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The effect of caregiver training on time-use of children living in residential care facilities

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2. Chapter Two: Literature Review

This literature review will consider occupation as described in the Occupational Therapy Practice Framework II (OTPFII). The effect of occupation of children linked to the theories of development and the debate on factors playing a role in early childhood development will be discussed. The effect of the environment and specifically the social context in residential care facilities will be reviewed with emphasis on primary care-givers. The temporal context will be explored in terms of the activities in which children in residential care facilities participate, in relation to patterns of time-use.

The role of intervention programmes related to caregiver training and the effect of these programmes as well as the role of occupational therapy in relation to this type of intervention and how these programmes should be evaluated is also considered.

2.1. Introduction

The American Occupational Therapy Association (2008) published the Occupational Therapy Practice Framework: Domain and Process 2nd Edition in 2008 (OTPFII). This framework provides a basis for the conceptualization of occupational therapy in the 21st century and provides the structure for this research (1).

The most basic and fundamental beliefs of occupational therapy is that man is an occupational being (1) (15) (16). Wilcock and Townsend (2008) stated that

> "*All people need to be able or enabled to engage in the occupations of their need and choice, to grow through what they do and to experience independence or interdependence, equality, participation, security, health, and well-being" **(***p625***)*** (1).

As occupational therapists, our fundamental understanding of health and well-being is bound to the participation and engagement in occupation (1) (15) (19). Occupation has been defined in many ways over the years, but comes down to all the many activities that an individual may engage in throughout life that have meaning, provide satisfaction and fulfil the requirements of society. Active choice by an individual around occupations is an important component in providing meaning (1) (15) (16).

Children, too, are occupational beings, who initially are dependent on others for their involvement in activities. Children have as much need for meaningful participation in occupation as adults. Indeed it is this meaningful participation in occupation, guided and facilitated by adults, that underpins and encourages childhood development (16) (17).

As children grow and develop, they are being moulded and prepared to take up all the roles and occupations that an adult within their society would both be expected to do as well as enjoy or desire. Therefore, development encompasses much more than just the maturation of the neurological, emotional, cognitive, behavioural and physical systems. Rather, it refers to the functional outcomes of the interaction between maturation in the child (body structures, body functions and performance skills as defined in the OTPFII) and the child's environment including the physical, social and temporal contexts in which this development occurs (16) (17).

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2.2. Development and Developmental Theories

Development can be defined as

> "*the processes by which infants mature and gain skills to become fully functional adults" (p23)* (16).

The process of development has been researched by theorists from a variety of fields (16) (17). Over the years theorists have attempted to explain the process of development, particularly how it occurs and why it may differ in individual children (16). In occupational therapy, the emphasis on development has stemmed from a need to ensure that children grow into adults able to participate in all the occupations of their choice as well as expected by society without any limitations or restrictions. To achieve this, children need to engage in appropriate activities at appropriate stages during their lives, to ensure development of competencies in age-appropriate occupations (16) (17).

Early developmental theorists considered the first few years of life as absolutely crucial and were of the opinion that any deviation at this stage would result in life-long problems (16) (20). The more accepted current view, however, is that development continues throughout a person's lifetime and that later experiences and growth can mitigate poor early development. This is in part due to the fact that more recent brain research has shown that the human brain retains its capacity for plasticity (the ability to reorganize itself) and adaptability well into adulthood (20) (21) (22).

Therefore, early childhood development is not an all or nothing process. If a child does not receive the necessary input and stimulation in early childhood, that does not mean that the child is inevitably doomed to poor outcomes later in life (21) (20) (22) (23). More and more research is pointing to resiliency rather than the presence or absence of developmental delay in determining future outcomes. This stems from the observations that some children growing up in adverse circumstances overcome these circumstances while others do not (20) (24) (25). However, despite the change in emphasis on the importance of early childhood development, it is still accepted that appropriate early development is important as the foundation for later functioning (20).

Current theories of development also emphasize the dynamic relationship between genetics and maturation of the nervous and muscular systems (the body structures and body functions), and the environment and human experience in shaping infants' development (20) (21) (22). This has resulted in a new conceptualization of what constitutes normal development. Development is no longer understood as a linear progression of skills acquired in a typical pattern, but rather that many different patterns of development may occur within a normal population depending on the unique interplay between an individual's genetic and biologic function and their experiences within their environment (20) (22).

This makes the definition of “normal” development more difficult, as it does not consist of a clear cut linear progression of developmental outcomes. However, it allows for the fact that children may achieve developmental goals in many different ways and under many different conditions (20) (23) (22). This has serious implications for the interpretation of developmental delay in early childhood and the need for intervention. The decision to intervene in a child’s life is now dependent on understanding the interaction of a number of complex factors, including not only the

maturation of body structures and functions, but also the physical, social, temporal and cultural contexts that surround the child.

