BEING INVITED TO PARTICIPATE?

Thank you for responding to the call for participation. In order to conduct this research, we would like to recruit patients who have had a post-trauma amputation. The aim is to compare the level of self-esteem and body-image of post-trauma patients who have received psychological intervention with those who have not. To participate in the study, we are inviting post-amputee patients who meet the following criteria:

- 1) South African adult participants, 18 years and older, who
- 2) have suffered traumatic limb loss a minimum of one year before the commencement of the study, and
- 3) participants who have received psychotherapy, regardless of duration, and
- 4) participants who have not received psychotherapy.

As you meet the inclusion criteria required, we would like to invite you to participate in this research study.

Before you decide to participate in this research study, it is important that you understand why the research is being done and what it will involve. Please take time to read this information sheet carefully. Ask us if there is anything that is not clear or if you would like more information.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

The study involves participation in two phases.

The first phase involves completing two online questionnaires that measure your body-image and self-esteem. The data obtained from these questionnaires are anonymous, and we cannot trace your responses back to you. The second phase involves a semi-structured, face-to-face interview that will be conducted by me, the researcher, at an agreed time that is convenient to you, and at an agreed upon place that will be conducive to conduct the interview. You will be asked to describe your experience of traumatic limb loss, which is the phenomenon under study. The interview will be audio-recorded, and later transcribed verbatim, and should not take longer than approximately 60-90 minutes. Your identifying characteristics and information will be removed from the transcriptions for confidentiality reasons. The information gathered from the interviews will be published in the form of a research dissertation, and academic articles.

CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

You are under no obligation to consent to participate. Participation in this research study is voluntary and there is no penalty or negative consequence for non-participation, or for withdrawing from participating at any time during the study. However, once you have answered the online questionnaires, we cannot trace your responses back to you, and therefore cannot delete your responses. You are welcome to withdraw at any point during or after the interviews, without consequences. If you do decide to take part, you will be given this information sheet to keep and you will be asked to sign a written consent form. You may choose to withdraw from the study at any time, without giving a reason, and there will be no negative consequences rising pertaining to your withdrawal. If you withdraw, the information that you have provided will not be used in the study.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

You will not be remunerated for your participation in this study and there will be no direct benefits to participating in this study. You will also not incur any costs for participating in this research study. However, an extended benefit of participation includes the potential to contribute to improved patient care and the inclusion of psychotherapeutic intervention as a core aspect of post-trauma amputation treatment and rehabilitation.

ARE THERE ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?

There are no identifiable negative consequences, or risks involved in participating. However, if questions appear to cause you, the participant, any distress or discomfort, you will be given the opportunity to exit the interview and you will be referred to appropriate counselling services, at no cost to you, at The Unisa Psychotherapy Clinic and the South African Depression and Anxiety Group. If you find any questions personal and confronting, you can refuse to answer that particular question. The research will be conducted in accordance with the ethical and professional guidelines as specified by the Research Ethics Committee at UNISA.

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

All information which is collected about you during the course of this research study will be kept strictly confidential. Your answers may be reviewed by people responsible for making sure that the research is done properly, including the supervisor, the transcriber, external coder, and members of the Research Ethics Review Committee, however, your answers will

be given a code number or a pseudonym, and you will be referred to in this way in the data, publications, and other research reporting methods such as conference proceedings. All service providers (e.g. transcribers, co-coders and editors will be subject to a confidentiality contract to ensure that all information is protected and kept confidential]. Access to the interview material will be restricted to myself and my supervisor, and will be processed and analysed only by me. For the duration of the study all hard copies, the audio-recorded interview, the transcript of the interview, and your signed consent form will be stored safely in a locked cupboard/filing cabinet in a secure/locked office at the University of South Africa with restricted access. In addition, electronic copies of data will be secured on a password protected device, and all documents will be encrypted with a password. The transcript of interviews in which all identifying information has been removed will be retained in a locked cupboard/filing cabinet in a secure/locked office at the University of South Africa for a further six years after the researcher's degree has been conferred.

HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?

