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Quality and readability of information pamphlets on hearing and paediatric hearing loss in the Gauteng Province, South Africa

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ABSTRACT

Objectives: The implementation of early hearing detection and intervention (EHDI) programmes is necessary in order to facilitate the early identification of hearing loss. An important component of EHDI is parental education. International and national guidelines stipulating that comprehensive, unbiased and appropriate information pamphlets should be provided to parents as part of EHDI programmes, however little is known about the availability and readability of such materials in South Africa. The objectives of this study were therefore to determine the availability of information pamphlets on hearing and hearing loss in children at public hospitals in the Gauteng Province of South Africa. In addition, the quality and readability levels of these pamphlets were determined.

Methods: A non-experimental, descriptive research design was employed for this study. Information on the availability of leaflets at public health hospitals was obtained through a telephonic survey. Twenty-one information pamphlets available at these hospitals were then evaluated to determine the quality and readability levels.

Results: It was found that 73% of audiology departments at public hospitals in Gauteng had information pamphlets available on hearing and hearing loss in children. Of the pamphlets evaluated, the majority were rated to 'present with serious problems' questioning the quality of the content included. In addition, it was found that on average the readability level of these pamphlets were at a sixth-grade level, much higher that the recommended fourth-grade reading level.

Conclusions: The need for development of quality educational material focused on providing parents with unbiased, comprehensive and appropriate information on hearing and hearing loss in children has been highlighted. Proposed guidelines were recommended to assist audiologists in this endeavour. The importance of providing appropriate parental educational materials for the success of EHDI in South Africa should not be underestimated.

1. Introduction

Functional health literacy (FHL) can be defined as the capability to read, comprehend and execute medical information [1]. It is estimated that 16% of the world's adult population lack basic literacy skills [2]. Literacy levels in South Africa, a developing country, are low as it has been found that one in every six (40%) South Africans are functionally illiterate [3]. The high rate of illiteracy amongst South Africans is devastating as literacy is a vital component when accessing medical information. It is argued that there is a connection between low FHL and poor health outcomes as individuals with lower FHL are 1.5–3 times more likely to have poor health outcomes when compared to individuals with higher FHL [4]. Although basic literacy is essential for health literacy, it is not the only aspect that contributes to understanding. It is postulated that an individual can be literate when in a familiar context and location but functionally 'illiterate' when they are required to understand and reply to unfamiliar jargon and expressions in an unfamiliar setting. For many individuals the healthcare environment is unfamiliar mostly due to their limited exposure to medical terminology and jargon. This is also true for parents of infants and children with hearing loss.

Hearing loss is the most common birth defect in newborns. Approximately 32 million children below the age of 15 years have a hearing loss [5]. Each year a total of 718 000 infants worldwide are born with or acquire a bilateral permanent hearing loss [6]. It is estimated that each day 16–17 babies are born with some degree of hearing loss in South Africa [7].

Traditionally, infant hearing loss is identified by caregivers, when the caregiver express concerns regarding speech and

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language delays which usually arise after 2 years of age. It is well-known that early identification of hearing loss is vital in order to guarantee optimal results for infants with hearing loss. Early identification of hearing loss can be facilitated by the implementation of early hearing detection and intervention (EHDI) programmes.

One of the most important aspects of a successful EHDI programme is parental education [8]. Audiologists plays a vital role in educating caregivers on hearing related issues, as well as relaying complex information to caregivers that have minimum literacy levels or are unable to comprehend printed information. A recent study reported that 74% of South African audiologists surveyed believed that the most important issue in the late diagnosis of hearing loss in children is the lack of parental knowledge [9]. Parental awareness and understanding of EHDI will have a lasting outcome on their child. Parents of infants and children with hearing loss have expressed the desire to be informed about hearing screening prior to the screening as well as the urgency of follow-up [10]. Despite this many parents, especially within the public health care sector of South Africa, are left to educate themselves regarding hearing and hearing loss. Gauteng is the most densely populated province in South Africa, as more than 20% of the country's total population reside there. There is only 33 public hospitals in Gauteng servicing 86% of the province's residents [11]. As audiological services at these public hospitals are limited other avenues, such as the distribution of information pamphlets at hospitals and clinics should be used to promote EHDI.