Occupational therapists have, however, welcomed this shift in the definition of normal development. This is because occupational therapists define “normality” in terms of an individual’s ability to function within the roles and demands of everyday life without limitations or undue emotional stress, either on the individual or those surrounding him (1) (15) (19). Therefore, occupational therapists understand that children may be able to fulfil a developmental task in many different ways and that every child’s developmental trajectory will be unique. The role of the occupational therapist is to recognize the myriad of factors (both internal such as body structures, functions and performance skills as well as external such as environment) that may place a child at risk and to provide opportunities which allow children of differing skills and abilities to reach their full potential and participate in all aspects of life (1) (16).

2.3. Factors affecting Early Childhood Development

As the emphasis on the importance of early childhood development has changed, so too has the understanding of the factors that influence it. In the history of developmental theory, the debate of nature versus nurture has raged fiercely, with scientist and theorists vacillating between theories that assert nature (genetics and biology - body structures and body functions) to be the most important factor in development and those that assert nurture (environment and context) to be more important. Recent literature has moved towards a more integrative viewpoint, stating that both nature and nurture are important components of development. The complex interplay and interaction between both genetics and biological function, and environmental factors influences the developmental trajectory (20) (21) (22) (16).

Recent research has shown a very real link between environment and biology. A child's experiences and behaviour have the potential to affect the timing of gene activation and expression (the actual production of proteins that make neuronal growth and synapse formation in the brain possible) as well as affecting neurophysiology and neuro-endocrinal regulation. These biological processes, in turn, have profound effects on the development of neural circuitry and neural connectivity, which again affects the development of behaviour and skills (20) (21). This cyclical interaction is extremely complex and eventually results in a unique developmental trajectory for each individual child (20). It is the role of the occupational therapist to promote this unique developmental trajectory (16) (26).

There is no doubt that certain inherent biological factors can play a definitive role in causing developmental delay. Genetic abnormalities (e.g. Down syndrome) and neurological disorders resulting from brain damage (e.g. cerebral palsy) are well documented to cause developmental problems. Yet even in these biologically based disorders, there is acknowledgement of the importance of the interaction between biology and the environment in order to achieve the best possible developmental trajectory (27) (6).

Thus controversy, having been reasonably resolved in the nature versus nurture debate, has now shifted to which environmental contexts are the most important influences on development. (23)

2.3.1. Environment

> "*Contexts and environments affect a client's accessibility to occupations and influence the quality of performance and satisfaction with performance."(p646)* (1).

There is controversy in the literature regarding the definition of an environment which is effective in promoting child development.

This has particularly arisen out of the application of animal research into the effect of enriched environments on brain growth to humans (23). There is very little empirical evidence to show that an enriched physical environment has any long-term effect on human development, despite claims of success from many early intervention programmes. This is because no-one is quite sure how to define an enriched environment for a human being (23) (20) (22).

However, on closer examination of the animal studies it is possible to draw some conclusion about deprived environments. So called "enriched" environments in animal studies were in reality merely reproducing the stimulation-rich environment that animals would find within their normal habitats. These animals, however, were compared to animals being kept in environments deprived of these stimulations. Scientists agree that environments that are deprived of the many normal experiences of a species can cause poor brain growth, which can be detrimental to development (20) (23).

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It would appear then that only very broadly defined "*species-specific stimulation"* can be conclusively associated with developmental outcomes (23). Naturally such carefully controlled research cannot be conducted on human subjects, but there seems to be reasonable confidence in the scientific world that this principle is also applicable to human development (22) (23) (21). This is backed up by anecdotal cases of children growing up in extreme circumstances of deprivation who don't develop human specific skills, such as language (23). It is, therefore, important to look at the characteristics of an environment that would allow the occupational therapist to classify it as a deprived environment for a child.

The OTFPII classifies environmental contexts as either physical (the natural environment, the built environment and the inanimate objects that surround the child) or social (refers to the presence of other humans and human organizations or groups within the child's experience and includes the experience of relationships) (1). The OTFPII also makes provision for temporal, personal and virtual contexts that are less tangible than the physical and social contexts, but still provide the background to a person's daily functioning and can be considered part of the overall environment that surrounds and affects the person (1) (15).

2.3.1.1. Physical Context

Human development can be affected by numerous factors in the physical context. Adequate health and nutrition are two of the most basic requirements for normal development and are generally dependent on adequate access to resources such as food, drinking water, a clean environment and a lack of overcrowding. Adequate nutrition is necessary for physical growth and to provide the energy and impetus to move and participate in occupations that will drive development. Similarly, health also plays an important role in facilitating development. Physical contexts which lead to acute and chronic diseases, such as diarrhoea or tuberculosis, can also negatively

affect children's energy levels and internal drive to participate in developmental activities and thereby impede normal development. Due to adverse physical contexts children may spend prolonged periods unwell or in hospital, which can be considered a deprived environment and will further negatively affect their development.