Hard copies of your interviews will be stored by the researcher for a minimum period of six years in a locked cupboard/filing cabinet in a secure / locked office at the University of South Africa for future research or academic purposes. Electronic information will be stored on a password-protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable.

Hard copies will be shredded and electronic copies will be permanently deleted from the hard drive of the computer through the use of a relevant software programme after the six-year period.

WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

You will not be remunerated for your participation in the study and there will be no compensation to participating in this study. There are no incentives linked to your participation in this study.

HAS THE STUDY RECEIVED ETHICS APPROVAL?

This study has received written approval from the Research Ethics Review Committee in the Department of Psychology, UNISA. A copy of the approval letter can be obtained from the researcher if you so wish. The ethical clearance number is: 47474181_CRECH_CHS_2023

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

If you would like to be informed of the final research findings, please contact Louise Van Der Merwe [47474181@mylife.unisa.ac.za]. The information will be published in the form of a dissertation and academic article, and can be accessed through the library at Unisa. You can also contact me for a summary of the findings once the degree has been conferred. Should you require any further information or want to contact the researcher about any aspect of this study, please email Louise Van Der Merwe [47474181@mylife.unisa.ac.za].

Should you have concerns about the way in which the research has been conducted, you may contact Dr Nikki Themistocleous on 012 429 8277 or email themini@unisa.ac.za; or alternatively contact the administrator of the Department of Psychology Research Ethics Review Committee nyamanj@unisa.ac.za

Thank you for taking time to read this information sheet and for participating in this study.

Thank you,



Louise Van Der Merwe

CONSENT TO PARTICIPATE IN THIS STUDY

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the interview questions.

I have received a signed copy of the informed consent agreement.

Participant Name & Surname..... (please print)

Participant Signature.....Date.....

Researcher's Name & Surname.....(please print)

Researcher's signature.....Date.....

Appendix G: Participant Information Sheet – Healthcare Professionals

Ethics clearance reference number: 47474181_CRECHS_2023

Research permission reference number (if applicable): Rec-240816-052

Date: 02 February 2024

Title: Exploring the impact of psychological intervention on self-esteem and body image in post-traumatic limb amputation patients: A mixed methods study.

Dear Prospective Participant

My name is Louise Van Der Merwe, a MA Psychology student at the University of South Africa. I am doing research with Dr Nikki Themistocleous, a Senior Lecturer and Clinical Psychologist in the Department of Psychology at the University of South Africa, towards a Masters Degree in Psychology. We are inviting you to participate in a study entitled: *Exploring the impact of psychological intervention on self-esteem and body image in post-traumatic limb amputation patients: A mixed methods study.*

WHAT IS THE PURPOSE OF THE STUDY?

I am conducting this research to explore the hypothesis that post-traumatic amputee patients who undergo psychotherapy as part of their rehabilitation journey will have better overall body-image and self-esteem than patients who do not receive psychological counselling at all. Thus, the research question guiding this study is:

Is there a difference in body image and self-esteem between trauma-related amputees who have undergone psychological intervention, and those who have not?

WHY AM I BEING INVITED TO PARTICIPATE?

Thank you for responding to the call for participation. In order to conduct this research, we would like to interview healthcare professionals (HCPs) who work closely with post-traumatic amputee patients. The criteria to be included in the study include:

1. Healthcare Professionals who work directly with post-traumatic amputee patients.

As you meet the inclusion criteria required, we would like to invite you to participate in this research study. We require a sample of approximately 5-10.

Before you decide to participate in this research study, it is important that you understand why the research is being done and what it will involve. Please take time to read this information sheet carefully. Ask us if there is anything that is not clear or if you would like more information.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

The study involves a semi-structured, face-to-face interview that will be conducted by me, the researcher, at an agreed time that is convenient to you, and at an agreed upon place that will be conducive to conduct the interview. You will be asked to describe your experience of traumatic limb loss amongst patients, and specifically your perceptions of the patients' body-image and self-esteem. The interview will be audio-recorded, and later transcribed verbatim, and should not take longer than approximately 60-90 minutes. Your identifying

characteristics and information will be removed from the transcriptions for confidentiality reasons. The information gathered from the interviews will be published in the form of a research dissertation, and academic articles.

CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

Participation in this research study is voluntary and there is no penalty or negative consequence for non-participation, or for withdrawing from participating. In addition, you are under no obligation to consent to participate. If you do decide to take part, you will be given this information sheet to keep and you will be asked to sign a written consent form. You may choose to withdraw from the study at any time, without giving a reason, and there will be no negative consequences rising pertaining to your withdrawal. If you withdraw, the information that you have provided will not be used in the study.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

You will not be remunerated for your participation in this study and there will be no direct benefits to participating in this study. You will also not incur any costs for participating in this research study. However, an extended benefit of participation includes the potential to contribute to improved patient care and the inclusion of psychotherapeutic intervention as a core aspect of treatment.

ARE THERE ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?

There are no identifiable negative consequences, or risks involved in participating. However, if questions appear to cause you, the participant, any distress or discomfort, you will be given the opportunity to exit the interview and you will be referred to appropriate counselling services, at no cost to you, namely The Unisa Psychotherapy Clinic and the South African Depression and Anxiety Group. If you find any question personal and confronting, you can refuse to answer that particular question. The research will be conducted in accordance with the ethical and professional guidelines as specified by the Research Ethics Committee at UNISA.

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

All information which is collected about you during the course of this research study will be kept strictly confidential. Your answers may be reviewed by people responsible for making sure that the research is done properly, including the supervisor, the transcriber, external coder, and members of the Research Ethics Review Committee, however, your answers will be given a code number or a pseudonym, and you will be referred to in this way in the data, publications, and other research reporting methods such as conference proceedings. All service providers (e.g. transcribers, co-coders and editors will be subject to a confidentiality contract to ensure that all information is protected and kept confidential]. Access to the interview material will be restricted to myself and my supervisor, and will be processed and analysed only by me. For the duration of all hard copies of the study, the audio-recorded interview, the transcript of the interview, and your signed consent form will be stored safely in a locked cupboard/filing cabinet in a secure/locked office at the University of South Africa with restricted access. In addition, or electronic copies of data will be secured on a password protected device, and all documents will be encrypted with a password. The transcript of interviews in which all identifying information has been removed will be retained in a locked

cupboard/filing cabinet in a secure/locked office at the University of South Africa for a further six years after the researcher's degree has been conferred.

HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?

Hard copies of your interviews will be stored by the researcher for a minimum period of six years in a locked cupboard/filing cabinet in a secure / locked office at the University of South Africa for future research or academic purposes. Electronic information will be stored on a password-protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable.

Hard copies will be shredded, and electronic copies will be permanently deleted from the hard drive of the computer through the use of a relevant software programme after the six-year period.

WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

You will not be remunerated for your participation in the study and there will be compensation to participating in this study. There are no incentives linked to your participation in this study.

HAS THE STUDY RECEIVED ETHICS APPROVAL?

This study has received written approval from the Research Ethics Review Committee in the Department of Psychology, UNISA. A copy of the approval letter can be obtained from the researcher if you so wish. The ethical clearance number is: 47474181_CRECHS_2023

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

If you would like to be informed of the final research findings, please contact Louise Van Der Merwe [47474181@mylife.unisa.ac.za] The information will be published in the form of a dissertation and academic article, and can be accessed through the library at Unisa. You can also contact me for a summary of the findings once the degree has been conferred. Should you require any further information or want to contact the researcher about any aspect of this study, please contact Louise Van Der Merwe [47474181@mylife.unisa.ac.za].

Should you have concerns about the way in which the research has been conducted, you may contact Dr Nikki Themistocleous on 012 429 8277 or email themin@unisa.ac.za; or alternatively contact the administrator of the Department of Psychology Research Ethics Review Committee nyamanj@unisa.ac.za

Thank you for taking time to read this information sheet and for participating in this study.



Louise Van Der Merwe

CONSENT TO PARTICIPATE IN THIS STUDY

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the interview questions.

I have received a signed copy of the informed consent agreement.

Participant Name & Surname..... (please print)

Participant Signature.....Date.....

Researcher's Name & Surname.....(please print)

Researcher's signature.....Date.....

Appendix H: Turnitin Digital Receipt

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