

### 3 THE PREVENTION OF COMMUNICATION DISORDERS

The aim of the chapter is to provide an overview of the prevention of communication disorders in infants. International trends in the prevention of communication disorders and the identification of factors which may influence the risk for and resilience against developing communication disorders are related to the South African context. The influence of legislation on the prevention of communication disorders is discussed and the need for family-centred, culturally sensitive prevention programmes which address the unique needs of the range of South African communities is emphasised. Finally this chapter highlights the value of education as a primary prevention strategy.

#### 3.1 INTRODUCTION

A review of current literature and research findings orientates the researcher to trends within the field and relating areas of expertise, providing a backdrop from which the need for further research is highlighted (Mouton & Marais, 1990). A review of current literature in the prevention of disorders highlights the high prevalence of communication disorders and the need to prevent a larger proportion of communication disorders (Rossetti, 1996; Gerber, 1998).

It has been estimated internationally that approximately 5% to 10 % of children under three have a communication disorder (Rossetti, 1996; Fox, Dodd & Howard, 2002). Furthermore advances in technology, which saves the lives of infants who would otherwise not have survived, are resulting in an increasing prevalence of severe disorders (Gerber, 1998; Plante, 1999). Infants in South Africa are environmentally and biologically at an even greater risk for communication disorders (Kritzinger *et al.*, 1995). Factors relating to political, cultural, social, economic, linguistic and environmental conditions increase the risk for communication delays in South African children (Pickering *et al.*, 1998). In comparison to international figures, infants and children within certain South African communities may be at an increased risk for communication delays. Due to the higher prevalence in South African communities of

risk conditions such as fetal alcohol syndrome (Viljoen, 1999) and poverty (Ebersöhn & Eloff, 2002), which are associated with an increased risk for communication disorders, it is to be expected that South African communities will have a higher prevalence of communication disorders than more developed countries.

This has serious consequences when considered in the light of research which indicates the far-reaching effects of communication disorders for all areas of development including social, emotional, cognitive and literacy development, future academic success and vocational functioning (Lindsay *et al.*, 2002; Hess *et al.*, 1997; Lewis *et al.*, 2000; Lockwood, 1994; Scarborough, 1990; Snowling *et al.*, 2001). The relatively high proportion of communication disorders in South Africa consequently indicates the need for more rehabilitative services to be provided to individuals. Furthermore, communication disorders may result in poorer economic and vocational performance of the affected individuals in the future, resulting in an economic strain on the country (Rossetti, 1996; Billeaud, 1998).

Many communication disorders can, however, be prevented and the role of speech-language therapists in the prevention of communication disorders has been highlighted during the previous decade (ASHA, 1991). Speech-language therapists have been called to become involved in prevention efforts such as public awareness programmes (ASHA, 1991). Many more prevention efforts are required in order to prevent communication disorders and speech-language therapists have an obligation to become involved in primary, secondary and tertiary prevention efforts (Gerber, 1998; Molteno & Lachman, 1996).

Research has indicated that 16% of learning disabilities in South Africa could have been prevented with the use of current practice and existing knowledge (Molteno & Lachman, 1996). The use of early intervention as a means of secondary prevention could also limit the effects of communication disorders, resulting in normal school performance for children who previously had communication disorders (Snowling *et al.*, 2001).

Against this background the importance of preventing as many communication disorders as possible becomes increasingly apparent. Besides the evident need to be

involved in the prevention of communication disorders there are also too few speech-language therapists in South Africa to provide the necessary rehabilitative services required by the large number of people with communication disorders. It was predicted in the nineties that there would be a shortage of approximately 5000 speech-language therapists by the year 2000 (Uys, 1993). It has been estimated that 3,8 million people in South Africa require communication intervention. There is, however, only one speech-language therapist for every 8000 people requiring intervention (Pickering, *et al.*, 1998). This highlights the need for prevention programmes which will result in a reduction in the number of individuals requiring speech-language therapy in South Africa. There is, therefore, an urgent need for a shift in attention from a focus on tertiary prevention programmes, which attempts to reduce the effects of a disorder by restoring effective functioning, to an increasing involvement in primary and secondary prevention programmes, which focuses on the complete avoidance of disorders or the early detection and rehabilitation thereof (Gerber, 1998).

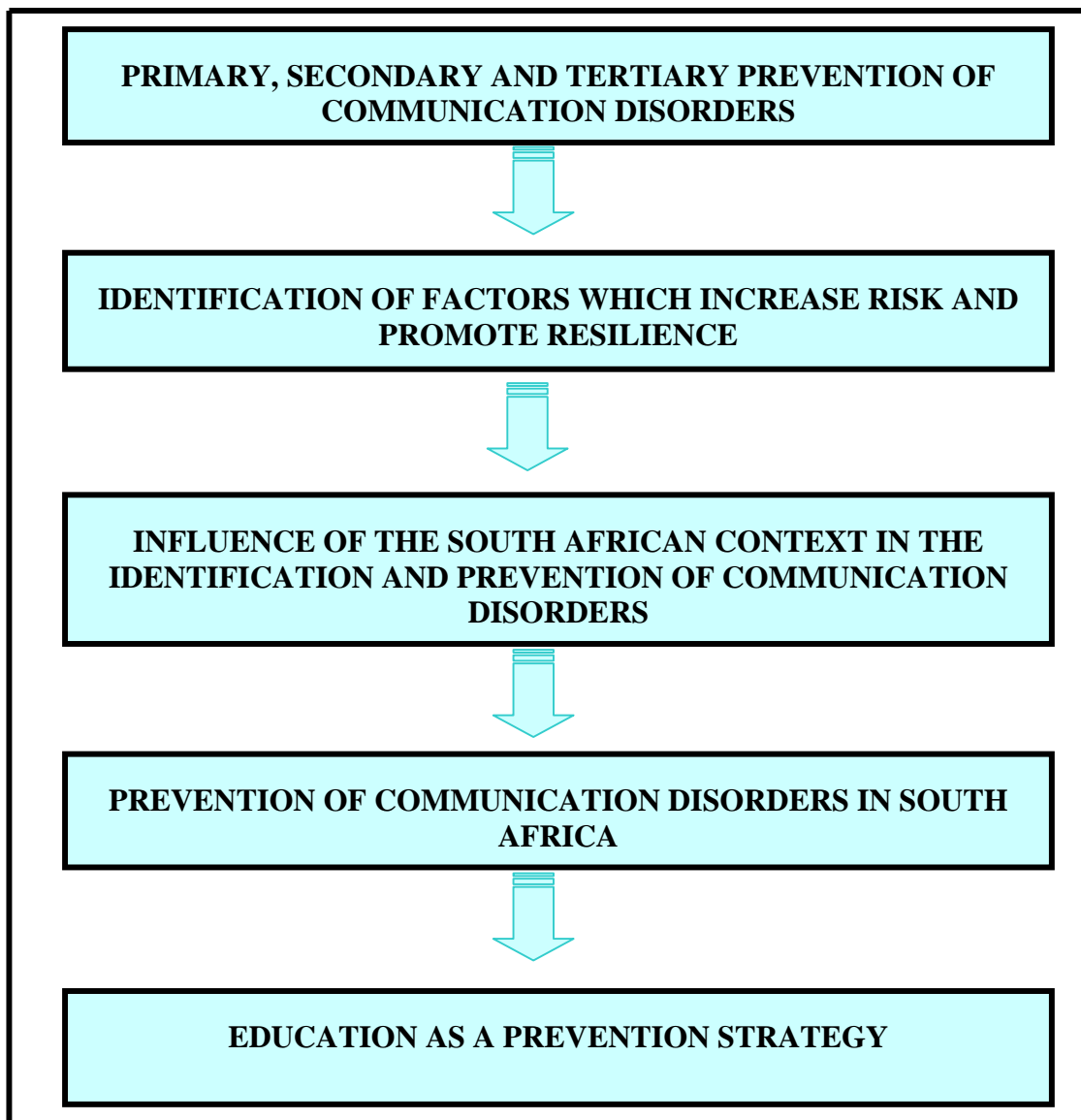
Prevention does not, however, occur in isolation. In order for professionals to prevent the occurrence of a communication disorder the causes of the disorder first need to be identified (Kritzinger, 2000). Knowledge about the risk factors which contribute to the emergence of the communication disorder as well as knowledge about factors which increase resilience from developing disorders is required (Rossetti, 2001; Werner, 2000).

Universal trends in prevention reflect a recent tendency to identify risk factors which may result in a disorder, as well as factors which may protect from risk, resulting in an increase in resilience to disorders (Gilligan, 2001; Dworkin, 2000; Wissing & van Eeden, 2002). This shift in focus has implications for the prevention of communication disorders. Focusing on resilience and the promotion of normal development will result in adaptations to the more traditional approach to the primary prevention of communication disorders which has, in the past, focused primarily on the identification of risk factors.

The discussion above highlights the need for the identification of factors which influence risk and resilience. Furthermore, the need for the establishment of

prevention programmes which focus on the primary and secondary prevention of communication disorders in order to facilitate optimal communication development in the early years becomes apparent. It is, however, also imperative that professionals who aim to prevent communication disorders acknowledge that different risks may be associated with different communities and the success of prevention efforts will be related to the ability to identify and meet risks within specific communities.

Topics which are addressed in this chapter are schematically presented in Figure 3.1.



**Figure 3.1 A schematic presentation of the prevention of communication disorders**

## **3.2 THE PREVENTION OF COMMUNICATION DISORDERS**

The prevention of communication disorders is seen as a crucial component of early communication intervention (referred to as ECI) (Kritzinger, 2000). A consideration of best practices in ECI highlights the important role of professionals in the prevention of conditions which contribute to communication disorders by promoting health and normal communication development in the general public through community education (Kritzinger, 2000).

### **3.2.1 Trends in the Prevention of Communication Disorders**

According to ASHA (1991) prevention is one of the primary roles of speech-language therapists and encompasses not only the application of prevention strategies but also the need for research on the prevention of communication disorders (ASHA, 1991). Prevention efforts have been found to be effective in reducing the prevalence of communication disorders such as hearing losses which are caused by pre-natal rubella exposure, and prevention is also more cost-effective when compared to the alternative costs of rehabilitation (Gerber, 1998; Hussey, Lasser & Reekie, 1995). Since the early 1970's there has been increasing legislative support in the U.S.A. for preventative initiatives, including the promotion of health, the protection of health and the provision of preventative health services (Gerber, 1998). Many of these initiatives have also had positive effects on the prevalence of communication disorders.

Although there is currently some controversy surrounding the use of vaccinations and many parents are choosing not to vaccinate owing to the apparent low incidence of these illnesses and the possibility of adverse effects from the immunisations (McTaggart, 2001), the use of the rubella vaccination has effectively reduced the transmission of the rubella virus to unborn infants, thereby reducing the occurrence of resulting fetal death, congenital heart defects, mental illness, deafness and cataracts (WHO, 2002).

Another method with proven effectiveness with regard to preventing communication disorders is the use of infant hearing screening. Legislation in the U.S.A. supports the provision of infant hearing screening for *all infants* within the first few months (Joint

Committee on Infant Hearing, 2000). There is currently no legislation in South Africa but the notion of providing newborn hearing screening is supported. A recent position statement (HPCSA: Professional Board for Speech, Language and Hearing Professions, 2002a) supports the use of infant hearing screening for the early identification of hearing impairments with the aim of providing appropriate intervention in order to maximise communicative competence and development (HPCSA: Professional Board for Speech, Language and Hearing Professions, 2002a). The current focus is on putting strategies in place for the screening of at-risk infants and it may be some time before legislation is tabled in South Africa regarding the screening of all infants.

Despite the lack of supportive legislation the Professional Board for Speech, Language and Hearing Professionals (HPCSA) has, however, advocated the involvement of professionals in the early detection of and intervention for infants with hearing impairments in order to minimise the adverse effects of hearing disorders on communication development (HPCSA: Professional Board for Speech, Language and Hearing Professions 2002a). The function of early identification and intervention, which aims to minimise adverse effects, can also be described as secondary prevention (Gerber, 1998).

