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# **The Prevalence and Impact of the Co-morbidity of Scabies and Other Neglected Tropical Diseases in Two Countries in the Asia-Pacific Region**



**Funafuti Atoll, Tuvalu**

**Sonia Pauline Harmen, M. App. Sc, B. Sc**

**Partial requirement for the degree of Doctor of Public Health in the  
School of Public Health, Tropical Medicine and Rehabilitation  
Sciences**

**James Cook University, Townsville, Australia**

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## Declaration on Ethics

The research presented and reported in this thesis was conducted within the guidelines for research ethics outlined in the *National Statement on Ethics Conduct in Research Involving Human* (1999), the *Joint NHMRC/AVCC Statement and Guidelines on Research Practice* (1997), the *James Cook University Policy on Experimentation Ethics. Standard Practices and Guidelines* (2001), and the *James Cook University Statement on Research Practice* (2001). The proposed research methodology received clearance from the James Cook University Experimentation Ethics Review Committee (**H2374**).

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# Statement of the Contribution of Others

The research included in this document was accomplished through collaboration with many individuals, agencies and organizations. I wish to acknowledge the contributions of the following for their invaluable input and technical support on the research projects described in this document.

## **From James Cook University**

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## List of Abbreviations

μL	Micro litre
°C	Degrees Celsius
AIDS	Acquired Immunodeficiency Syndrome
BMI	Body Mass Index
CHC	Community Health Centre
CSDH	Commission on Social Determinants of Health
DALYs	Disability-adjusted life years
DEC	Diethylcarbamazine
G	Gram
GAS	Group A Streptococci
GI	Gastrointestinal Illness
GN	Glomerulonephritis
GNP	Gross National Product
GPELF	Global Programme to Eliminate Lymphatic Filariasis
Hb	Haemoglobin
HIV	Human Immunodeficiency Virus
HSS	Health System Strengthening
ICT	Immunochromatography Card Test
JCU	James Cook University
L	Litre
LF	Lymphatic Filariasis
MDA	Mass Drug Administration
MDG	Millennium Development Goals
Mg	Milligrams
mL	Millilitre
MoH	Ministry of Health

N	Sample size
NGO	Non-Governmental Organization
NTD	Neglected Tropical Diseases
NZ	New Zealand
PacELF	Pacific Programme to Eliminate Lymphatic Filariasis
PICTs	Pacific Island Countries and Territories
PNG	Papua New Guinea
ppKM <sup>2</sup>	Persons per Square Metre
PSD	Parasitic Skin Diseases
PSGN	Post-streptococcal Glomerulonephritis
RHD	Rheumatic Heart Disease
RHF	Rheumatic Heart Fever
RR	Relative Risk
SAF	Sodium Acetate Formaldehyde
SD	Standard Deviation
SDH	Social Determinants of Health
SPHTMRS	School of Public Health, Tropical Medicine and Rehabilitation Sciences
STH	Soil Transmitted Helminths
TB	Tuberculosis
TTF	Tuvalu Trust Fund
WHO	World Health Organization

## **Abstract**

### **The Prevalence and Impact of the Co-morbidity of Skin Infections and Other Neglected Tropical Diseases in the Asia- Pacific Region**

Many people living in tropical settings in the developing world are burdened with neglected infectious diseases which remain unaddressed by the health sector. This study conducted baseline and follow-up surveys on a cohort of 900 children of Tuvalu to determine the prevalence and scope of skin infections and intestinal parasites; as well as cross-sectional survey of multiple sites in Timor-Leste.

Results indicated a high prevalence of infectious disease, especially skin infections in both countries with many participants presenting with multiple infections. Scabies and scabies co-infection with secondary bacterial or fungal diseases were the most common presentations in both populations. Intestinal parasites were present in 67% of the children surveyed in Tuvalu where one third of this cohort also had anaemia and abnormal urine results.

Overall these communities show a high burden of co-morbidity, the impact of which is unknown. However, the high proportion of multiple infectious diseases along with the clinical evidence suggests a negative health impact on these populations, which could benefit from multiple interventions in an integrated community-bases disease control programme.

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