



## Parental knowledge and attitudes to childhood hearing loss and hearing services in the Solomon Islands



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### ABSTRACT

**Objective:** An understanding of parental knowledge and attitudes towards childhood hearing loss is essential to the successful implementation of audiology services. The present study aimed to investigate parental knowledge and attitudes among parents in the Solomon Islands.

**Methods and materials:** A total of 100 mothers and 50 fathers were administered a questionnaire via semi-structured interviews.

**Results:** Highest parental awareness of aetiology of childhood hearing loss was noted for otitis media (94%), noise exposure (87.3%), and family history (72.7%). The highest parental awareness concerning public health initiatives to reduce/prevent otitis media was noted for routine childhood immunizations (84%) and breast-feeding (76%). Higher rates of knowledge in fathers than in mothers included otitis media ( $p = 0.038$ ), noise exposure ( $p = 0.007$ ), and breast-feeding ( $p = 0.031$ ). Approximately half of parents (56%) agreed that curses may cause hearing loss. Overall parental responses showed positive support for infant hearing screening programs (96%) and school-based ear and hearing health examinations (99.3%).

**Conclusions:** High levels of parental readiness and support for childhood hearing services in the Solomon Islands was evident. Knowledge of aetiology of childhood hearing loss was highest for otitis media, noise exposure, and family history. Knowledge and attitudes of fathers to childhood hearing loss and hearing services was either the same or better than that of mothers.

### 1. Introduction

The successful implementation of audiology services in developing countries depends on community support and acceptance of hearing healthcare programs [1]. An appreciation of parental knowledge and attitudes towards childhood hearing loss and hearing services is essential to the development of relevant and contextually appropriate audiology programs for children. While negative attitudes may persist in some developing countries towards people with a hearing disability [2], there is also evidence that parents are generally very supportive of early identification and intervention services for infants and children with sensorineural hearing loss [3–6]. Early hearing detection programs are usually based on a biomedical model of health care, however, the development of paediatric audiology initiatives should also consider non-biomedical beliefs regarding childhood hearing impairment, as these may influence parental hearing health-care and health-seeking

behaviour [7–9].

Audiology services are limited or non-existent in the Pacific Islands [10]. Yet, the World Health Organisation estimates that this region has among the highest global burden of hearing loss worldwide [11]. Among children, in particular, a significant proportion of hearing loss is due to avoidable causes such as otitis media (OM) and infectious diseases that may be prevented through immunizations [12]. The Oceania region is reported to have the second highest overall prevalence of hearing impairment caused by OM worldwide (51.23 per ten thousand), as well as the second highest rate of OM-related hearing loss for children 5 years and younger (3.02 per thousand) [13]. It is also estimated that this region has the highest incidence of Chronic Suppurative Otitis Media (CSOM) in the first year of life (35.96 per thousand), and the world's highest mortality rate due to complications of CSOM (101.1 deaths each year per 10 million) [13].

In view of the current status of childhood hearing loss in the Pacific

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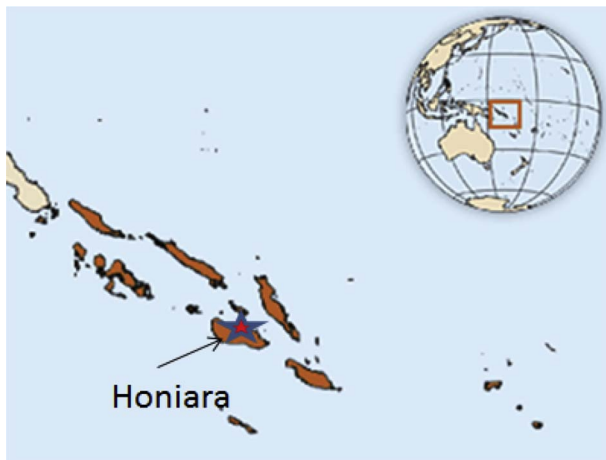


Fig. 1. Map of the Solomon Islands.

Islands, a public health approach is recommended for the implementation of paediatric audiology services [14]. The avoidable causes of childhood hearing loss could be addressed through existing public and primary healthcare frameworks. The integration of audiology services into World Health Organisation (WHO) and United Nations Children's Emergency Fund (UNICEF) initiatives for children could promote greater population coverage and community acceptance of new hearing health programs (i.e., WHO Global School Health Program, UNICEF Expanded Program on Immunization). A close collaboration with the local Ear Nose and Throat (ENT) Clinic is also desirable to address the urgent public health threat of OM and its complications [15].