And yet, in spite of the call for speech-language therapists to be involved in preventative efforts, international legislative support of such programmes and the track record of implemented programmes, this role has frequently been neglected or regarded as a secondary function by many speech-language therapists (Gerber, 1998; Kritzinger, 2000; Hugo, 1998). In the past, speech-language therapists have overlooked this role and have focused on one-to-one specialised service provision (Hugo, 1998). This uneven provision of services may have been the result of limited professional training regarding prevention services as well as an emphasis on secondary and tertiary prevention efforts (Gerber, 1998).

However, recent trends in service provision indicate a greater emphasis on the roles of speech-language therapists and audiologists in aspects such as prevention, education and consultation (Hugo, 1998). Inherent in this trend is not only the need to identify and prevent the occurrence of diseases which are linked to communication disorders,

but also the need for an increasing focus on the promotion of wellness within communities (Gerber, 1998; Billeaud, 1998).

### 3.2.2 Defining Primary, Secondary and Tertiary Prevention

Prevention efforts can be viewed as occurring on three levels, namely: primary, secondary and tertiary prevention (Gerber, 1998). Primary prevention includes the *prevention of diseases* and the *promotion of health* (Gerber, 1998). Communication based primary prevention programmes arrest or hinder the onset and development of a communication disorder by changing susceptibility or reducing exposure of susceptible persons to risk factors (ASHA, 1991). These programmes aim to prevent the communication development delay from occurring altogether by focusing on the prevention of a disorder (Gerber, 1998). Examples of primary prevention programmes are for example the use of the rubella vaccination to prevent deafness (WHO, 2002) or the promotion of literacy skills in communities who would, otherwise, have been at risk for the development of reading and writing disorders and delays (High *et al.*, 2000). The value of successful primary prevention programmes lies therein that the need for secondary and tertiary prevention is completely eliminated resulting in a decrease in the loss of human potential and affliction that results from communication disorders (Gerber, 1998).

However, not all diseases can be prevented but the effects of the disorder can be minimised through effective secondary prevention efforts (Rossetti, 2001). For example expectant parents may choose not to terminate a fetus with Down syndrome and the implementation of early intervention may promote better development and limit the effects of the disorder.

The provision of secondary prevention includes a focus on the *early detection of impairments and disorders* and the provision of *early communication intervention* (ASHA, 1991; Gerber, 1998). Early detection and treatment may eliminate the disorder completely, slow its progress or minimise the consequences thereof (ASHA, 1991; Gerber, 1998). Examples of secondary prevention include the use of screening tests to detect hearing disorders and the subsequent provision of hearing aids or cochlear implants and early communicative intervention to reduce the effects of the

disability on development, resulting in improved communication development and subsequent academic achievements (Gerber, 1998; Ertmer & Mellon, 2001). In the case of a severely hearing impaired child who would otherwise probably not have developed speech, the provision of cochlear implants and early communication intervention allowed the child to progress to the use of two-word sentences with an expressive vocabulary of 90 words after one year of implant use (Ertmer & Mellon, 2001). This case study clearly highlights the value of secondary prevention efforts to society.

The provision of tertiary prevention is concerned with *reducing the disability* by restoring effective functioning (ASHA, 1991). An example of tertiary prevention would be the continued provision of speech-language therapy to a school-aged hearing impaired child with the aim of reducing the effect of the hearing loss on the child's communication development (ASHA, 1991). These services cannot be discounted as they are clearly also of value to society.

Traditionally the focus of intervention was on tertiary prevention. However, the development of ECI in the 1970's brought about an increased awareness of the value and effectiveness of secondary prevention (Rossetti, 1996). Currently the international trend is towards the primary prevention of disorders (Gerber, 1998). The focus in primary prevention is not on the provision of remedial services but rather on addressing problems which have not yet transpired or that do not yet significantly endanger family welfare (Gerber, 1998).

Communication disorders not only affect children but have far-reaching effects on the entire family and community (Rossetti, 2001; Baxter & Kahn, 1999). Besides the value of and need for secondary and tertiary prevention strategies, the need for effective primary prevention strategies remains a priority. Research in the U.S.A. has indicated that the prevention of disorders is more cost-effective than the treatment thereof (Gerber, 1998). The primary prevention of communication disorders is therefore important to the profession, to communities, to families and to individuals who are at risk for communication disorders.



The effectiveness of prevention efforts are, however, influenced by the causal factors thereof (Naudé *et al.*, 1999). The identification of risk factors is the entry point to ECI service provision (Kritzinger, 2000). Prevention programmes target specific risk factors in order to reduce the incidence and prevalence thereof (Gerber, 1998). It is consequently not possible to implement effective communication-related primary prevention measures without *identifying* the factors which increase the population's risk for communication delays. In order to fulfil their role in the prevention of disorders it is important for professionals to be knowledgeable regarding screening and diagnostic procedures which are used to identify potential communication disorders (Louw & Kritzinger, 1998).

### **3.3 THE IDENTIFICATION OF COMMUNICATION DISORDERS**

The early identification of infants who are at risk for communication disorders enhances the efficacy of ECI service provision (Kritzinger, 2000). *“The importance of early identification of communication disorders is based on the assumptions that the successful treatment of all communication disorders depends on early detection and treatment of the disorder or risk factor leading to a delay”* (Kritzinger, 2000 p. 43). The development of accurate and economical means of identifying communication disorders in children is, therefore, an important goal for speech-language therapists (Klee, Pearce & Carson, 2000). *“The early identification of infants with communication disorders or at risk for communication delays is still one of the biggest challenges of ECI and threatens to compromise its efficacy”* (Kritzinger, Louw & Rossetti, 2001 p. 33).

#### **3.3.1 Methods for the Identification of Communication Disorders**

Depending on the target population there are different methods which can be used to identify communication disorders and risk factors which are related to the emergence of communication disorders. These methods are displayed in Table 3.1.

**Table 3.1 Methods for identifying communication disorders and risk factors**

Method	Description & Reference	Outcome
Epidemiological data.	Used to study trends within populations (WHO, 2003; WHO 1996; Delpont, Christianson, van den Berg, Wolmarans & Gericke, 1995).	Identifies trends within communities resulting in the identification of an increased prevalence of certain risk conditions within specific communities, therefore highlighting the need for further screening to be done.
The statistical analysis of trends.	Used to determine the correlation between different risk factors which influence communication development (Hooper, Burchinal, Roberts, Zeisel & Neebe, 1998; Fox <i>et al.</i> , 2002).	Identifies risk factors as well as the cumulative effect of different risk factors for communication disorders.
The identification of infants with established risk conditions.	The use of pre- and post-natal screening tools such as computer tomography (CT scans), magnetic resonance imaging, ultrasonography, x-rays, enzyme or hormone assays or tissue biopsy which determine the presence of established risks (Kritzinger, 2000; Gerber, 1998).	Identifies established risk conditions such as Down Syndrome, with the aim of making a diagnosis. Diagnosis done by a medical professional.
Developmental screening.	The use of screening tools such as high risk registers or infant hearing screening in order to determine the likelihood of a child developing a communication disorder (Kritzinger <i>et al.</i> , 1995; Professional Board for Speech, Language and Hearing Professions 2002).	Identifies children who are at risk for communication disorders or delays but implies the referral of identified individuals for further testing before a diagnosis of a disorder is made.
Developmental surveillance.	The use of developmental screening tools which monitor infant development over time, including: <ul style="list-style-type: none"> <li>• Screening tools which rely on direct interaction between the child and a professional (Justice, Invernizzi &amp; Meier, 2002; Stott, Merricks, Bolton &amp; Goodyer, 2002; Moodley, Louw &amp; Hugo, 2000).</li> <li>• Screening tools which rely on parent or adult feedback (Durkin, Zaman, Thorburn, Hasan &amp; Davidson, 1991; Banigan, 1998).</li> <li>• Screening tools which combine direct professional-child interaction with feedback from parents or other adults (Klee <i>et al.</i>, 2000).</li> </ul>	Monitors developmental status, revealing children who may have a communication disorder, and identifying parent and adult concerns, thereby enabling the professional to decide whether further in-depth testing is necessary. The use of communication-based screening instruments with high sensitivity and specificity are crucial to the early identification of developmental disorders such as autism or pervasive developmental disorders (Kritzinger, 2000).

From Table 3.1 it becomes clear that the selection of the appropriate identification method should depend on the target population (Squires, Nickel & Eisert, 1996). Different screening instruments and strategies are utilised with different age groups (Kritzinger, 2000). If, for example, the aim is the identification and prevention of communication disorders in newborn infants then the most appropriate methods would be the identification of established risk factors or the use of developmental screening methods such as high-risk registers or infant hearing screening.

Developmental screening methods are, however, not all equally effective in achieving the same goals. High risk registers are not effective at identifying all hearing losses, resulting in many hearing losses, especially those of unknown origin, not being identified (Kritzinger, 2000). Infant hearing screening before three months is the ideal procedure in order to ensure that the majority of hearing disorders are detected early (HPCSA: Professional Board for Speech, Language and Hearing Professions 2002a).

Regardless of the specific instrument selected, the identification procedure should provide high levels of *sensitivity*, namely when the test successfully identifies delays, and *specificity*, namely when the test successfully identifies that there is no delay (Glascoe, 1995). Furthermore, the test used should also be reliable, giving consistent results across examiners (Glascoe, 1995).

Another factor which may influence the decision as to the most applicable identification method is the availability of resources within the community. In a developed area, with access to technology and the financial resources to support such measures, then the use of pre-natal screening may be a viable choice (Gerber, 1998; Louw & Kritzinger, 1998). If, however, it is a developing community with little or no access to specialised services and limited financial resources then the use of high-risk registers will be more viable and cost-effective (Kritzinger *et al.*, 1995). An efficient and cost-effective identification method for older infants may be the use of telephone screening which focuses on the use of parent report to complete developmental surveillance checklists (Banigan, 1998). This would, however, depend upon the availability of telephones in the specific community. Individual resources may, however, also influence the decision to use, or not to use, a specific screening procedure. Even though pre-natal screening methods such as ultrasonography are

usually not funded by the state in developing countries such as South Africa, many individuals opt to have the procedure done at their own cost and professionals should, therefore, be aware of the selective use of these procedures (Louw & Kritzinger, 1998). As it would be unwise to rely on inconsistently used screening methods to identify risks for communication disorders within the broader population, professionals need to aim towards implementing more affordable and more widely used screening measures within developing countries such as South Africa.

Knowledge gleaned from epidemiological data and the statistical analysis of trends within a region should also provide important insights as to important screening procedures to perform in order to rule out the existence of certain risk factors which are prevalent in the specific community. Certain screening instruments are more applicable to certain populations and to certain developmental periods (Kritzinger *et al.*, 2001). The identification of children with communication disorders or those at risk for communication delays is a continuous process as the specific risks for communication disorders change over time (Kritzinger *et al.*, 2001). Knowledge of the continuum of risks across different life periods as well as on the people most likely to be involved in the identification thereof is crucial to the identification of ECI candidates (Kritzinger *et al.*, 2001). A description of established risk factors as well as further factors which place infants at-risk for communication disorders follows.

### **3.3.2 Risk Factors**

Delayed communication development is the most common symptom of developmental delay in children under three years and it is, therefore, crucial to identify and prevent as many of these communication disorders as possible (Rossetti, 1996). Certain communities are more at risk for communication disorders due to the higher prevalence of certain, specific risk factors than other communities (Rossetti, 2001; Delpont *et al.*, 1995). It is important to identify particular risk factors which are prevalent within specific communities as these factors increase the risk for communication disorders and the identification thereof will assist in establishing prevention efforts which target the specific risk factor. Therefore, the identification of prevalent risk factors within specific communities allows professionals to plan appropriate prevention measures.

