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Dyadic Partner Perspectives of Ageing with Hearing Handicap in the Audible World

A thesis presented in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Psychology at Massey University, Palmerston North

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Abstract

Background and Purpose: Grounded in Green and Kreuter's (1991) flexible research framework (the PRECEDE model), the prime purpose of this doctoral research agenda has been to enhance our understanding of the frequently obscure psychosocial implications of ageing with hearing handicap (HH) in the audible world, by focusing on the dyadic perspectives of older New Zealand (NZ) ex-service personnel and their spouses. Glass and Balfour's (2003) Ecological Model of Ageing guided the multidisciplinary literature review, in order to accommodate the functional implications of age-related losses which could potentially exacerbate the social and emotional sequelae of ageing with HH and tinnitus. In addition, Cohen's (1992) Transactional Model of Stress (which integrates three social support constructs with Lazarus and Folkman's [1984] model describing adaptations to stressful events), illustrates how on-going social and emotional adjustments to hearing losses could potentially affect older adults' health-related quality of life (H-QoL). Infused by these transdisciplinary ecological perspectives, a composite model of Ageing with Hearing Handicap was proposed to explore older dyadic partner perspectives of NZ veterans' adjustment to ageing with hearing handicap; and to identify which factors exerted the most influence over the veterans' self-reported perceptions of HH and H-QoL.

Methods: A purposive pilot study sample (N=51 veterans) initially guided the appropriate selection of ecologically relevant biopsychosocial variables and data collection methods (self-report mail out booklets) for two subsequent studies: (i) The main 'parent' study (referred to as the Hearing Aid Research Project [HARP]), which examined the predictors of hearing aid use in veterans aged 50 year and older; and (ii) The doctoral study, which explored dyadic perspectives of ageing with HH. The doctoral study's dyadic partner sample (N=671 dyads) comprised a subset of the 1249 HARP veterans. This subset met the doctoral study's inclusion criteria of male veterans aged 65 years plus, who had responded with a female partner/spouse residing in the same household. Only dyads with reasonably complete mail out survey response sets were selected. The dyadic partner response sets included social demographic details and responses to a number of constructs relevant to the doctoral research context including: aural rehabilitation, HH, H-QoL, emotional wellbeing, social support and memory in everyday life.

Results: The results describe significantly different aural rehabilitation coping trajectories between the self-identified 'first time' and more experienced hearing aid users; and dyadic partner comparisons which highlight that the female partners were more acutely aware of the stigmatising impact of hearing losses on the veterans' social and emotional agency. Analyses of the intersecting structural and functional features of social support illustrated that increasing levels of the veterans' hearing handicap (HH) exacerbated both partners' social isolation. Wenger's (1994) support network typology illustrated how both partners' depressive symptoms and the veterans' frequency of forgetting increased significantly across a socially integrated to isolated support network continuum. The composite model of Ageing with Hearing Handicap accounted for 71.5% of the variation in the veterans' self-reported HH; 62.6% of their physical and 37.3% of their mental H-QoL. The multivariate analyses also demonstrated that HH produced a direct and negative impact on the veterans' mental H-QoL, by constraining their social and emotional agency; but only indirectly on their physical H-QoL, through reducing their energy levels and constraining their social participation.

Conclusions: These transdisciplinary perspectives provide cross-sectional insights about the social and emotional wellbeing of veterans ageing with HH and their spouses, and suggest downstream links that affect their H-QoL. These findings highlight the importance of hearing health policy agendas and the communication contexts of health service delivery across all age groups. Moreover, by resolving the complex methodological and conceptual challenges inherent in focussing on older dyadic partners' everyday experiences, targets have become apparent for further investigation, to enhance and refine our understandings of engaging ecological perspectives when conducting health research.

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This thesis reflects the perspectives of older New Zealand veterans and their spouses. I thank them for their willing participation; and share their wishes that the time they have so generously invested in this research will be repaid, by enhancing local knowledge and understanding to assist veterans and their family/whanau cope more effectively to minimise the invisible burden of hearing handicap.

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List of Abbreviations & Acronyms

3MS	Modified Mini Mental State questionnaire
AAT	Acute acoustic trauma
ADLs	Activities of daily living
AHEAD	Assets and Health Dynamics of the Oldest-Old study (University of Michigan, USA)
ALD	Assistive listening device
ALSA	Australian Longitudinal Study of Ageing
ANOVA	Analysis of Variance
AQoL	Assessment of Quality of Life questionnaire (constructed and used by Hawthorne et al. [2000] in Australia)
ARHL	Age-related hearing losses
ASP	Attending during Semantic Processing MAC-S factor gauging self-reported memory in everyday life
BAS	Berlin Ageing Study
β	Beta coefficient – a value indicating the strength of prediction of the independent variable on the criterion or dependent variable
BL	Borderline or transitional Wenger support network (due to co-alignment with two types of networks)
BMHS	Blue Mountain Hearing Study (Australia)
BP	Bodily Pain SF-36 subscale
χ^2	Chi-squared statistical measure of difference
cf	Confer or compare
COPD	Chronic obstructive pulmonary disease
CPU	Central Processing Unit
DU	Self-reported frequency of daily hearing aid use
DV	Dependent variable
EMA	Ecological Model of Ageing