Beyond the access to good nutrition and a healthy environment, the role of the physical context in development seems to be of less importance than the social context. The quantity and quality of objects within the physical context (such as the presence of toys) does not to play a large role in determining developmental outcomes. Children from a variety of physical environments, as long as they are healthy and well-nourished, manage to achieve appropriate development. However, it is widely believed that the social context together with human interaction forms the most influential component in the experiential learning of a young child (20) (12).

2.3.1.2. Social Context

The social context is referred to as the socio-emotional environment by some authors. Emotion has a strong influence on brain physiology and plays an important role in organizing and regulating brain development. Emotion also forms a key part of human relationships and interactions. These relationships and interactions will create the social context that is vital to brain growth and development. Therefore the social and emotional aspects of the environment cannot be separated (20) (22) (21).

Attachment theory was developed around the observation of young children with their primary caregivers and is today one of the most important theories regarding the influence of the social context and human interactions on development (28). The

basic premise of attachment theory is that young children must form secure bonds with their primary caregivers in order to develop the secure base from which they can explore the world. Without this secure bond and subsequent secure base from which to explore, young children are unable to develop the appropriate emotional security and maturity that underlies all normal development and particularly long-term mental health (20) (12). This attachment is dependent on the manner in which a caregiver interacts with an infant or toddler (28). In order to develop a secure attachment, young children need interactions with a relatively stable group of a few warm, caring, responsive adults (12) (21) (28).

McCall, Groark, Nikoforava, Muhamedraminov, Palmov, and the St Petersburg-USA orphanage research team (2009), in a meta-analysis of correlation studies done on attachment, found that secure attachment in infancy had the ability to predict social and cognitive development in children in later years (12). If young children have predominantly positive experiences within their interactions with other humans, it is likely that they will form positive views not only about themselves as competent beings, but also about the environment as a safe place and the availability and reliability of others should something go wrong (12) (21) (28). This encourages further exploration and learning within the environment, which encourages good development (21) (28). When an infant or toddler is faced by a social context that does not include this stable group of responsive caregivers, secure attachment cannot take place (21). This can have a profound effect on a child's long-term development and insecure attachments are often linked to problematic behaviour (12).

If the social and emotional experiences are predominantly negative, not only will young children develop negative views regarding their own competence, safety of the environment and the trustworthiness of others, but regulation of brain physiology and

neuro-endocrinal function will be disrupted by prolonged stress reactions. This disruption interferes with basic brain development by interfering with neuronal growth and the formation of synapses. This leads not only to poor development, but can stunt physical growth (12) and lead to poor health in later life due to damage to the immune system. It is therefore of great importance that all children are surrounded by a social context that will promote their development and health (20) (21) (28).

Thus the presence and quality of interactions between children and their caregivers are a key factor in determining the quality of the environment and thus are a key influence in the regulation of brain physiology, development and ultimately a child's developmental outcomes (20) (21) (14). Indeed, although there is much debate around how much influence primary caregivers and their parenting styles have over the individual developmental trajectories of their children, there is broad consensus that not having any primary caregiver at all is definitely detrimental to development (20) (22) (21) (28).

Moore (2002) reviewed recent developmental literature and constructed a list of what could be deemed the most important qualities of an environment (20). These are the following:

- *"close and ongoing caring relationships with parents or caregivers*
- *adults who recognize and are responsive to the particular child's needs, feelings and interests*
- *protection from harms that children fear and from threats of which they may be unaware*
- *clear behavioural limits and expectations that are consistently and benignly maintained*
- *opportunities and support for children to learn new skills and capabilities that are within their reach*

- *opportunities for children to develop social skills through regular contact with a range of adults and other children*
- *opportunities and support for children to learn how to resolve conflict with other cooperatively*
- *stable and supportive communities that are accepting of different families and cultures" (p10-11)* (20)

In a review by McCall et al. (2009) of twenty different studies predominantly on home-reared children found that responsive parenting was the most important aspect of the social context that led to change in young children (12). Responsive parenting consists of a primary caregiver (or small, stable group of caregivers), who have the following characteristics:

- are able to react quickly and appropriately to a child's expression of needs (contingency),
- are able to provide emotional support to a child by being warm and caring towards that child; by providing comfort and by encouraging and moulding the child's emotional expression,
- able to support a child's focus in an activity and thereby create learning opportunities based on the child's needs and interests at that precise moment,
- and be able to stimulate the child's language development in an appropriate manner by providing input that is developmentally appropriate (12).

The two studies above support the concept of a responsive caregiver described in attachment theory and have been mentioned by numerous other investigators into parenting and child care (14) (21). Caregivers are, therefore, required to do more than just provide for children's physical needs. They must also offer support and love in the form of touch, face-to-face contact and appropriate stimulation (20) (12) (21). It

is interesting to note that most parenting systems in the world encourage these basic premises, despite differences in culture and ways of raising children (21).