**.1 Established risk factors**

Decades of research have identified many established risk factors which increase the risk for communication disorders (Rossetti, 2001; Gerber, 1998). Children who fall in the established risk category are expected to display some level of communication delay but the level may vary according to the severity of the disorder (Rossetti, 2001). This extensive knowledge of specific, established risk factors and the impact thereof on communication development highlights the need for screening methods which identify the presence of these risk factors within individuals, allowing for the early identification of ECI candidates and highlighting the need for targeted prevention programmes. The established risk factors for communication disorders are displayed in Table 3.2.

**Table 3.2 Established risk factors for communication disorders**

Established Risk Factor	Source
Chromosomal or genetic disorders such as Trisomy 18, Waardenburg syndrome and Trisomy 21 (Down syndrome).	Keats, 2002; Gerber, 1998; Rossetti, 2001
Neurological disorders such as cerebral palsy, progressive muscular dystrophy and Wilson disease.	Rossetti, 2001
Congenital malformations such as spina bifida, cleft palate and Treacher Collins syndrome.	Gerber, 1998; Rossetti, 2001
Inborn errors in metabolism such as Hunter syndrome, Sly syndrome and Sanfilippo syndrome.	Gerber, 1998; Rossetti, 2001
Sensory disorders such as hearing loss, visual impairment and congenital cataract.	Rossetti, 2001; Kritzinger <i>et al.</i> , 1995
Atypical developmental disorders such as autism and failure to thrive.	Rossetti, 2001
Severe toxic exposure such as Fetal alcohol syndrome, lead/mercury poisoning, fetal exposure to cocaine and exposure to ototoxic drugs.	Chapman, 2000; Gerber, 1998; Rossetti, 2001; Rivers & Hedrick, 1998
Chronic medical illness such as diabetes, cancer and heart problems.	Rossetti, 2001
Severe infectious diseases such as HIV/AIDS, meningitis and rubella.	Gerber, 1998; Rossetti, 2001
Traumatic injury resulting in head or facial injuries.	Gerber, 1998

The established risk factors listed in Table 3.2 are all related to biological aspects which affect development. Knowledge of these risk factors is crucial to the early

identification of individuals who are at risk for communication disorders as all of these risk factors are associated with a reasonable expectation that development will be affected (Rossetti, 2001). In theory most of these factors should be recognised by medical practitioners at an early age and the affected infants would, therefore, be referred for treatment at an early age.

However, despite extensive research identifying established risk factors (as discussed in Rossetti, 2001; Gerber, 1998; Chapman, 2000; Rivers & Hedrick, 1998) and the fact that the early identification of conditions which may disrupt typical communication development is recognised as being important (Billeaud, 1998; Rossetti, 2001), conditions which should have been identified at birth or shortly after are frequently only discovered much later on (Kritzinger *et al.*, 2001). Research indicates that only a small percentage of children with developmental disabilities are identified before three (Kochanek & Buka, 1995). Even in research (Kritzinger, 2000) which looked at trends in a South African early intervention centre, where the majority of children with communication disorders were identified very early, there were still children who could have been identified even earlier had the parents received the necessary information and guidance (Kritzinger, 2000).

Besides the importance of the early identification of risk factors which may negatively impact upon communication development for the effectiveness of service provision, the time lapse between identification and intervention also influences the effectiveness of early communication intervention. Best practice requires that ECI services are provided to families as soon as possible, without a time lapse between the identification of a risk condition and the commencement of treatment (Rossetti, 1996). Professionals should make families aware of available services and resources as soon as possible (Rossetti, 2001). South African research (Kritzinger, 2000) has indicated that many parents may not be aware of the benefits of ECI or the availability of local ECI facilities (Kritzinger, 2000). This may further increase the impact of established risk factors on communication development.

## .2 Factors which place infants at-risk

Besides the established risk factors there are also other factors that place a child at-risk for developmental delays. In contrast to the established risk factors that result in an expected delay in development these factors merely increase the possibility of a delay (Rossetti, 2001). Children in this category are at-risk because certain factors may have interfered with their ability to interact with the environment (Rossetti, 2001).

There are a variety of factors which can indicate that a child may be at-risk for a developmental delay. These risk factors are displayed in Table 3.3.

**Table 3.3 Factors which place children at-risk for communication disorders**

<b>Risk Factor</b>	<b>Source</b>
The expression of serious concerns by caregivers or professionals regarding the child's development, the parenting style or the parent-child interaction.	Rossetti, 2001; Hooper <i>et al.</i> , 1998
The mental health of the primary caregiver.	Klass, 1999; Osofsky & Thompson, 2000; Hooper <i>et al.</i> , 1998
A primary caregiver who suffers from alcohol or drug dependence.	Klass, 1999; Osofsky & Thompson, 2000; MRC, 2000; MRC, 2002
A family or genetic history that indicates a risk for a developmental delay or disorder.	Fox <i>et al.</i> , 2002; Lyytinen, Poikeus, Laakso, Eklund & Lyytinen, 2001
A primary caregiver suffering from an acute or chronic illness.	Rossetti, 2001
The occurrence of an acute family crisis or family stress.	Widerstrom, Mowder & Sandall, 1997; Rossetti, 2001; Klass, 1999
The occurrence of chronically disturbed family interactions, abuse or violence.	Klass, 1999; Osofsky & Thompson, 2000; Sidebotham, Heron, Golding, 2002; Wooster, 1999; Hooper <i>et al.</i> , 1998; Widerstrom <i>et al.</i> , 1997
The occurrence of parent-child separation.	Gilligan, 2001; Rossetti, 2001
A lack of adequate health care.	Rossetti, 2001; Wooster, 1999
A large family with four or more pre-school children or overcrowding in the home.	Rossetti, 2001; Sidebotham <i>et al.</i> , 2002; Hooper <i>et al.</i> , 1998
Low socio-economic status.	Hoffman & Norris, 1994; Garbarino & Ganzel 2000; Sidebotham <i>et al.</i> , 2002; Wooster, 1999; Hooper <i>et al.</i> , 1998; Widerstrom <i>et al.</i> , 1997
Any of the following: a single parent, unemployment of both parents or parental education below 9 <sup>th</sup> grade.	Sidebotham <i>et al.</i> , 2002; Hooper <i>et al.</i> , 1998; Rossetti, 2001; Widerstrom <i>et al.</i> , 1997
A lack of social interaction and support.	Sidebotham <i>et al.</i> , 2002; Gilligan, 2001

**Table 3.3 Continued**

<b>Risk Factor</b>	<b>Source</b>
A lack of stability in the living arrangements.	Rossetti, 2001; Sidebotham, Heron & Golding, 2002
An adolescent mother.	Osofsky & Thompson, 2000
Limited pre-natal care.	Rossetti, 2001
Severe pre- or perinatal complications including preterm delivery.	Fox <i>et al.</i> , 2002; Kritzinger <i>et al.</i> , 1995
Asphyxia or respiratory distress syndrome.	Rossetti, 2001; Kritzinger <i>et al.</i> , 1995
A very low birth weight (<1500g).	Rossetti, 2001; Fox <i>et al.</i> , 2002; Kritzinger <i>et al.</i> , 1995
Growth rates below the 10 <sup>th</sup> percentile for the gestational age.	Rossetti, 2001
Excessive irritability of the infant.	Wooster, 1999; Rossetti, 2001
Recurrent accidents on the part of the infant.	Rossetti, 2001
Chronic otitis media.	Shriberg, Flipsen, Thielke, Kwiatkowski, Kertoy, Katcher, Nellis & Block, 2000; Hugo & Pottas, 1997; Vernon-Feagans, Emanuel & Blood, 1997; Fox <i>et al.</i> , 2002
Oro-motor deficiencies, feeding and vocal problems.	Fox <i>et al.</i> , 2002; Kritzinger <i>et al.</i> , 1995
Gender: certain disorders are linked to gender (such as Duchenne muscular dystrophy which is found only in males), and gender also appears to influence the emergence of developmental language disorders and middle-ear functioning (making males more susceptible).	Gerber, 1998; Karrass <i>et al.</i> , 2002; Felsenfeld, 2002; Kritzinger <i>et al.</i> , 1995
Quality of day-care.	Vernon-Feagans <i>et al.</i> , 1997; Oren & Ruhl, 1997; Flores Hernandez <i>et al.</i> , 1999

The fact that the expression of serious concern by caregivers, is considered a risk factor for communication delays reflects a belief that caregivers are good judges of whether their children are experiencing difficulties and that they are able to accurately describe their children's abilities (Widerstrom et al, 1997). This belief is supported by evaluations which rely on parents to grade and/or record their children's skills (Rossetti, 1990). Research findings (Kritzinger *et al.*, 2001) suggest that parents are frequently the first to identify risk conditions, highlighting the important role that parents play in the early identification of communication disorders. Research (Rescorla & Alley, 2001) has also indicated that parental judgements are highly accurate and the use of parent judgements is as effective as lengthy testing by professionals. Certain communication screening tools rely on parent feedback in order to identify possible developmental delays (Durkin *et al.*, 1991). This is encouraging to developing countries such as South Africa which do not have the financial resources



nor the available professional resources to use screening techniques which require one-on-one interaction between professionals and children.

Many of the risk factors in Table 3.3 reflect social and environmental influences on development. Although many of the social and environmental factors cannot be prevented, an increase in awareness and knowledge will empower parents to realise the possible impact that these factors may have on their child's development. Furthermore, some of the risk factors identified in Table 3.3 are related to biological risks. Consequently professionals need to have knowledge of the prevalence of specific biological factors which may place children at risk for communication disorders within the communities which they serve.

One of the biological risks which may influence communication development is prenatal drug exposure, which has been found to have significant and long-term impacts on the physical and intellectual development of children (Osofsky & Thompson, 2000; Sparks, 1993). There has been a sharp increase in recent years in children who are at-risk for developmental disorders and delays due to prenatal cocaine exposure (Chapman, 2000; Kritzinger, 2000). However many biological risks, including maternal prenatal drug or substance abuse, are preventable and an increase in awareness could play a significant role in reducing the occurrence of these factors. It is therefore important that professionals heed the influence of biological risk factors on communication development in order to prioritise their prevention.

The presence of four or more of any of the before-mentioned risk factors, including environmental or biological factors, together with a parental or professional judgement of delayed development, may be considered an indication of a risk for a substantial delay (Rossetti, 2001). Knowledge of the presence of these risk factors may therefore assist in the identification and prevention of associated communication disorders.

An awareness of risk factors which may negatively impact on communication development requires action. The identification of established and other risk factors which place children at-risk for communication disorders results in the need for comprehensive prevention measures which will effectively address these risks. It is

important to note, however, that not all risk factors are preventable. Risk factors such as hearing losses of unknown origin and excessive irritability of the infant may not, necessarily, be preventable. Furthermore, not all prevention methods are acceptable to all communities. Many parents who are told that they are expecting an infant with Down syndrome decide not to opt for a clinical abortion (Gerber, 1998). Knowledge of these risk factors is, however, important as it highlights the need for developmental screening and developmental surveillance in order to monitor these infants' communication development and ensure the early identification of communication disorders.

Another important consideration is the understanding that not all risk factors are present before or at birth. Each stage of an infant's life may potentially present factors which could negatively impact upon communication development (Rossetti, 2001). An infant who is not identified through screening or developmental surveillance methods in early infancy, is not necessarily exempt from the possibility of a communication disorder. There is a continuum of risk throughout early infancy and the toddler years, resulting in a need for professionals to remain vigilant regarding the identification of risks which may negatively influence communication development (Rubin, 1995; Rossetti, 2001). It is important to consider that *“anything which interferes with a child's ability to interact with the environment in a normal manner is a potential cause of, or contributing factor to, the presence of developmental and, more specifically, communication delay”* (Rossetti, 2001 p. 2).

However, factors such as the presence of a craniofacial disorder, which may initially have been considered a risk factor, may, through the effective provision of information services, later evolve into a strength: namely the availability of resources and support to the family (Jacobs, 2002). Factors such as a parental lack of knowledge and a need for information which may have resulted in stress to the family and the presence of further risks for communication development, can be alleviated by professionals providing the necessary information, resulting in the parents becoming more competent active participants which would act as a positive influence on development, promoting the resilience of the child (Jacobs, 2002).