Parents of infants and children with hearing loss have acknowledged shortfalls concerning the availability of printed educational materials explaining EHDI [10]. It is important for audiologists to educate parents and/or caregivers appropriately in order to assist them in comprehending printed information and improving the health state of their child. By ignoring linguistic and literacy variances, audiologists may be violating the human rights of these individuals and their families. To date there is limited information on the availability and quality of information pamphlets provided to South African parents and/or caregivers of children with hearing loss. The study therefore aimed to (i) determine the availability of information pamphlets on hearing and hearing loss in children at public sector hospitals in Gauteng; (ii) calculate the readability level of the information pamphlets on hearing and hearing loss in children; and (iii) evaluate the quality of the information pamphlets (i.e. content and structure) on hearing and hearing loss in children.

2. Methods

2.1. Participants

All public health hospitals in Gauteng that offer that audiological services ($n = 31$) were contacted. A telephonic survey was conducted with audiologists to determine the availability of information pamphlets on hearing and hearing loss in these departments. Of these departments, five were excluded due to either vacant posts, not being reachable or departments did not offer paediatric services. The hospital participant group (N_1) therefore consisted of 26 public health sector hospitals.

Information pamphlets (N_2) were then collected from all the public health audiology departments that agreed to participate in the study. Fifty eight information pamphlets were collected from hospitals, but as a number of pamphlets provided were identical, only 21 information pamphlets were included in the study. These pamphlets were all written in English and contained information regarding hearing and hearing loss in children.

2.2. Materials

The information pamphlets were then analysed using the Simple Measure of Gobbledegook (SMOG) [12] and the Ensuring Quality Information for Patients (EQIP) [13].

The SMOG readability formula is simple, accurate and widely used in determining reading levels of health information materials [14]. A score of between 3 and 8 indicates that the printed text is suitable for individuals who have completed primary school. Scores between 9 and 12 indicate suitability for individuals who have completed high school and tertiary education is required to comprehend SMOG scores of 13 and above. To calculate the score the number of words containing three or more syllables and a total of 30 sentences is used. Ten sequential sentences from the beginning, 10 sentences in the middle and 10 sentences close to the end of the pamphlet are selected. A sentence is defined as a string of words punctuated with a period, exclamation point, or question mark.

The EQIP evaluates the quality of printed information material [13]. This 20-item questionnaire consists of three categories of analysis, namely content, structure and identification (see Table 1).

Every question on the EQIP is rated on a four point rating scale ('yes', 'partly', 'no', 'does not apply'). The total overall score is then calculated and averaged in order to produce a quality score and recommendations (see Table 2).

Table 1
EQIP: description of categories.

Category	Description
Content analysis	This section provides information regarding the relevance, level of detail and any missing information from the leaflets. Evaluates whether the information pamphlets includes the following information: description of hearing and hearing related matters, appropriate treatment plan and the consequences of hearing difficulties.
Structure analysis	Evaluates whether the information within the pamphlets is evidence-based, logical and appropriate for the targeted audience, frequently updated, categorised, contain illustrations and a reference list.
Identification analysis	This section provides information regarding the identification of the pamphlets and evaluates the publication date of the leaflets, logo and the name of the sponsors.

Table 2
EQIP quality scores.

Rating	Score range in percentage	Recommendations
High quality	75–100%	Continue to provide the pamphlet however review the pamphlet in 2–3 years.
Good quality	50–74%	Continue to provide the pamphlet however review the pamphlet in 1–2 years.
Some serious problems	25–49%	Begin the review process now and replace the pamphlets within 6–12 months (from the evaluation).
Severe problems	0–24%	Remove the pamphlet from circulation immediately.