2.3.1.3. Temporal Context

Participation in occupation takes place within time and time can have an effect on the variety and number of activities as well as the routines and patterns of occupational performance. Time in life influences what sort of occupations people participate in, e.g. children are expected to participate in play and education, while adults are expected to participate in leisure activities and work (1) (16). The time of day can also exert an influence, e.g. sleep is expected at night, work during the day and leisure activities at the weekend). The availability of time influences the types of occupations in which people choose to participate. Occupation is, therefore, inextricably linked to time (1).

Although most studies on the social context do not explicitly mention the temporal context or time, it is implied in the concept of responsive parenting. Caregivers who do not spend time with their children will not be able to develop the responsiveness that allows them to accurately identify an infant or toddlers needs despite limited language, as described by both Moore (2002) and McCall et al. (2009) (12) (20). It is also necessary for caregivers to focus their attention on their children and dedicate time to them if they wish to create appropriate learning opportunities and support their children's development (21).

Primary caregivers, therefore, are the most important determinants in the creation of an environment that is conducive to early development. Thus, an environment that

lacks these characteristics of warm, responsive care-giving and a variety of human interactions over sufficient periods of time can be described as deprived. This is why the loss of a primary caregiver is so devastating (20) (22) (21).

2.3.2. Environment in Residential Care Facilities

Residential care facilities have been founded around the world to care for children who have lost their primary caregivers. These facilities have long been associated with detrimental outcomes in development. The negative consequences of growing up in a residential care facility have been well documented and include the following problems:

- Severe developmental delay (12) (29)
- Attachment difficulties (12) (30) (25) (29)
- Cognitive impairment (12) (25) (24) (29)
- Attention difficulties with hyperactivity (12) (31) (32) (25) (29)
- Quasi-autistic behaviour (12) (25) (29)
- Lack of appropriate skills transfer so that children can grow into well-functioning adults (4) (5)
- Increased exposure to illness (29)
- Physical and brain growth deficiencies (12) (29)

It is, thus, important for occupational therapists to investigate what it is about residential care facilities that turns them into deprived environments that lead to poor developmental outcomes.

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There are a number of factors that can play a role in the poor developmental outcomes admitted to these facilities. Firstly, children admitted to residential care facilities form a high-risk population and have experienced some form of trauma before admission, be it abandonment, the loss of a parent or the removal from their families (4) (5) (12) (14) (31). They may have experienced abuse or neglect and have numerous predisposing factors that are all risk factors for poor childhood development. These are very vulnerable children and it is possible that their pre-existing problems may be the cause of some of the problems mentioned above (4) (5) (14) (12) (31).

Developmental theory suggests that these vulnerable children should be able to overcome their difficulties if placed in a supportive environment (23) (20) (22). Literature indicates that developmental delay and other emotional and cognitive problems persist in children placed in residential care facilities (24) (32) (30). This suggests that many of these facilities do not offer an ideal environment for vulnerable children. Therefore factors other than only individual children's histories and pre-admission problems must also be influencing the development of these children.

2.3.2.1. Physical Context in Residential Care Facilities

Literature produced in the 1990s on children living in residential care facilities in Eastern Europe placed an emphasis on the poor nutritional and health status of these children and the effect on their development (29). If good health care and adequate nutrition are missing from the environment, already vulnerable children within that environment will be seriously disadvantaged in terms of attaining normal development. However, in recent years, this problem seems to have decreased substantially throughout the world. Residential care facilities offering care to vulnerable children have all improved the physical environments within these facilities

and the standard of physical care to adequate levels. Thus health and nutrition no longer seem to be the dominant reason for poor development within these facilities (12) (13) (2). Although there is a dearth of literature on South African residential care facilities, two audit studies done recently in the country also indicated that physical environments, standards of physical care and levels of health and nutrition in South African facilities are generally acceptable (4) (5).

2.3.2.2. Social Context in Residential Care Facilities

There is great emphasis in the literature on the nature of the relationships between young children and their caregivers and the manner in which caregivers respond to young children's needs and feelings as a definitive component of an environment that either promotes or hinders normal development (12) (20) (21) (28). It is, therefore, important to examine the role of the caregiver within the residential care facility.

Most literature reporting on care giving practices within residential care facilities describe caregivers as cold, clinical and sterile, who do not interact with the children in their care and who carry out tasks requiring contact with the children as quickly and efficiently as possible (12) (33) (34) (35). This can be considered a form of environmental deprivation as there is a paucity of human interactions necessary for normal development. Therefore, although caregivers may be caring for a child's physical needs appropriately, the emotional quality of these interactions, which is important for attachment and bonding, is missing.