Consequently, it becomes apparent that there are not only risk factors which influence communication development. Certain factors have a positive influence on development and may make children more resilient to the development of communication disorders (Klass, 1999; Dworkin, 2000; Wissing & van Eeden, 2002; Joseph, 1994; Gilligan, 2001). These factors are discussed in more detail in the following section.

### **3.3.3 Factors which Promote Resilience**

In the past the focus in the treatment of communication disorders has been on the identification of risk factors which may negatively influence communication development and the diagnosis of communication disorders, with the aim of alleviating risk factors or treating disorders (Eloff & Ebersöhn, 2001; Gerber, 1990). The focus has, therefore, always been on the identification and treatment of aspects which negatively impact upon communication development. Although information on risks and the identification of disorders is crucial to effective service provision (Rossetti, 2001) there are other factors which positively influence development and knowledge of these factors is also crucial to effective service provision. The presence of protective factors, which enhance communication development despite the presence of other risk factors, increase the child's resilience to communication disorders. Resilience can be defined as the ability to adapt successfully and function effectively despite the presence of constant stress or adversity or the exposure to prolonged or acute trauma (Klass, 1999).

Pioneering health professionals from various fields have started to focus on the resilience of children in overcoming risk factors (Gilligan, 2001; Werner, 2000; Strauss, 2001; Wissing & van Eeden, 2002; Klass, 1999). A resilient child is able to function effectively despite the presence of stress, adversity or trauma (Klass, 1999). Resilience is not only a result of genetic predisposition but is also strongly influenced by experiences in the formative years (Joseph, 1994). An awareness of the importance of resilience and the impact thereof on development raises the question as to how professionals from various fields are promoting effective functioning and resilience in children.

In contrast with past trends in the medical model which focused on negative aspects such as the management of disorders and illnesses, current trends in medicine reflect a focus on what is normal and positive in development (Dworkin, 2000). Medical practices are now prioritising the promotion of normal development. This focus on educating parents about what to expect of their children and how to stimulate normal development is termed *anticipatory guidance* (American Academy of Paediatrics, 1995).

There has been a similar shift in focus in psychology. In recent years a new perspective, namely the *fortigenic perspective*, has emerged in psychology (Wissing & van Eeden, 2002). The fortigenic perspective, in contrast with the pathogenic orientation, focuses on factors related to well-being rather than factors related to illness (Wissing & van Eeden, 2002).

A comparable trend has been acknowledged in the provision of Craniofacial care (Strauss, 2001). Research has brought to light the value of using techniques such as creating optimism, using alternative questions when dealing with patients or parents and developing an understanding of resilience and health in highlighting aspects which may have positive value to the family (Strauss, 2001).

Social work has also followed the current trend (Gilligan, 2001). Research has indicated that certain children who are placed in foster care are successful, well-adapted individuals despite their circumstances (Gilligan, 2001). Along with this awareness a new focus has developed which looks at helping children in foster care to develop the necessary skills in order to survive and succeed despite adversity (Gilligan, 2001). Resilience-led social work practices focus on the value of meaningful relationships and positive experiences as well as encouraging stability and the development of responsibility (Gilligan, 2001; Daniel, Wasser & Gilligan, 1999).

Early childhood intervention is, consequently, broadening its focus to incorporate resilience. Longitudinal research studies in early intervention have focused on protective factors in children (Werner, 2000). These studies reflect a shift in attention from the causes of developmental problems to factors that promote resilience

(Werner, 2000). ASHA (1991) also documents a positive approach that prioritises wellness as a prevention strategy.

For many South African communities that have *limited resources* and *multiple risks* for disorders (Kritzinger, 2000) a focus on the identification and prevention of risk factors may be costly and unattainable. *Only* focusing on the problems within a community may also not be the best approach for achieving functional improvements and change. Despite the presence of risk factors it is likely that communities also have certain, inherent assets.

Examples of the attainment of positive outcomes and the lessening of risks within communities are found in the development of community assets through community upliftment programmes. One such programme in the Western Cape aimed at reducing the prevalence of fetal alcohol syndrome found that community upliftment and development had more positive outcomes than focusing on the problem of alcohol abuse (MRC, 2000). The enhancement of assets and the empowerment of community members to bring about positive changes may be a more productive approach in countries and communities with multiple risks. Focusing on community assets and factors which promote resilience to risks appears to have value in the prevention of communication disorders.

An asset-based approach implies a move away from the more traditional focus on problems, deficiencies and needs towards a social, more holistic view of individuals and communities, reflecting on the broader social context in which problems appear (Eloff & Ebersöhn, 2001). Focusing on community assets rather than deficiencies has certain advantages, namely that professionals are not overwhelmed by negative aspects, that communities are empowered to participate in solving dilemmas, that assets are not downplayed in order to obtain funding for projects and that services may be less fragmented (Eloff & Ebersöhn, 2001).

It is apparent from the discussion above that a new, positive focus on resilience, assets and protective factors is evolving across a multitude of fields, empowering communities and promoting collaboration (Eloff & Ebersöhn, 2001). The majority of early intervention professionals are, however, entrenched in the traditional needs-

based approach which focuses on deficiencies (Eloff & Ebersöhn, 2001). Early intervention professionals will, consequently, have to actively aim at promoting resilience within communities by embracing an asset-based approach.

Different studies have served to highlight factors which positively impact on children’s abilities to be resilient to risk factors and, therefore, positively impact children’s development. Factors which increase resilience to risks are displayed in Table 3.4.

**Table 3.4 Factors which promote resilience to risk**

<b>Factor Promoting Resilience</b>	<b>Source</b>
An easy, engaging, adaptable temperament.	Klass, 1999; Joseph, 1994; Osofsky & Thompson, 2000; Werner, 2000
An active, alert and social nature.	Werner, 2000
The presence of a supportive environment in the home.	Gilligan, 2001; Osofsky & Thompson, 2000; Werner, 2000
The presence of community social support networks.	Werner, 2000; Gilligan, 2001; Osofsky & Thompson, 2000
A stimulating physical environment.	Gilligan, 2000; Girolametto <i>et al.</i> , 2000
A reciprocal relationship between parent and child involving affect-attunement and emotional availability.	Osofsky & Thompson, 2000
Parents and caregivers who foster self-esteem.	Osofsky & Thompson, 2000
The mother’s level of education and competence.	Werner, 2000
Successful school experiences.	Werner, 2000

The first two factors listed in Table 3.4 (an easy, engaging, adaptable temperament and an active, alert and social nature) relate to the inherent nature of the child, which is determined by genetics and cannot be altered. The other seven factors listed in the table can, however, be manipulated. This means that the resilience and optimal functioning may be facilitated (Gilligan, 2001).

The fact that a child’s future is not solely determined by the presence of risk factors but may also be affected by the amplification of factors which increase resilience has positive implications for the prevention of communication disorders. Preventative intervention may facilitate optimal environments which would benefit infants and children immediately and in the long term (Osofsky & Thompson, 2000).

However, the ideal solution for the prevention of communication disorders probably lies in the use of a combination of methods. Professionals should aim to identify and prevent those established risks which are associated with communication disorders and delays which are preventable (such as hearing losses caused by rubella) but also to assist parents and caregivers in promoting optimal development and resilience to risk factors.

### **3.4 THE INFLUENCE OF THE SOUTH AFRICAN CONTEXT**

Although international trends in the identification and prevention of communication disorders and the facilitation of resilience provides a benchmark from which similar initiatives can be planned, executed and evaluated, it is important to consider the unique needs of the South African context. Communities within South Africa may be at risk for particular disorders and yet, simultaneously, have inherent assets which increase the resilience to developing disorders. Professionals must, therefore, identify which factors influence the specific community's risk for and resilience to developing communication disorders as well as how to overcome barriers which hinder the effectiveness of prevention programmes.

#### **3.4.1 Risk Factors in South Africa**

Researchers have identified certain risk factors relating to the development of communication problems in various countries (WHO, 1996). It appears, however, that developing countries such as South Africa have a greater risk for conditions which increase the risk for communication delays (Kritzinger, 2000; Viljoen, 1999; Rautenbach, Terblanche & Venter, 1997). In South Africa there is a particular *risk for the development of communication disorders* due to a higher prevalence of risk factors such as low birth weight, Down Syndrome, cleft lip and palate, cerebral palsy, fetal alcohol syndrome, HIV/AIDS, low socio-economic status, multilingualism and significant bilateral sensori-neural hearing loss (Kritzinger, 2000; Ainsworth & Filmer, 2002; Pickering *et al.*, 1998).

Some of these risk factors, such as *low birth weight, cerebral palsy and significant bilateral sensori-neural hearing loss* appear to be true for the general population of South Africa, placing all communities at an increased risk for communication disorders (Kritzinger, 2000). Low birth weight is associated with various conditions but research has indicated that a contributing factor in South Africa may be poor nutrition and iron deficiency anaemia (WHO, 2003). Although supplementation would reduce this there is currently no national strategy in place to implement this (WHO, 2003). This may be due to the costs involved in providing nutritional supplementation.

Another factor which increases the risk for communication disorders in many South African communities is the large number of teenage pregnancies. Thousands of infants are born to teenage mothers from various communities in South Africa every year with all South African communities being affected by teenage pregnancies (Census, 1996). As indicated in Table 3.3, infants born to adolescent mothers are at a greater risk for communication disorders (Osofsky & Thompson, 2000). Infants born to adolescent mothers are at an increased risk for low birth weight and premature birth (Rossetti, 2001). Furthermore, expectant adolescents are less likely to receive adequate prenatal care and are mostly less educated than adult mothers, resulting in a combination of biological and environmental risks for the infant (Rossetti, 2001).

A further risk factor which affects the general population of South Africa is *HIV/AIDS* (WHO, 2003). The prevalence of HIV/AIDS in South Africa was almost 20% in 1999 (Ainsworth & Filmer, 2002). The high prevalence thereof and the greater susceptibility of poverty-stricken communities results in many poverty-stricken children becoming infected with HIV/AIDS (Ebersöhn & Eloff, 2002). Infected children as well as children living with infected parents and caregivers frequently suffer from poor nutrition and ill health, with many showing symptoms of a failure to thrive (Ebersöhn & Eloff, 2002).

Furthermore, HIV/AIDS also affects communication development as infants and young children who are infected with HIV/AIDS are more likely to exhibit cognitive disorders, delayed language development and poor oral-motor development (Davis-McFarland, 2000). The majority of these children do not achieve language milestones



at the expected ages and may exhibit progressive developmental decline (Davis-McFarland, 2000). It is, consequently, important that speech-language therapists heed the effects of HIV/AIDS on communication development.

In addition, family structures are frequently affected, resulting in the loss of a parent or both parents and children assuming roles such as the physical care of sick elders or younger siblings, for which they are ill-equipped (Ebersöhn & Eloff, 2002). Other effects of HIV/AIDS include an increase in financial hardship and psychosocial distress as well as a decrease in school attendance resulting in an increased risk for poor economical performance in the future (Ebersöhn & Eloff, 2002). Consequently, HIV/AIDS does not only affect those who have contracted the disease but entire communities are affected as well and the country, as a whole, will also be influenced by the drain on available resources.

Many communities in South Africa are also affected by a lack of resources due to the high rates of *poverty* in the country (Pickering *et al.*, 1998). It is estimated that 61% of the 16.3 million children in South Africa are living in poverty (Ebersöhn & Eloff, 2002). Having access to external resources has been linked to an increase in resilience from developing problems (Werner, 2000). External resources may help parents to provide adequate stimulation to infants and, therefore, maximise development and minimise the impact of any risk factors (Werner, 2000). In contrast low socio-economic status is a risk factor for the development of communication disorders (Lequerica, 1997; Kritzinger & Louw, 1999; Wooster, 1999). Furthermore children from low-income homes are also at an increased risk for anaemia, asthma as well as poor adaptive play skills and cognitive development (Lequerica, 1997). It is therefore expected that children from low-income homes in South Africa will achieve optimal communication development, with a resulting higher prevalence of communication disorders.