EPESE	Establishment of a Population/Populations for Epidemiological Studies of the Elderly (USA)
η^2	Eta squared (statistical measure of the effect of the IV on the DV in an ANOVA)
F test	Compares the variance in two sets of data by dividing one by the other; used in all ANOVA tests
FCL	First Contact Letter
FD	Family Dependent Wenger support network
GDS-15	15 item Geriatric Depression Scale
GF	General Forgetfulness MAC-S factor gauging self-reported memory in everyday life
GH	General Health SF-36 subscale
GR	General Retrieval MAC-S factor gauging self-reported memory in everyday life
GU	Self-reported frequency of general hearing aid use
HANZ	Hearing Association New Zealand Te Kähui Rongo o Aotearoa
HAPI	Hearing Aid Performance Inventory
HARP	Hearing Aid Research Project
HH	Hearing handicap
HHI	Hearing Handicap Inventory
HHIA	Hearing Handicap Inventory for Adults (i.e. 25 item questionnaire for those < 65 years)
HHIE	Hearing Handicap Inventory for the Elderly (i.e. 25 item questionnaire for those ≥ 65 years)
HHIEe	Hearing Handicap Inventory for the Elderly *emotional subscale* score (total of responses to 13 designated items)
HHIEs	Hearing Handicap Inventory for the Elderly *social subscale* score (total of responses to 12 designated items)
HHIE-S	Ten item screening version of the Hearing Handicap Inventory for the Elderly (i.e. for those ≥ 65 years)

HHIE-S (SP)	Ten item screening version that gauges spousal perceptions of someone with hearing losses, utilising the Hearing Handicap Inventory for the Elderly (i.e. for those ≥ 65 years)
HL	Hearing loss/es
H-QoL	Health-related quality of life
HU	Self-reported number of hours hearing aid/s used during an average day
IADLs	Instrumental activities of daily living
ICIDH-2	International classification of functioning, disability, and health 2
IN	Inconclusive Wenger support network (due to co-alignment with more than two types of networks)
IV	Independent variable
LASA	Longitudinal Ageing Study Amsterdam
LI	Locally Integrated Wenger support network
LNI	Lower North Island pool of veterans invited to participate in the research
LSC	Local Self-Contained Wenger support network
M	Mean – a measure of central tendency
MAC-S	Memory Assessment Clinic Self-report scale
MCS	Mental Component Summary – a composite of four SF-36 mental health subscales
MCS_{MR} / $MCS_{S/P}$	SF-36 Mental Component Summary score of the Main Respondent (i.e. MCS_{MR}) or their spouse/partner (i.e. $MCS_{S/P}$)
MH	Mental Health SF-36 subscale
MH-QoL	Mental health-related quality of life
MMSE	Mini Mental State Examination
MOS	Mail out survey

MR	Main respondent (i.e. the veteran)
NAC	National Audiology Centre (in Auckland)
NAI	Network Assessment Instrument
NAL	National Acoustics Laboratory (Australia)
NAL% HL	National Acoustics Laboratory (Australia) percentage bi-lateral hearing loss
NHIS	National Health Interview Survey (USA)
NI	North Island
NIHL	Noise-induced hearing losses
NZ	New Zealand
NZWP	New Zealand War Pensions
p	Probability of chance of occurrence reported in inferential statistics result
PCA	Principal components analysis
PCS	Physical Component Summary – a composite of four SF-36 physical health subscales
PCS_{MR} / $PCS_{S/P}$	SF-36 Physical Component Summary score of the Main Respondent (i.e. PCS_{MR}) or their spouse/partner (i.e. $PCS_{S/P}$)
PF	Role limitations due to Physical Functioning SF-36 subscale
PH-QoL	Physical health-related quality of life
PR	Private Restricted Wenger support network
PRECEDE-PROCEED	**P**redisposing, **R**einforcing and **E**nabling **C**onstructs in **E**ducational **D**iagnosis and **E**valuation – **P**olicy, **R**egulatory and **O**rganisational **C**onstructs in **E**ducational and **E**nvironmental **D**evelopment
PTS	Permanent threshold shift
r	Correlation coefficient – a value indicating the strength of the relationship between two measures/variables

R	Measures the correlation in a multiple regression equation between (a) the actual values of the criterion or dependent variable and (b) the shared unique variance in the criterion variable that is explained by the independent variables
R^2	Estimates the amount of variance in the criterion or dependent variable that is explained by other variables
RE	Role limitations due to Emotional health SF-36 subscale
RONZ	Rest of New Zealand pool of veterans invited to participate in the research
RP	Role limitations due to Physical health SF-36 subscale
RSA	Royal New Zealand Returned and Services' Association
SAHS	South Australian Hearing Study
SD	Standard Deviation or measure of dispersion within a range of scores
SES	Socio-economic status
SF	Social Functioning SF-36 subscale
SF-36	Short form health-related quality of life questionnaire (36 items)
SHAPI	Shortened Hearing Aid Performance Inventory (38 items)
SNT	Wenger's support network typology
S/P	Spouse/partner (i.e. of the veteran / main respondent [MR])
SPSS	Statistical Package for the Social Sciences computer software
SSQ / SSQ6	Social Support Questionnaire / 6 item version of SSQ developed by Sarason et al. (1987)
SSQn / SSQ6n	Average number of people listed available to provide emotional support in response to Sarason et al.'s brief 6 item measure of social support
SSQs / SSQ6s	Average perceived satisfaction with the availability of emotional support in response to Sarason et al.'s brief 6 item measure of social support

***t* test**	A *t* test determines whether the difference between two means is significant
TICS	Telephone Interview for Cognitive Status
TICS-m	Modified Telephone Interview for Cognitive Status
TMS	Transaction Model of Stress (Cohen, 1992)
TTS	Temporary threshold shift
UN	United Nations
US / USA	United States of America
VT	Vitality SF-36 subscale
WC	Wider Community Wenger support network
WCF	Wenger Community Focus factor scores
WFF	Wenger Family Focus factor scores
WHO	World Health Organisation
WWII	World War II
z	The z-score determines whether the proportional difference between two sample means is significant