Care-giving within residential care facilities is most often organized around rotational shift work, with caregivers working many hours in a row, but then having a fair quantity of time off in-between shifts. Caregivers may also rotate between different

units within a facility. This does not encourage continuity of care and as a result, children may see many different caregivers during the course of a week or month further impacting on the opportunities for bonding to take place. McCall et al. (2008) reported that due to rotation and high staff turnover, a child may see 50 – 100 different caregivers before the age of two years (12)! Furthermore, in some cases caregivers have admitted to explicitly avoiding forming bonds with children in the facility as it is then too painful for them if and when those children leave, or they are moved to another unit (12) (13).

Finally, units within residential care facilities are seldom organized into family units with children of varying ages and abilities living together. Children are usually grouped together according to age, such as all the babies together. Within a family setting, older children can help provide the necessary social context for younger children relieving the primary caregiver of some of the care-giving burden. Siblings also allow children to have a variety of social interactions. Within the residential care facility, however, children lose these extra opportunities for social contact and thereby development (31) (25) (12) (29). The result of these care-giving practices is that children do not receive much individualized care and are not afforded the opportunities of interacting and forming close relationships with their caregivers.

Reported studies on time use in residential care facilities indicate that caregivers are not providing the kinds of social and emotional interactions necessary for good development in young children to occur (2). Tirella, Chan, Cermak, Litvinova, Salas and Miller(2008) investigated the time-use patterns of infants and young children living in residential care facilities in Murmunsk, Russia, where 138 children between the ages of one month and three years eleven months from three facilities were observed during the morning from breakfast time to just after lunch time (5 hours in total) (2).

They observed that most of the interactions taking place between caregivers and children occurred during routine care giving activities (feeding, dressing, bathing,). Caregivers performed these activities as quickly as possible and did not use this time to show affection or make physical contact with the children. Caregivers were very rarely observed to be playing with children or supporting children in their play activities. Language use and vocalizations were also very limited with caregivers only spending 10% of their time actually talking or vocalizing to the children under their care (2). This indicates that the quality of the interactions between children living in this facility with caregivers was poor.

The social context of the environment is very closely linked to the temporal context. Interactions and bonding between caregivers and the children in their care can only take place if caregivers spend time with these children. Contingent and responsive care-giving is dependent on knowing and understanding the individual child in order to anticipate needs. Therefore the quantity of time (the temporal context) a caregiver spends with any one child is as important to development as the quality of interaction in that time (the social context).

2.3.2.3. Temporal Context in Residential Care Facilities

Tirella et al. (2008) also found that infants living within Russian facilities spent on average 65% of their time alone, while toddlers spend 43% of their day alone (2). This is time spent without any interaction with others in their environment. This finding becomes even more disturbing when considering that the observation period for this study was between 08:00 and 13:00, a period when all the children are awake and active. Furthermore, they found that both infants and toddlers spent up to 20% of their time in non-meaningful, developmentally inappropriate activity described as

just sitting or standing staring into space, repetitive self-stimulatory activity such as rocking, or unproductive play such as repetitively banging an object.

This study supported the earlier findings of Muhamedrahimov, et al. (2004) and Danhauser et al. (2005) who indicated that infants and toddlers in residential care facilities in St. Petersburg, Russia and Romania spend even more of their time alone and in non-meaningful activity (33) (7). Muhamedrahimov reported that infants and toddlers between the ages of three months and ten months spent on average just 19 minutes in a three hour period in contact with a caregiver (this equates to just 10.6%) (33) and Danhauser et al. (2005) reported that infants and toddlers spent 70% of their time during the day alone (7). Although a study in India did not explicitly measure time use, they also commented on the long periods of time that infants and toddlers spent alone (34). All the studies emphasized that infants were more likely to be left alone during the day than any other group of children and that as children got older, they received more attention (33) (2) (36) (7). There is no published research on time use patterns of children living in residential care facilities in South Africa.

Again there are care-giving practices, fairly common throughout residential care facilities around the world, that seem to be contributing to the problems mentioned above (5) (33) (14) (31) (25) (13). The first factor that can influence the quantity of time a caregiver has to spend with any individual child is the total number of children any one caregiver has to care for. Reported caregiver-child ratios varied greatly between different facilities, but not one study reported a ratio of less than 1:6 and one study even reported a ratio as high as 1:20. This means that caregivers have limited time to spend with one child as they have a large number of other children to care for too. Most facilities group children together according to age and ability rather than creating more family-like units with children of multiple ages and abilities living

together. This practice may also put extra strain on a caregiver as all the children in her care need the same attention at the same time. Caregivers cannot leave an older child to feed himself while attending to an infant, or spend time playing with a toddler while an infant sleeps.