In a *multi-lingual* context such as South Africa (Fair & Louw, 1999) one could also expect communication development within most, if not all, South African communities to be affected by the simultaneous acquisition of more than one language. The simultaneous acquisition of more than one language may contribute to language confusion, code switching or lack of language dominance (Lequerica, 1997).

Research has indicated that language mixing is related to the parental language model as well as the parents' response to language mixing (Mishina, 1999; Lanvers, 1999). Although there are certain, documented advantages of being *bilingual* such as being more culturally sensitive as well as certain advantages in cognitive development (Mishina, 1999; Owens, 2001) most South African children grow up in a *multi-lingual* language learning environment. Children in South Africa are exposed to eleven official languages (Penn, 2000; Heugh, 2002). Despite research advocating education in a child's mother tongue, this is frequently not possible (Heugh, 2002). The Language in Education Policy which was issued in 1997 promotes the use of multilingual education with a strong emphasis on the use of English, despite evidence of the failure of children who do not receive adequate support in their mother tongue (Heugh, 2002). "If the mother tongue is replaced, the second language will not, in most cases, be adequately learnt and linguistic proficiency in both languages will be compromised" (Heugh, 2002 p. 174).

The multi-lingual language learning environment in South Africa may well, therefore, result in negative aspects such as language confusion and a tendency towards code switching emerging. Multi-lingual language acquisition may, consequently, be viewed as a risk factor for the development of communication disorders.

Although certain risk factors may affect children and families in the general population of South Africa, other risk factors appear to be associated with specific communities. An example of a community-specific trend is the extremely high prevalence of *fetal alcohol syndrome* (FAS) of 4,8% in the Wellington district in the Western Cape (Viljoen, 1999). This is linked to outdated practices in the wine industry of giving wine to workers as part of their wages (Viljoen, 1999). A prevalence of 4,8% is at least 24 times higher than the prevalence of 1-2 per 1000 live births in developed countries (Kritzinger, 2000).

Another wine industry community which is affected by this tradition and which has high rates of FAS is Stellenbosch (MRC, 2000). Further studies have reported a prevalence of 6% in the Western Cape with 1 in 5 children who are committed to institutions for the mentally handicapped having FAS (MRC, 2002). FAS causes growth retardation, central nervous system defects, mental retardation, behavioural

disturbances and distinctive facial features (MRC, 2002). Considering the serious effects of FAS on the health and development of a child the prevalence thereof in communities in the Cape will have far reaching consequences for that community for decades to come.

Another example of specific communities which appear to be prone to a higher prevalence of certain risk factors are the communities serviced by the Kalafong Hospital which have a prevalence of 33% for *low birth weight* (Rautenbach *et al.*, 1997) in comparison to the average of 12% in the rest of South Africa and 6-8% in developed countries (Kritzinger, 2000). The hospital in question serves the surrounding impoverished communities which have a high prevalence of unemployment (Census, 1996). The high prevalence of infants born with low birth weight may be due to the presence of risk factors such as a lack of adequate health care and poor nutritional status of the mothers (Rossetti, 2001; Wooster, 1999).

Research in the rural Bushbuckridge district in the Limpopo province has indicated a high prevalence of *otitis media* (Kromberg, Christianson, Manga, Zwane, Rosen, Venter & Homer, 1997). After the common cold, otitis media (or middle ear infection) is the most prevalent infectious childhood illness and most children contract it at least once before the age of two (Hugo & Pottas, 1997). When children are exposed to repeated middle ear infections it can have a significant impact on the development of communication skills (Louw, Hugo, Kritzinger & Pottas, 2002; Hugo & Pottas, 1997; Shriberg *et al.*, 2000).

It becomes apparent that *all communities* within South Africa are at an increased risk for at least three risk conditions while other communities are at a *further risk* for additional risk conditions. Furthermore *all* of these conditions increase the risk for communication disorders. It is evident, therefore, that no community within South Africa is exempt from the increased risk for communication disorders and all communities *require prevention efforts* in order to reduce the prevalence of these risk conditions. Prevention efforts should, however, recognise the unique needs and risk conditions within different communities, making attempts at uniform prevention efforts across all communities less effective.

### 3.4.2 Factors which Promote Resilience in South Africa

According to a more holistic view of development, namely an asset-based perspective, it is important to recognise factors which promote development and resilience in communities (Eloff & Ebersöhn, 2001). Despite the many risk factors for communication disorders and delays in South Africa in general as well as in specific communities there are also certain factors which may increase resilience to risks within South Africa.

There is a traditional African saying which states that “it takes a village to raise a child”. This implies that the whole community is involved in caring for children within the community. Similar to trends observed in Asian families, many traditional black families in South Africa are characterised as extended families (Hansen, 1999) where children live not only with their parents but also with their grandparents and other family members. This creates a socially rich environment where children feel safe and cared for (Gilligan, 2001). One of the factors which was identified as promoting resilience to the development of communication disorders in 3.3.3 was the presence of community social support networks (Werner, 2000; Gilligan, 2001; Osofsky & Thompson, 2000). The fact that most South African families are living in conditions of poverty (Ebersöhn & Eloff, 2002) means that extended families are living together in inadequate housing conditions which may give rise to other risks which are typically associated with low socio-economic conditions such as inadequate nutrition or maltreatment (Rossetti, 2001; Sidebotham *et al.*, 2002).

The presence of social support networks is another factor which promotes resilience (McNurlen, 1996). The effect of HIV/AIDS on family structures in South Africa makes the presence of broader support networks even more important. Many children in South Africa are abandoned due to their HIV/AIDS status and still more have been orphaned as a result of their parents contracting HIV/AIDS (Ebersöhn & Eloff, 2002). The resulting isolation due to abandonment or loss of family members due to HIV/AIDS could have serious implications for children’s development. These factors may, however, have less impact on the child’s development if the child is part of a rich, broader social environment. Although it has been found that children in single-parent families are more at risk for communication disorders (Rossetti, 2001) and

there is an expected increase in single-parent families due to the high prevalence of HIV/AIDS in South Africa (Ainsworth & Filmer, 2002) there is not necessarily a linear correlation. Research has indicated that children from single-parent families are not necessarily more at risk if they have access to other social support networks (McNurlen, 1996). Prevention programmes in South Africa should therefore promote the active involvement of other family members and caregivers in the facilitation of communication development.

Another factor which may promote resilience to risk factors in South Africa is the cultural environment. South Africa has a large diversity of cultures (Pickering *et al.*, 1998; Census, 1996) with many cultural traditions and celebrations. Parents, either consciously or unconsciously, aim to promote and encourage cultural knowledge and skills through the involvement of children in cultural experiences (Garcia Coll & Magnuson, 2000). Cultural and communication development are, however, intertwined (Crago, 1992; Battle, 1998) and culture itself can, therefore, be a growth-promoting influence (Garcia Coll & Magnuson, 2000). The rich cultural heritage of South African children can, therefore, contribute to improved developmental outcomes by promoting cultural, language-enriching experiences.

Besides being a multi-cultural environment South Africa is also a multi-lingual environment with the recognition of eleven national languages (Fair & Louw, 1999; Penn, 2000; Census, 1996). Contrary to the focus on multi-lingual language acquisition as a risk factor which could negatively impact upon communication development, bilingual language acquisition may have certain positive developmental outcomes (Owens, 2001). Balanced bilingual language acquisition may promote cognitive growth by increasing metalinguistic awareness and language proficiency (Garcia Coll & Magnuson, 2000). Furthermore bilingual language acquisition may also increase social sensitivity (Owens, 2001). In a multi-cultural environment such as South Africa which has a history of racial tension, the development of social sensitivity could have positive implications for future racial relations. Acquiring language within a multi-lingual context may, consequently, have certain positive implications too. The multi-lingual language learning environment in South Africa therefore constitutes a continuum of risk. On the one hand multi-lingual language learning and education without adequate support for the development of the mother-

tongue could result in communication disorders (Heugh, 2002) representing a high risk for development. On the other hand multi-lingual language development with good language models and adequate support could result in improved cognitive development and even increased cultural sensitivity (Garcia Coll & Magnuson, 2000; Owens, 2001).

Many factors influence communication development within the South African context. Some factors constitute risks for communication development, other factors promote resilience to risks and some factors, given the right circumstances and support, may change from a risk factor to a factor that promotes resilience. The conclusion is reached that professionals need to be aware of potential risks while capitalising on the inherent strengths in the community in order to promote the prevention of communication disorders.

### **3.4.3 Finding Solutions to Possible Barriers to the Prevention of Communication Disorders in South Africa**

Multiple risks for communication disorders, serious consequences of communication disorders and the need for more communication-related prevention programmes in South Africa highlights the question of *what are the barriers to the development of prevention programmes in South Africa?*

One of the primary barriers to the prevention of communication disorders in South Africa is the *lack of legislation* mandating prevention efforts. Despite position statements which support the prevention of communication disorders, there is no legislation mandating actions. Two position papers affecting the prevention of communication disorders have been issued.

In 1997 the white paper on an Integrated National Disability Strategy (White Paper on Integrated National Disability Strategy, 1997) was formulated (Department of Health, 2001). This paper aims to provide guidelines on the integration of children with disabilities in the education setting and offers guidelines on the inclusion of disability related programmes (Department of Health, 2001). One of the main focuses of this document is on prevention, primary health care and the promotion of wellness

(Department of Health, 2001). However, no legislation has been passed based on this position statement supporting formal prevention programmes and, consequently, there is a lack of funding provided in the national budget for such activities. Professionals who aim to prevent disabilities do so on their own initiative resulting in inadequate prevention programmes being implemented.

In 2000 another position statement affecting the prevention of communication disorders was formulated by the Professional Board for Speech, Language and Hearing Professions for the HPCSA. This position statement aims to promote the use of infant hearing screening in order to identify hearing impairments so as to prevent or minimise the resulting communication disorders (HPCSA: Professional Board for Speech, Language and Hearing Professions 2002a). Once again there is no legislation in support of this position statement, resulting in a lack of funding for professional involvement in these activities and, consequently, insufficient efforts.

A further barrier to the prevention of communication disorders in South Africa is the large proportion of the population which resides in underdeveloped, rural areas (Census, 1996). Many people do not have access to adequate health care and rehabilitative services. People living in remote, underdeveloped locations may need to travel very far to the nearest hospital if they need to consult a speech-language therapist. This highlights the need for co-operation between different professionals in the provision of services and the implementation of prevention programmes. Despite an awareness for the need for co-operation between professionals from different disciplines, the recognition that the team model of service delivery is ideal for ECI in South Africa and research (Moodley, 1999) highlighting the potential value of collaborative team initiatives in ECI service delivery in South Africa, co-operation between different professionals is not yet the norm.

Furthermore, *the majority of speech-language therapists are English or Afrikaans speaking*, resulting in the need for a third party such as an interpreter to be present when services are provided (Penn, 2000). This affects the cultural applicability of service delivery and makes comprehensive prevention programmes even harder and more costly to implement (Louw & Avenant, 2002).

An important barrier to the prevention of communication disorders in a developing country such as South Africa is *the cost involved* (Hugo, Louw, Kritzinger & Smit, 2000). When financial resources are limited then the costs involved in a prevention programme may affect the feasibility thereof. Certain prevention efforts may be less expensive than others and professionals should attempt to develop cost-effective prevention measures. However, the costs of the prevention programme should be considered in light of the costs of the disease or disorder. Although early identification and prevention may be costly it may still be cheaper than the provision of rehabilitation services later.

Research has indicated that the costs of intervening in communication disorders early on is three to six times lower than that of intervention programmes with older children (Rossetti, 2001). It can be hypothesised that the same would be true of the comparative costs of primary prevention programmes which eliminate the far-reaching, long-term effects of communication disorders and the costs of secondary and tertiary prevention programmes (which limit the impact but do not prevent the communication disorders from still having costly long-term effects). If this is the case, primary prevention would be more cost-effective than secondary or tertiary prevention. This hypothesis has been supported by research which considered the costs of preventing the *Haemophilus influenzae* type B disease (a major cause of bacterial infections in children) in South Africa (Hussey *et al.*, 1995). The findings supported the hypothesis that prevention is cheaper than treatment (Hussey *et al.*, 1995).