A pilot project is currently underway to investigate the integration of paediatric audiology services at the ENT Clinic of the National Referral Hospital in the Solomon Islands, a developing nation of the Pacific Island region (See Fig. 1. Map of the Solomon Islands; Table 1. Solomon Islands Country Profile). Most healthcare services are provided free of charge under the Solomon Islands Ministry of Health and Medical Services, and the World Health Organisation and UNICEF are actively working with the national government to improve child health and development, as well as services for children with a disability [16–18]. There is currently no published evidence on community attitudes towards childhood hearing impairment in the Pacific Islands. However, earlier studies by medical anthropologists in Papua New Guinea (PNG) suggest that biomedical health care services may co-exist and be well-accepted by communities within the local framework of non-biomedical beliefs [19–21].

In order to optimize the success of the evolving audiology service in the Solomon Islands, the present study was conducted to investigate parental knowledge and attitudes towards childhood hearing loss and hearing services. This study differs from the four similar studies from developing countries by (1) addressing conductive as well as sensorineural hearing loss, (2) investigating hearing services for school-age children as well as infants, and (3) including fathers as well as mothers in the study sample [3–6]. The inclusion of fathers in the present study acknowledges the significant and active role of men in the healthcare of their children in many Pacific Islands nations.

Study findings will be used to develop health promotion activities aimed at reducing the preventable causes of hearing loss, which should further contribute to improvements in maternal and child public health as advocated by the United Nations ratified Sustainable Development Goals [22]. Given the limited information on childhood hearing loss from the Pacific Islands, this study will also serve other ear and hearing health programs in the Pacific region.

**Table 1**  
Solomon Islands country profile.

(Source: Adapted from CIA World Factbook [www.indexmundi.com/solomon\\_islands/demographics\\_profile.html](http://www.indexmundi.com/solomon_islands/demographics_profile.html).)

Solomon Islands country profile	
Capital City	Honiara
Population (July 2016 estimate)	Country total: 635,027 (Honiara: 73,000 (2014))
Age Structure (2016 estimate)	0-14 years: 35.13% 15-24 years: 20.01% 25-54 years: 36.12% 55-64 years: 4.55% 65 years and older: 4.2%
Median Age (2016 estimate)	Total: 22.2 years Male: 22 years Female: 22.4 years
Urbanization (2015)	Urban population = 22.3% of total population
Mother's mean age at first birth	21.6 years
Total fertility rate (2016 estimate)	3.22 children born/woman
Ethnic groups (2009 estimate)	Melanesian (95.3%), Polynesian (3.1%), Micronesian (1.2%), Other (0.3%)
Languages	Solomon Pijin (lingua franca), English (official but only spoken by 1–2% of the population), 120 local languages
Literacy (2009 estimate)	Definition: Age 15 years and older, and can read and write Total population: 84.1% Male: 88.9% Female: 79.2%
School Life Expectancy (primary to tertiary education) (2007)	Total: 9 years Male: 10 years Female: 9 years

## 2. Method

### 2.1. Ethical approval

Ethical approval for the study was obtained from the National Health Research & Ethics Committee of the Solomon Islands Ministry of Health and Medical Services, and the University of Queensland Medical Research Ethics Committee. Gatekeeper approval for the study was also obtained from the Honiara City Council (Public Health Services), Solomon Islands.

### 2.2. Participants

A face-to-face interview was conducted with 153 parents (102 mothers, 51 fathers) attending Child Welfare Clinics (CWCs) and community Outpatient Departments (OPDs) in the capital city Honiara, conveniently sampled during November 2016 to February 2017. This population was chosen as the children of these parents will be the primary recipients of the emerging community-based childhood ear and hearing programs. The WHO reports the national immunization coverage rate for first dose Diphtheria-Tetanus-Pertussis (DTP) to be 93.99% (administered at CWCs at 6 weeks of age), suggesting that our study participants are a representative sample of parents in Honiara [23].

Three largest community clinics were approached for participation in this study (Mataniko, Kukum, and Naha). All participants were required to be 18 years or older to avoid difficulty in obtaining informed consent for minors; the national average of mother's age at first birth is 21.6 years (See Table 1. Solomon Islands Country Profile), and we noted that all women attending the clinics on the days of data collection were over 18 years of age. Parental education level data were not collected out of concerns of cultural sensitivity, however, national school life expectancy is similar for both males and females (See

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