Many facilities make use of regimented routines to ensure that a basic level of physical care is maintained. This means that all the children are fed, bathed, changed, dressed and played with at the same time. Coupled together with the fact that children are grouped according to age, this may mean that a caregiver needs to feed six toddlers in one hour. Not only does this practice greatly impede a caregiver's ability to provide contingent and responsive caring that is based on a child's individual needs, but it also places enormous strain on the amount of time she can spend interacting with any one child during these activities (4) (12).

Finally, many facilities expect caregivers to do tasks outside of direct child care, such as folding laundry, which uses up even more of their time. As a result, caregivers need to work quickly and efficiently to ensure that they fulfil all their job requirements.

The net result of all these care-giving practices is that both the social as well as the temporal context of the residential care facility can be considered deprived and therefore detrimental to development. Children living in these facilities neither spend enough quantity of time with their primary caregivers, nor is the little time they do spend with their caregivers of sufficient quality to allow them to form secure attachments necessary for normal development. This can prevent them from forming a view of themselves as competent and worthwhile beings, and therefore the impetus and drive to explore and participate in occupation can be diminished. These practices do not encourage sustained interactions between caregivers and children,

and any intervention programme must take these characteristics of care into account (29) (12) (31) (25).

From this discussion it is clear that it is the lack of adequate social interaction provided by caregivers that is a detrimental environmental factor in residential care facilities.

2.3.3. Environments in Child Care Facilities in South Africa

In South Africa, a large number of children are losing their primary caregivers as a result of the HIV/AIDS pandemic sweeping the country. Furthermore researchers have suggested that high levels of poverty may lead to abandonment of children (29). As a result, more and more of South Africa's children find themselves growing up in residential care facilities, rather than in nuclear family units (37) (5).

Two audit studies done recently on residential care facilities in South Africa have found no coherent approach to providing care for orphaned and abandoned children. A wide variety of facilities exist ranging in size, funding and resources, availability and educational level of staff and in set-up, which all results in a wide range in the quality of care provided (4) (5). However, in all these different facilities, good care was almost universally defined as the provision for the child's physical needs, with the emotional, cognitive and developmental needs of the child receiving very little attention (4) (5). As a result, the physical care of these children, i.e. health and nutrition together with hygiene, clothing and shelter, was generally good. It was noted that care giving in these facilities was similar to those reported elsewhere in the world – devoid of the mothering and loving, and the human interactions shown to be

so important in developing good attachments and promoting normal development. Caregivers were cold, clinical and approached care giving as a job to do as quickly and efficiently as possible (4) (5).

A study conducted at one residential care facility in South Africa in the late 1990s also underlined the problems in caregiver-child interactions as a possible cause for some of the developmental problems reported in institution-reared children. Griese and Dawes (1999) reported that caregivers tended to give commands to children rather than respond to and interact with children, preferring a supervisory role to an interaction role (14). They also reported that care-giving happened in a very brisk, business-like manner and that as a result learning opportunities were not created out of everyday occurrences. This is very similar to care-giving practices reported elsewhere in the world. Finally, they postulated that the manner in which a residential care facility is run – referring to rigid management and decision-making structures as well as the routinized manner of care – is a contributing factor to children's developmental delay (14).

Thus residential care facilities have been shown to be deprived environments. This is because there is a lack of interaction between caregivers and children and thus a poor social and temporal context that is so important in development and participation in childhood occupations. Therefore any intervention proposed by occupational therapy to influence the environment must involve the caregivers in residential care facilities.

2.4. Caregiver training intervention

One of the many approaches that occupational therapists use to implement intervention strategies is prevention. The OTPFII defines prevention as

> "*an intervention approach designed to address clients with or without a disability who are at risk for occupational performance problems. This approach is designed to prevent the occurrence or evolution of barriers to performance in context." (p659)* (1)

Tirella et al. (2008) recommended that caregiver training should be considered to address the problems of poor time use by children in residential care facilities reported in their study (2).

2.4.1. Types and Evidence for Effectiveness of Caregiver Training

There is a growing body of literature that supports the effectiveness of training caregivers in a variety of settings. Although there is not an extensive quantity of literature available on training of caregivers in residential care facilities, literature has supported the training of primary caregivers as beneficial to the development of children, both in developed and developing countries. Rhodes and Hennessy (2000), investigating the use of a formalized training programme for caregivers working in child care centres in Ireland, found improvements in caregiver interaction with children and children's development. In their review of studies done in a variety of child-care settings in Ireland, they found that these gains appeared to be present whenever training had occurred, regardless of setting and length of training (38). Powell (1999), when reviewing the effectiveness of early intervention programmes in both the United States and in Jamaica for a United Nations task team, also found that training of primary caregivers had a positive effect on the verbal skills of children as

well as on their overall development. This finding was fairly consistent across different settings and different types of training – although intensity of training did have an effect on the degree of improvement (39).