Another barrier to the prevention of communication disorders in South Africa is the *lack of professional involvement*. Many speech-language therapists in clinical practice continue to focus on the provision of one-to-one rehabilitative therapy while neglecting roles such as prevention, education and early identification (Gerber, 1998; Hugo, 1998). Critical roles that speech-language therapists are required to fulfil include the prevention of communication and related disorders, the identification of clients with communication disorders, the assessment of communication and related skill areas, the treatment of communication and related disorders, the provision of counselling, consulting with other professionals, research, providing education as well as participating in the management of the work environment (Hugo, 2003). A lack of



professional involvement in these functions will result in the late identification of risks, making it impossible to prevent the resulting communication disorders.

This is reflected in the fact that *risk conditions and communication disorders are identified late* despite the fact that the effectiveness of early communication intervention relies on the early identification of risks and communication disorders (Kritzinger *et al.*, 2001). The late identification of risk factors and communication disorders therefore constitutes another significant barrier to the secondary prevention of communication disorders.

Furthermore, the results of South African research (Kritzinger, 2000) have indicated that a large proportion of communication delays are *identified by the caregivers* and not by professionals. This clearly indicates that methods for the early identification of risks and disorders such as high-risk registers and screening methods are not fully utilised by professionals. If all infants and children were screened and followed up during different periods of risk for the development of communication disorders, then professionals would be able to identify the majority of disorders earlier (Kritzinger, 2000). There are, however, also too few speech-language therapists in South Africa to fulfil the many roles which are required of them (Uys, 1993; Pickering, *et al.*, 1998). Speech-language therapists cannot, therefore, manage the prevention of communication disorders in isolation. Collaboration between speech-language therapists and community nurses and the provision of appropriate training to community nurses could result in improved ECI service delivery (Moodley *et al.*, 2000).

Community health workers need to be involved in the prevention of communication disorders (Fair & Louw, 1999). Community health workers can be from any primary discipline such as physiotherapy, occupational therapy, nursing or even health workers who have a two-year qualification in community health care (Fair & Louw, 1999). The use of health care workers from the community may make services more accessible and culturally appropriate to the community (Moodley, 1999). Research (Moodley, 1999) in family health clinics in the Durban area in Kwa-Zulu Natal province has indicated that community nurses appear to be aware of their value as members of the ECI team but do not have sufficient knowledge to fulfil this role. This

highlights the need for inter-disciplinary training programmes that focus on enhancing transdisciplinary ECI service delivery which would make services more accessible to the families and communities (Moodley, 1999). Community nurses have an important role to play in screening infants and toddlers as well as in making applicable referrals (Moodley, 1999).

Although there is a need for professionals to get involved in screening for and the early identification of communication disorders one should not ignore the important role that caregivers can play in early identification. Parents are competent judges of their children's skills (Rossetti, 2001; Fenson *et al.*, 1993) and research indicates that they are frequently the first to identify a problem (Kritzinger *et al.*, 2001). It appears that parents, as a resource, are not being utilised to the extent which they could be.

The establishment of family-centred prevention programmes have been found to be both cost- and time-effective (Banigan, 1998). Family-centred prevention programmes rely less heavily on government resources and time-consuming input from professionals. This is, therefore, a viable option for developing countries such as South Africa which are burdened with numerous issues regarding the provision of adequate health-care (Schoeman, 1991). One possible solution is the adoption of the one-stop model of service delivery through the establishment of centres which aim to meet the full range of diverse family needs at one location (Lequerica, 1997). These centres could provide family-centred, accessible, ongoing services such as developmental screening, educational referrals and parental guidance in the form of information and training (Lequerica, 1997).

Professionals should therefore focus on educating and empowering caregivers to identify problems early. This may have a significant impact on the early identification and prevention of communication disorders. Consequently a possible solution for the lack of professional involvement in prevention efforts, the shortage of speech-language therapists and the late identification of risks and disorders, is the involvement of caregivers in the development of prevention measures.

A barrier, which may hinder the involvement of caregivers in prevention efforts, is the limited literacy skills amongst caregivers (Fair & Louw, 1999). Alternative methods

to written information can, however, also be used to convey meaning. The use of visual representations such as pictures have been used successfully to assist caregivers in interview situations (Ligthelm, 2001).

This discussion highlights the fact that, although there are barriers to the prevention of communication disorders in South Africa, there are also possible solutions to some of these problems.

### **3.5 THE PREVENTION OF COMMUNICATION DISORDERS IN SOUTH AFRICA**

An awareness of the unique needs, risk and resilience factors as well as the barriers to the prevention of communication disorders in South Africa highlights the need for principles and strategies with which to meet these needs.

#### **3.5.1 Principles for the Prevention of Communication Disorders in South Africa**

According to Fair and Louw (1999) there are too few speech-language therapists to meet the diverse prevention needs of all South African communities. The need to involve caregivers and other professionals in prevention efforts becomes apparent.

Just as research has proposed a transdisciplinary conceptual framework for the early identification of communication disorders (Kritzinger *et al.*, 2001) a possible solution for the prevention of communication disorders may also follow a similar approach. The use of transdisciplinary teams would allow for the participation of a number of different professionals in the prevention of communication disorders. South African research (Moodley, 1999) has indicated that this can be achieved through the implementation of transdisciplinary training programmes which focus on training professionals from other disciplines in the identification and referral of children who are at risk for communication disorders or delays.

Principles which are endorsed for ECI service delivery include a need to be family-centred, culturally sensitive, comprehensive and co-ordinated (Madding, 2000; Louw & Avenant, 2002; Moodley, 1999) and the use of a transdisciplinary approach would facilitate the achievement of these goals in South Africa (Moodley, 1999; Bornman, 2001).

The use of a transdisciplinary approach to the prevention of communication disorders would involve the development of shared meaning between professionals (Briggs, 1997). This can be achieved through collaboration between different professionals, including interdisciplinary training sessions which would lead to a better understanding of the roles of different professionals in ECI (Moodley, 1999).

These teams would be characterised by the following: professionals from many different disciplines would participate in the team, proceedings would be based on collaboration and consensus decision making, the needs of families would be central to the decisions made and the provision of services would be co-ordinated (Briggs, 1997; Fair & Louw, 1999; Kritzinger *et al.*, 2001). The professionals who participate in such a team would contribute training and experience that is typical of the discipline but will also shift their roles and responsibilities, moving across traditional boundaries (Briggs, 1997; Kritzinger *et al.*, 2001).

Research (Moodley, 1999) has indicated that collaboration between speech-language therapists and community nurses in South Africa would lead to the broadening of the roles of both speech-language therapists and nurses as well as promoting the early identification of children at risk for communication disorders. Owing to the shortage of speech-language therapists, especially in more rural locations (Uys & Hugo, 1997; Fair & Louw, 1999; Moodley, 1999), many communities have more access to community nurses than to speech-language therapists. Community health workers have been identified as the frontline workers in primary health care (Bornman, 2001; Moodley, 1999). Other professionals, who are involved with individuals with communication disorders and could make valuable contributions within transdisciplinary teams, are occupational therapists, physiotherapists, psychologists as well as professionals involved in education (Bornman, 2001).

The use of transdisciplinary teams which incorporate professionals such as community health workers who are intimately involved in providing primary health care within communities would make ECI services more efficient, cost-effective, accessible and more culturally appropriate (Moodley, 1999). In order to achieve these goals, the transdisciplinary team would need to recognise the parents as central participants (Scheffner Hammer, 1998; Madding, 2000). Family members should also play a central role in decision-making and attention should be given to family priorities (Zhang & Bennett, 2001).

In order for families to fulfil central roles within transdisciplinary ECI teams they would require support from the professionals within the team. Professionals need to adopt a partnership-based approach to working with parents, highlighting and working with family strengths (Green, Mulvey, Fisher & Woratschek, 1996). Speech-language therapists would need to *train parents and provide parents with information and guidance* (Lequerica, 1997; Banigan, 1998). This would empower parents to contribute in the decision-making process (Mc Conkey, Mariga, Braadland & Mphole, 2000).

Besides providing support to families, there are further functions which should be fulfilled by the speech-language therapist in a transdisciplinary team for the prevention of communication disorders. The prevention of communication and related disorders requires speech-language therapists to contribute towards the dissemination of information and participate in the planning and execution of transdisciplinary prevention programmes (Hugo, 2003).

Speech-language therapists would need to *understand the factors that place individuals at risk for communication disorders* (ASHA, 1991). Effective teamwork with other members of the transdisciplinary team would be an important component of developing an understanding of these factors. Teamwork would promote the exchange of information regarding risk factors which may impede the infant's ability to interact with the environment (Rossetti, 2001).

*An understanding of the conditions that promote the development of optimal communication abilities* is also necessary (ASHA, 1991). Promoting optimal

communication development is viewed as a proactive form of primary prevention (ASHA, 1991). In contrast with other primary prevention actions which focus on the prevention of a disease such as the termination of pregnancies, preventing the birth of a child with Down syndrome, a focus on stimulating the development of optimal communication skills in infants implies a focus on the positive. Once again the effectiveness of promoting optimal development would rely on information exchange and the development of shared meaning between team members.

The *early identification of risks and disorders* is another important function for speech-language therapists and the transdisciplinary team as the implementation of effective communication-related prevention measures depends upon identifying the factors which increase the risk for communication delays. Speech-language therapists need to plan and execute identification programmes as well as train other professionals to execute identification programmes (Hugo, 2003). The effectiveness of ECI service delivery depends on the early identification of children who are at risk for communication disorders (Kritzinger, 2000).

The *provision of family- and community-centred primary prevention information* is also important to the South African context (ASHA, 1991). The previous discussions have highlighted the fact that individual communities have specific risk and resilience factors which make the application of uniform prevention efforts across all communities ineffective. In order to actively promote the development of optimal communication skills in infants, as suggested above, speech-language therapists, as members of the transdisciplinary team, would have to begin at grass-root level by developing applicable strategies and programmes which can be applied in communities and, ultimately, individual families.

Ultimately the goal of all speech-language therapists and audiologists in South Africa should include *the reduction of the prevalence and incidence of communication disorders*. South Africa, however, is a multi-cultural environment with communities ranging from the developing to the developed (Pickering *et al.*, 1998). The information and training needs of all communities within South Africa cannot be met by a single approach. Within each community there are specific needs as to the type and format of information that would assist parents in stimulating optimal

communication development in their infants (Fetterman, 1998). These parental needs must be identified and met by professionals serving the community. A reduction of the incidence and prevalence of communication disorders in South Africa can be achieved through efforts from every speech-language therapist within the individual communities they serve. Programmes that are developed should, therefore, reflect the needs of the community for whom it is developed.

Figure 3.2 displays a proposed conceptual framework for the primary prevention of communication disorders in South Africa. As displayed in figure 3.2, the central issue in the conceptual framework is the formation of transdisciplinary teams in order to create shared meaning (Briggs, 1997; Kritzinger *et al.*, 2001; Moodley, 1999). As a result of increases in knowledge, a better understanding of the factors influencing communication development will evolve (Briggs, 1997). As a result the individual members of the teams will be better equipped to participate in the prevention of communication disorders (Briggs, 1997). This will empower the members to become more active in team efforts to develop prevention programmes.

The proposed outcome of these interdisciplinary prevention teams is the promotion of optimal communication development and the prevention of communication disorders within communities with the development of shared meaning through interdisciplinary training. This means that all of the professionals who are involved in the prevention of communication disorders will have access to the same information and will have reached a consensus as to the objectives of the prevention programme. Communities as a whole will benefit from accurate, complete and consistent information being provided to them. This can be done most effectively through the involvement of a range of different professionals (Fair & Louw, 1999; Moodley *et al.*, 2000). The proposed conceptual framework therefore highlights the need for transdisciplinary teams which address the need for the prevention of communication disorders by developing culturally sensitive prevention programmes which address the needs of individual communities.

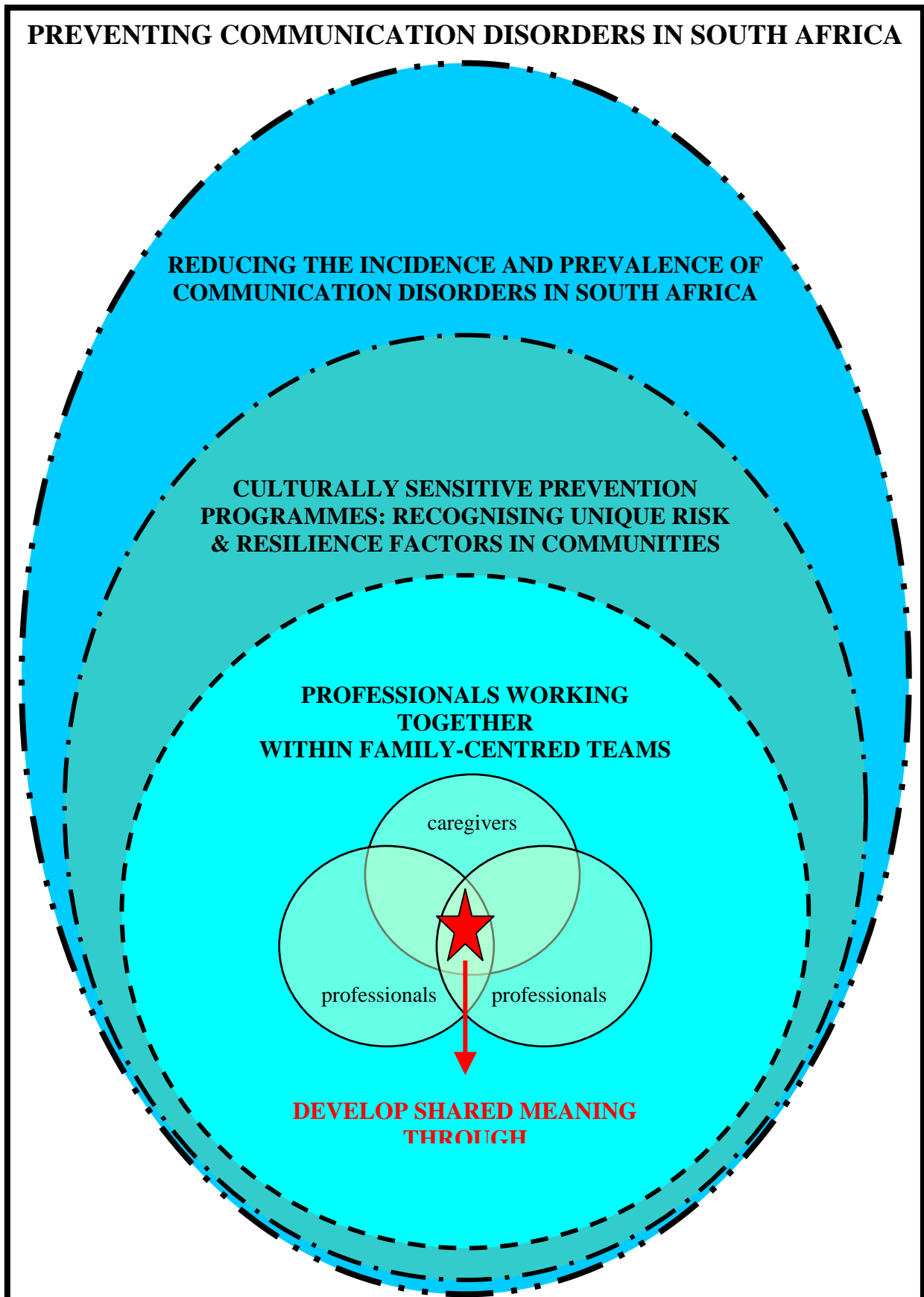


Figure 3.2 A schematic presentation of the proposed conceptual framework for the prevention of communication disorders in South Africa



### 3.5.2 Strategies for the Prevention of Communication Disorders in South Africa

The need for culturally sensitive prevention tools which are aimed at meeting the needs of specific communities in South Africa can be achieved through the application of a number of different strategies. Examples of different prevention strategies are listed in Table 3.5.

**Table 3.5 Examples of strategies for the prevention of communication disorders**

Strategy	Source
The use of a variety of screening methods in order to identify risks and disorders.	Justice <i>et al.</i> , 2002; Stott <i>et al.</i> , 2002; Moodley <i>et al.</i> , 2000; Gerber, 1998; Kritzinger <i>et al.</i> , 1995; Klee <i>et al.</i> , 2000
The provision of vaccinations.	Gerber, 1998; WHO, 2002; WHO, 2003
The surgical correction of cleft lip and palate.	Harding & Grunwell, 1993
The provision of hearing aids and the implantation of cochlear implants.	Ertmer & Mellon, 2001
Focusing on community upliftment.	MRC, 2000
Promoting health and normal communication development.	Kritzinger, 2000; Gerber, 1998; High <i>et al.</i> , 2000; Guralnick, 1997
The education of other professionals	Billeaud, 1998; Guralnick, 1997; Banigan, 1998; Gerber, 1998
The education of and collaboration with parents	Billeaud, 1998; Guralnick, 1997; Banigan, 1998; Gerber, 1998; Hugo & Pottas, 1997

The effective prevention of communication disorders relies on the identification of risk factors and children who are at risk for communication delays (Banigan, 1998). One strategy for the prevention of communication disorders should, therefore, be to *screen* as many children as possible. Screening may also help to identify which other prevention strategies would be most applicable for the community. For example, if screening methods reveal that a large percentage of communication disorders are caused by infectious diseases then the best cause of action would probably be the implementation of immunisation programmes (WHO, 2003). Screening methods selected would have to give high levels of sensitivity and specificity (Glascoe, 1995).

The problem exists, however, that screening methods are often not sensitive enough to identify disorders such as autism or pervasive developmental disorders early enough (Kritzinger, 2000). Furthermore, there is often a long period of time which lapses between identification of the disorder and the provision of intervention, which influences the ability to prevent the developmental sequelae (Kritzinger, 2000).

Another strategy for the prevention of communication disorders is therefore the use of *vaccinations* (Gerber, 1998; WHO, 2002; WHO, 2003). The provision of vaccinations is frequently very cost effective and has long term effectiveness for the prevention of disorders (WHO, 2002). In South Africa 97% of children receive the BCG vaccination which prevents TB, 76% of children receive the DPT3 vaccination which prevents diphtheria, tetanus and whooping cough, 82% of children receive the MMR vaccination which prevents measles, mumps and rubella and 72% receive the polio vaccination (WHO, 2003). These figures compare favourably to other developing countries such as Angola and Lesotho, reflecting that South African children are more frequently immunised but compare less favourably with Botswana (also a developing country) and developed countries (WHO, 2003). Vaccinations ensure that infections which could otherwise have had serious implications on the development of the unborn fetus are not transmitted, thereby resulting in more healthy infants being born (McTaggart, 2001; WHO, 2002). Vaccinations also prevent young children from becoming infected with diseases which could have serious developmental implications such as meningitis, thereby ensuring the healthy development of infants (McTaggart, 2001).

A further strategy for the prevention of communication disorders is the *surgical correction of cleft lip and palate* (Harding & Grunwell, 1993). Although children with clefts already have an established risk for a communication disorder (Rossetti, 2001) the surgical correction of the cleft will contribute to the secondary prevention of the expected speech disorder.

Another strategy which could traditionally be seen as a secondary prevention strategy is the *provision of hearing aids and the implantation of cochlear implants* to hearing impaired children. However, research has indicated that the very early provision of cochlear implants can result in normal communication development in children with

severe hearing impairments (Ertmer & Mellon, 2001). The early provision of cochlear implants to hearing impaired children can consequently be seen as a successful primary prevention strategy. The implantation of cochlear implants is very costly and is not an affordable prevention strategy. It will, therefore, have limited use in a developing country such as South Africa.

Another example of a prevention strategy is *focusing on community upliftment* (MRC, 2000). This is a strategy which may have tremendous potential value to the South African context. Research has indicated that focusing on the upliftment of South African communities, in terms of skill training and improvement of quality of life, has implications for the prevalence of disorders such as fetal alcohol syndrome (MRC, 2000). In developing countries such as South Africa there may be many communities who could benefit from upliftment programmes with likely positive repercussions on the development of communication skills. The goal of focusing on community upliftment can be achieved through primary health care programmes which encourage community mobilisation, participation and initiative by focusing on community resources (Fair & Louw, 1999). An example of community empowerment and upliftment is when speech-language therapists on craniofacial teams provide training and support to community health workers and community volunteers, empowering these team members to provide the hands-on intervention themselves (Fair & Louw, 1999).

A further strategy which is aimed at the betterment of entire communities is the *promotion of health and normal communication development* (Kritzinger, 2000; Gerber, 1998). Examples of programmes which promote normal communication development in communities are pre-schools which enrol low-income and single-parent children who are at risk for communication disorders (Guralnick, 1997; High *et al.*, 2000). These programmes are successful prevention strategies as they result in long-term positive effects in children's development (Guralnick, 1997; High *et al.*, 2000). Programmes which are aimed at promoting normal development within specific communities are ideally suited to the multi-cultural, multi-lingual South African context.

A final example of a strategy which can be used to prevent communication disorders is *the dissemination of information and the education of other professionals and parents* (Hugo, 2003; Guralnick, 1997; Banigan, 1998; Gerber, 1998; Hugo & Pottas, 1997). Speech-language therapists need to educate other professionals as the cornerstone of transdisciplinary teams is the development of shared meaning (Kritzinger *et al.*, 2001; Briggs, 1997). Providing information to other professionals is crucial to the identification and prevention of communication disorders (Hugo, 2003). The provision of education to both professionals and parents is important in South Africa as there are too few speech-language therapists to ignore the potential, valuable impact that the involvement of other professionals and parents could have on the prevention of communication disorders. Furthermore the involvement of parents in community prevention efforts should result in more culturally sensitive programmes.

There are many different strategies which are applicable to the prevention of communication disorders in South African children. The selection of specific strategy will be determined by the aims of the programme and the needs of the community.

### **3.6 CAREGIVER EDUCATION AS A PREVENTION STRATEGY**

Education is an important component of a successful prevention programme (Banigan, 1998; Gerber, 1998). The use of *parent or caregiver education* as a prevention strategy is supported by findings which indicate that benefits to child development are mainly indirect, through improved parental knowledge and functioning (Guralnick, 1997). More competent parents are better able to meet their children's needs, regardless of the presence of risks (Guralnick, 1997). However many mothers now work outside the home (Flores Hernandez *et al.*, 1999; Klass, 1999). As a result, many children are placed in day care facilities or with nannies. The education of caregivers should, consequently, also include the education of day care staff and nannies (van Rensburg, 2002).

In order for prevention programmes which educate parents to be effective the *principles of adult learning* need to be incorporated. The science of applying certain principles when teaching adults was originally termed andragogy by Malcolm Knowles (in Kaufman, 2003). Principles which need to be applied when training

adults are described in Table 3.6 (adapted from Kaufman, 2003, Hay & Katsikitus, 2001; Reid, Rotholz, Parsons, Morris, Braswell, Green & Schell, 2003; Parson, 2001; Carlson, 1997; Carey, 1994).

**Table 3.6 Principles for training adults**

Principle	Description
Is needs-directed.	Learning content should be based on the needs of the adults who are to be trained. This is closely linked to learner motivation, which is an important aspect of adult learning. Ideally the adults who are being trained should be involved in the decision-making process regarding the content as well as the presentational format of the training.
Includes outlines of goals.	Training which starts off with clear guidelines on the goals which are to be achieved places the information which follows within a framework.
Provides basic knowledge.	Recognising that adults already have prior skills and knowledge, training should still provide a sound foundation of knowledge.
Includes real-life situations.	Learning is generalised more readily if it is based on real-life experiences.
Includes demonstrations.	The use of modelling or demonstrations makes it easier for adults to apply theoretical knowledge.
Reflects back.	Providing feedback is another important principle when training adults. Opportunities to reflect back cements newly acquired knowledge and skills. New, correct behaviours are reinforced while counterproductive behaviours are discouraged.