Three different training programmes have been successfully instituted with caregivers working in residential care facilities who had very little formal training and limited education in Asia, Europe and South America. Two of the studies reported changes in care giving practices, with caregivers becoming more responsive and sensitive to individual children's needs, thereby changing the social context of these children. Reported interactions between children and caregivers increased, but also importantly caregivers were reported to be spending more time actually talking to the infants and toddlers under their care (12) (34). The third study focused on the experiences of the caregivers themselves (13).

When reviewing current literature, it becomes clear that successful caregiver training programmes all have similar characteristics.

2.4.1.1. Theoretical and Practical Training Programmes and Modelling

Three different caregiver training programmes implemented in residential care facilities made use of various combinations of theoretical and practical training.

McCall et al. (2008) instituted a training programme at residential care facilities in St Petersburg, Russia (12). This training programme was focused on teaching caregivers to be more responsive to the children within their facility. Information about how to position and handle children with disabilities, how to play with children

in a developmentally appropriate manner and how to be more contingent and reciprocal in care was taught during training sessions. Once theoretical knowledge had been mastered, trainers worked with caregivers within their units modelling behaviour and giving caregivers opportunities to practice behaviour with the guidance and support of the trainers (12).

A similar caregiver training program was instituted at two residential care facilities in El Salvador. The training program imparted theoretical knowledge about development and stimulation activities and interactions and then offered individual sessions with caregivers to demonstrate these activities and interactions (13). Finally, in India Taneja, Sriram, Beri, Sreenivas, Aggarval, Kaur and Puliyel (2002) reported on the institution of a caregiver training programme focusing on encouraging interaction with children participating in play time. Most of the caregivers participating in this study were illiterate, therefore the programme focused on modelling behaviour for the caregivers to copy (34).

These caregiver programmes were aimed at changing the social context of the children living in residential care facilities. The programmes focused on increasing interactions between caregivers and children as well as improving the quality of those interactions. As new behaviours were expected from the caregivers, all three programmes had a practical side to the training where behaviours could be modelled and practiced. Material was also adapted according to the educational level of the caregivers (12) (13) (34). In India, there was a greater focus on practical training as most of the caregivers were illiterate (34), while in El Salvador, there was greater emphasis on theoretical training as caregivers were more educated (13).

2.4.1.2. Changes to Caregiver Practices and Temporal Context

Only the training programme in Russia attempted to change care-giving practices and thereby make changes to the temporal context within the residential care facility. McCall et al. (2008) coupled their training programme with a change in the structuring of the residential care facility, which focused on smaller, family like groups, replacing rotational shift work with stable working hours for primary caregivers and changes routines. This was to allow caregivers more time to interact and bond with the children in their care (12).

2.4.1.3. Sustainability and Effects of the programmes:

Sustainability of these caregiver training programmes is of vital importance to the long-term success of this form of intervention. All three studies described above acknowledged the difficulties in ensuring sustainability in the context of high staff turnover and wavering staff enthusiasm. Both McCall et al (2008) and Taneja et al. (2002) found the most successful approach to training to be the train-the-trainer approach whereby a permanent staff member at a facility is trained to teach that particular facility's caregivers. This approach allowed for cultural sensitivity (where original material came from other cultural settings) and for continuity of implementation (the trainer could teach any new staff members that should join the facility after the original training has taken place). In Russia, this approach was used throughout the implementation of the programme, while in India, this approach was instituted after the original programme failed to be sustainable (12) (34).

McCall et al. (2008) presented the best and most comprehensive and rigorously tested evaluation of their caregiver training programme (12). Three residential care facilities participated in their project. One facility instituted training as well as changes to the care-giving practices, one facility instituted only the caregiver training

programme without changes to the care-giving practices and one facility acted as a control with no intervention taking place at all (12). The results of this project showed that the most effective way to change the environment within a residential care facility is to both train the caregivers as well as change the care-giving practices of the facility. Groark, Muhamedraminov, Palmov, Nikoforova and McCall (2005), reporting on the preliminary findings of this study, described the change in the residential care facility as the following:

> "*In the post-intervention orphanage environment, there was life, laughter, and emotion!"* (*p104)* (35)

They reported significant improvements in the caregivers' behaviour and responsiveness to infants' and toddlers' behaviour and interactions, particularly during personal management times. Caregivers were both spending a greater quantity of time with the children in their care as well as improving the quality of their interactions with children during this time. There was also a significant change in the behaviour and language of the infants and toddlers in this facility, with children participating in more meaningful activities and making more use of language (12). This demonstrated that both the social as well as the temporal context within the residential care facility had been successfully changed in a manner that supports normal development. These improvements were reported to a lesser degree in the facility where only training had occurred, although this facility still reported improvements in both caregiver as well as child behaviour compared to the facility where no intervention had taken place at all (12). This suggests that the most successful way of changing the environment within a residential care facility is to tackle both the knowledge and skill of the caregiver as well as the manner in which a residential care facility is run (both the social as well as the temporal context). However, in situations where change to the care-giving practices, routines and structure of the facility is not possible, a caregiver training programme can still be

effective in improving the quality of the interactions between caregivers and children and can thereby influence the social context of the facility (12).