An excellent example of a programme which aims to educate parents and caregivers of children with communication disorders is The Hanen Program (2001). This is a video entitled ‘It takes two to talk: an introduction’. This programme is viewed to be the benchmark in ECI programmes as it successfully meets all of the principles of adult learning which are described in Table 3.7.

**Table 3.7 The application of adult-learning principles in The Hanen Program**

Principle	Description
Is needs-directed.	This programme includes short clips where “real” parents discuss their needs and problems, highlighting the issues facing families with children with communication disorders. These clips are done in such a way that viewers feel that they have gained some insight into the lives of these families. These clips are interspersed throughout the programme.
Is problem-based.	The needs and problems highlighted by the parents are addressed during the programme.
Includes outlines of goals.	The programme is divided into sections or topics. At the start of each section an outline is given as to the issues which will be discussed. These goals are listed by the narrator as well as portrayed in writing on the screen.
Provides basic knowledge.	The content on each section is factual and provides parents with clear guidelines that can be followed.
Includes real-life situations.	Not only are “real” parents with real needs and problems used in the programme but real-life footage of children with communication disorders is also used to convey information.
Includes demonstrations.	The principles which are discussed in the programme are not only discussed in theory but also demonstrated with real-life footage.
Reflects back.	At the end of each section the programme once again highlights important information which was provided, reinforcing the message through the use of auditory and visual repetition.

Parent education can take on many *different forms*, including parent workshops, personal consultations, telephonic consultations, videos, pamphlets, posters or written

programmes (Banigan, 1998; Owens, 2001; Gerber, 1998). Examples of other parent education materials which are in use are provided in Table 3.8.

**Table 3.8 Examples of parent education materials**

<b>Materials</b>	<b>Format</b>	<b>Aim</b>	<b>Content</b>	<b>Target population</b>
Ready, steady ...read baby (Louw & Kritzinger, 2003)	pamphlet	informing parents of the importance of as well as how to encourage emerging literacy skills	<ul style="list-style-type: none"> <li>• the importance of and foundations for emergent literacy development</li> <li>• what children learn from early reading</li> <li>• what parents can do to assist emergent literacy development</li> </ul>	parents of children who are between birth and five years of age
Kliniek vir hoë risiko babas (Kritzinger, 2001a)	pamphlet	informing new parents of available early intervention services	<ul style="list-style-type: none"> <li>• risk factors</li> <li>• available early intervention services</li> <li>• contact information</li> </ul>	parents with infants in the NICU
How to talk to your baby (Kritzinger, 2002a)	pamphlet	informing parents of ways to interact with infants	<ul style="list-style-type: none"> <li>• motivating the importance of early interaction</li> <li>• guidelines on how to interact</li> <li>• examples of phrases to use</li> </ul>	parents with new born infants
Stimulasie van vroeë spraak-, taal- en luistervaardig-hede by babas (Kritzinger, 2001b)	pamphlet	informing parents of ways to interact with infants	<ul style="list-style-type: none"> <li>• guidelines on how to interact</li> <li>• guidelines on identifying the opportune moments for interaction</li> <li>• other ideas for infant stimulation</li> </ul>	parents with infants in the NICU
Newborn babies need more than milk (Kritzinger, 2002b)	poster	informing parents of ways to stimulate their infant's development	<ul style="list-style-type: none"> <li>• motivating the importance of early interaction</li> <li>• guidelines on how to interact</li> <li>• ideas for infant stimulation</li> </ul>	parents with new born infants who are at-risk for communication disorders due to socio-economic factors
Kangaroo mother care (Kritzinger, 2001c)	poster	informing new parents of the uses and benefits of kangaroo mother care	<ul style="list-style-type: none"> <li>• a description of kangaroo mother care</li> <li>• the benefits thereof</li> <li>• how to use the method</li> <li>• when to stop using the method</li> </ul>	parents of premature or low birth weight new born infants

**Table 3.8 Continued**

<b>Materials</b>	<b>Format</b>	<b>Aim</b>	<b>Content</b>	<b>Target population</b>
Communication skills in children with Down syndrome (Kumin, 1994)	book	informing parents of children with Down syndrome on communication development and the stimulation thereof	<ul style="list-style-type: none"> <li>• activities for stimulating the precursors of language</li> <li>• activities to be used at the 1, 2 and 3 word stages of development</li> </ul>	parents of children with Down syndrome who are between 0 and 3 years of age
Parent articles for early intervention (Klein, 1990)	book	informing parents on all relevant areas of development	<ul style="list-style-type: none"> <li>• 12 short articles providing information on topics such as motor, communication, emotional, social, feeding and cognitive development</li> </ul>	parents with children who have physical disabilities
Best beginnings: helping parents make a difference through individualized anticipatory guidance (Hussey-Gardner, 1999)	programme	guidelines on what to expect of their child's development	<ul style="list-style-type: none"> <li>• information on development within a variety of areas, including behaviour, expressive language, receptive language, feeding, motor and social</li> </ul>	parents of children who are between 0 and 3 years of age
Hickory dickory talk (Johnson & Heinze, 1990)	programme	guidelines on stimulating language development	<ul style="list-style-type: none"> <li>• information on and techniques for the stimulation of all aspects of language</li> </ul>	families with children between 0 and 3 years who are at high risk for communication disorders
It takes two to talk (Manolson, 1992)	programme	practical ideas for stimulating communication development	<ul style="list-style-type: none"> <li>• provides guidelines on the use of games, music, books and art to stimulate development</li> </ul>	for parents of infants who are on the following levels: reflexive, explore and imitate, sounds and gestures or words
Making sense of my world (Bailey, 1998)	video series	guidelines on stimulating normal development	<ul style="list-style-type: none"> <li>• provides a description of general developmental milestones</li> <li>• includes ideas for stimulation</li> <li>• a series of 4 videos covering development at 3 month intervals</li> </ul>	for parents of normally developing infants



**Table 3.8 Continued**

<b>Materials</b>	<b>Format</b>	<b>Aim</b>	<b>Content</b>	<b>Target population</b>
Speech and language development in young babies (Popich, 2001)	video	guidelines on stimulating speech and language development	<ul style="list-style-type: none"> <li>• provides information on normal speech and language milestones</li> <li>• highlights possible risk factors that may influence development</li> <li>• provides guidelines on the stimulation of speech and language development</li> </ul>	for parents of normally developing infants and for those concerned about possible risk factors
HELP...at home: activity sheets for parents (Parks, 1998)	activity sheets	guidelines and activities for stimulating different areas of development	<ul style="list-style-type: none"> <li>• guidelines on positioning</li> <li>• activities for the development of cognitive, language, motor, social and self-help skills</li> </ul>	for parents with children with disabilities between 0 and 3 years

As displayed in Table 3.8 parent education materials are available in a variety of different formats. The choice as to the most appropriate format must reflect the needs of the community which is being targeted. Rural communities without access to electricity, and with high rates of illiteracy may benefit more from a workshop while developed communities with a highly educated, mostly working population, may find something that they can use in their own time such as a pamphlet, book or video better meets their needs. Furthermore, the aims of the programmes will also affect the choice of format. In an education programme which aims to make parents with premature infants aware of the advantages of kangaroo mother care (Payne, 2001), a pamphlet that is cheap and easy to distribute and which does not require a lot of time and effort to read on the part of the parents, may be the wisest choice of format. However, if the aim is to train caregivers in techniques for stimulating the communication development of infants in day care centres, then the use of something more substantial than a pamphlet, such as a book or a video would be necessary. Videos are a popular method of instruction with adult learners as they provide a means of including practical demonstrations (Cybercollege, 2002). The format and the aim of the programme will, therefore, determine the amount and type of information included.

Those programmes which aim to educate parents about normal communication development and the role of the parents in facilitating early development in order to prevent communication disorders fulfil a crucial role (Banigan, 1998). The provision of information about normal communication development and stimulation is an important form of primary prevention (ASHA, 1991), that has proven to be highly successful (Gerber, 1998). Although there are various programmes available, most are developed internationally, making them less appropriate for meeting the needs of South African communities. Furthermore, few address the issue of the prevention of communication disorders.

Parents are frequently the first to identify a communication disorder in their child (Kritzinger *et al.*, 2001). It is therefore also important to inform parents of the risk factors for communication development as this may assist parents in identifying possible problems early on. However, a programme for the prevention of communication disorders should not only describe normal development and the risk factors which could impede a child's progress but should also focus strongly on factors promoting resilience in infants. This would reflect a focus on the promotion of health and communicative wellness (Gerber, 1998; White Paper on Integrated National Disability Strategy, 1997), which would empower parents with the necessary knowledge to anticipate their infants' development at each stage and will also encourage parents to focus on the positive. In recognition of the basic tenets of ECI service delivery, which recognise the importance of providing family-centred services (Madding, 2000), parents should also be included in the decision-making process when determining the content of a tool which aims to educate parents and prevent communication disorders in a community.

Speech-language therapists need to be involved in educating parents and promoting public awareness regarding the prevention of communication disorders (Billeaud, 1998). However, prevention programmes which aim to prevent communication disorders by educating parents do not necessarily have to be run only by speech-language therapists. Although speech-language therapists should aim to be involved, at some level, in prevention and education programmes within the communities in which they work, the use of transdisciplinary teams in the prevention of communication disorders is recommended (Hugo, 2003). In this way more families

can be reached and the prevention programme is likely to yield effective results. Speech-language therapists should disseminate information on the prevention of communication disorders and participate in trans-disciplinary prevention teams (Hugo, 2003). Transdisciplinary teams have been identified as the preferred means for the early identification of communication disorders (Kritzinger *et al.*, 2001) as well as for the prevention of communication disorders (Hugo, 2003).

An important underpinning for parent education programmes is the fact that programmes should meet the criteria of being culturally sensitive (Widerstrom *et al.*, 1997). Any programme which is implemented should reflect the beliefs, perceptions and values of the community at whom it is targeted (Lowenthal, 1996; Madding, 2000). This can be achieved by involving the community in the development and implementation of the programme, meeting the needs of the community not only in terms of format and content but also in terms of times and venues.

### **3.7 CONCLUSION**

Focusing on the prevention of communication disorders concurs with international trends which reflect a move from tertiary prevention towards secondary and ultimately primary prevention (Gerber, 1998). There is also a growing awareness of the importance of focusing on communicative wellness and the promotion of normal development, highlighting the need for the identification of not only risk factors but also factors increasing resilience (ASHA, 1991; Werner, 2000; Wissing & van Eeden, 2002; Klass, 1999). Legislation mandating prevention programmes such as the implementation of infant hearing screening is also in place in many developed countries internationally (Joint Committee on Infant Hearing, 2000).

South Africa has position statements which support such preventative actions but there is, unfortunately, no legislation supporting it to date. The South African government has put certain programmes for the prevention of communication disorders in place but these programmes are insufficient and professionals need to become increasingly involved in prevention efforts in order to prevent as many communication disorders as possible.

Although there is a definite need for more communication related prevention programmes, the application of uniform measures across all communities will not be effective as individual communities have unique risks, strengths and needs. In an effort to meet community needs regarding information on communication development family-centred, culturally sensitive, communication-related prevention programmes should be established in South Africa. This would be both financially viable and in agreement with the latest trends in prevention.

### **3.8 SUMMARY**

This chapter views the prevention of communication disorders by comparing international trends with the apparent needs within the South African context. Issues relating to the different levels of prevention, the identification of disorders, as well as factors influencing the risks for and resilience from developing communication disorders, are highlighted. Principles and strategies for the prevention of communication disorders in South Africa are described, creating a framework within which education as a prevention strategy is emphasised.