Taneja et al. (2002) also found caregiver training focused on modelling behaviour effective in changing the social context of a residential care facility (34). Their results showed children being much more participative in play activities with language use by both caregivers and children increasing significantly. However, these gains were not sustained over the long term and a follow-up study two years later found that many of the gains made initially had been lost due to high rates of staff turnover and wavering staff enthusiasm (36). It is, therefore, clear that once-off training is not sustainable. In India, the training programme reverted to a train-the-trainer approach similar to that used in the Russian study, which they found to be much more effective than the original approach (36).

Swartz (2009) reporting on caregivers' training in El Savador found that caregivers were much more enthusiastic about implementing a stimulation programme and also that caregivers felt more equipped to deal with children's developmental needs after the training (13). Theoretical knowledge about development and stimulation had also increased amongst caregivers. Unfortunately, this study only looked at caregivers' perceptions and the actual implementation of the training by the caregivers within their day-to-day duties was not reported on. Therefore it is difficult to judge whether the training programme made any difference to the daily interactions caregivers had with the children in the facility (13). Furthermore, without a plan to continue training or follow-up training, it is likely that this programme will experience the same problems as the Indian programme in terms of sustainability within the context of staff turnover and enthusiasm (13).

It is clear that training programmes aimed at caregivers have the potential to improve children's developmental outcomes and can be effective in a variety of setting. It is, therefore, worthwhile investing time, energy and resources into developing such programmes. Occupational therapists need to investigate what kinds of training programmes would be most effective within the residential care facility setups in South Africa.

2.4.2. Evaluation of Caregiver Training Programmes

Programme evaluation falls within the review process that all occupational therapists should undertake to ensure effective therapy and is part of the measurement of outcomes, the final step in the occupational therapy process (1). This review process could take many different forms. An occupational therapist may informally measure success against outcomes set at the beginning of therapy. Or a therapist may use standardized measurements (such as standardized assessment tools) to measure progress and success of therapy. Finally, an intervention may be formally reviewed using research methodology in order to determine the effectiveness of an intervention in a reliable and valid fashion (1). In the NPO world, it is becoming more and more important to use quantitative evaluations to justify the cost of programmes to those who fund them (18).

Formalized research review process can make use of a variety of reliable and valid methods in order to obtain data. It is often accepted in the literature that the most reliable and valid method of judging the effectiveness of an intervention is to make use of the random control trial. However, this form of quantitative research is often not practical within the real world outside of the laboratory and often comes together with many ethical considerations (18). Habicht, Victora and Vaughn (1999) suggest a

framework to guide the evaluation of public health programmes (18). Although focused on public health and written very much from a medical perspective, this framework can be applied to the kinds of programmes run by NPOs with other professionals at the helm.

Habicht et al. (1999) suggest that it is important to know what exactly it is that needs to be evaluated and for whom the evaluation is to be done as this will affect the kind of information the review process will collect (18). The review process may wish to look at the performance of the programme, i.e. the provision of the service, the utilization of the service by community members and whether the service is reaching all those it intends to, or the impact of the programme, i.e. is the service bringing about the desired changes within the community. They also suggest that plausibility studies – which use comparison between two groups, but where the criteria of randomization is missing to make the study a true random control trial – are reliable in obtaining reasonable confidence in whether an intervention is effective or not (18). These kinds of studies are often utilized in a variety of situations to determine effectiveness of interventions.

2.5. Summary

This literature review has shown that development is dependent on a variety of factors and can take place in a variety of ways, rather than in a strict linear fashion. The interplay between biological factors and the environment has been emphasized. It has been shown that it is particularly the social and temporal context of the environment that is crucial to normal development and that it is the quantity of time as well as the quality of time that primary caregivers spend with children that allow for the contingent, responsive care-giving that is associated with good development.

Poor early development can be overcome if a child is placed in a supportive, loving environment.

Residential care facilities are caring for a vulnerable group of children that have experienced some form of trauma. Yet residential care facilities are not providing the kind of environment that encourages these vulnerable children to recover from previous developmental difficulties. The physical context of residential care facilities has been shown to be adequate, but it is particularly the social and temporal context that can be described as deprived.

Caregiver training programmes have been shown to be effective in a variety of settings and the most successful programmes consist of theoretical training, practical modelling of behaviour as well as changing caregiver practices.

In the literature, the term social context was used to describe the social and emotional environment surrounding a child, focusing specifically on the quality of human interactions, relationships and bonds within that environment. Within this study, quality of time-use will be used to describe the social context. The term temporal context was used within the literature to describe the quantity of time spent in any activity and in contact with others. Within this study quantity of time will be used to describe the temporal context.