SNOEZELEN THERAPY FOR ELDERLY PERSONS WITH CHALLENGING BEHAVIOR AND DEMENTIA

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Degree Thesis

Human Ageing and Elderly Services

2013

DEGREE THESIS	
Arcada	
DegreeProgramme:	Human Ageing and Elderly Services
Identificationnumber:	11704
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Title:	SNOEZELEN THERAPY FOR ELDERLY PERSONS WITH CHALLENGING BEHAVIOR AND DEMENTIA
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Commissioned by:	Kustaankartano Elderly Care Center

ABSTRACT:

Aim: The study researched into ways of extending snoezelen therapy to the ward and the effect it will have on elderly persons with dementia with challenging behaviors in Kustaankartano elderly care center. There was one research question projected for the study that is :

- What are the effects of snoezelen therapy on elderly persons suffering from dementia with challenging behaviors?

Method: Literature review with deductive content analysis was used for the study. Articles were collected from a reliable data search engines like EBSCO and GOOGLE SCHOLAR. The articles were analyzed and grouped into two main themes;
Challenging behaviors from persons suffering of dementia and the effects of snoezelen therapy, to aid the outcome of the study.

Result: The research found positive results of snoezelen therapy in reducing some challenging behavior in dementia. Consequences of need-driven, dementia compromised behavior (C-NDB) theory that was used, has exposed the need for further research on "need" in dementia care to reduce challenging behavior in dementia.

Keywords:	Snoezelen, Multisensory environment, Challenging behavior, Dementia, Needs and unmet need.
Numberof pages:	50
Language:	English
Date ofacceptance:	28.10.2013

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GLOSSARY

C-NDB – Consequences of Need-Driven, Dementia-Compromised Behavior

NDB- Need Driven Behavior.

HRQoL-Health Related Quality of Life.

1 INTRODUCTION

It is estimated by the world health organization(WHO) that currently 35.6 million people are living with dementia worldwide and the number is projected to be doubled by 2030 and tripled in 2050 (WHO. 2012). Epidemiological researches have also shown that the occurrence of dementia increases with age (American Psychiatric Association, 2000). "The occurrence rate ranges from 1.4% to 1.6% for people with ages of 65-69 years, rising to 16% to 25% for those over 85 years" (American Psychiatric Association, p. 152).

WHO explains dementia as a syndrome- due to disease of the brain, usually of a chronic or progressive nature, in which there is deterioration in cognitive function (i.e. the ability to process thought) beyond what might be expected from normal ageing. It also affects memory, thinking, orientation, and comprehension, calculation, learning capacity, language and judgment. It does not affect consciousness but it alters cognitive function thereby affecting emotional control, social behavior or motivation (WHO 2012).

Researchers have found out that, dementia is a progressive condition that is usually accompanied by functional impairment and challenging behaviors (Martin et al. 2000). The functional impairment and the person with challenging behavior have to be assisted, for the individual to have a good life. The challenging behaviors are usually due to unmet needs and unsuccessful adaptation to residential environment (Stokes, 2000) and variation in physical environment (Bird & Moniz-Cook, 2008) as well as effects of some medication.

It is also estimated that between 20% and 92% of persons suffering from dementia may experience at least one behavioral abnormality in the cause of the illness (O'Donnell et al., 2007). This figures however shows that not all people diagnosed with dementia disease experience challenging behavior but it is widely agreed that majority of persons suffering from dementia experience some abnormality in their behavior which affect their quality of life and those who support them. Challenging behavior is however determined by the circumstances upon which the individual suffering from dementia behaves and how others interpret the behavior that is put up (Osborne et al., 2010. pg.503).

Kustaankartano elderly care center are seeking other alternative care for people suffering from dementia with challenging behavior, of which the completion of this thesis work will provide a good alternative. Literature review is the method that is adopted in the study.

The author upon this study wants to find out the effects of using snoezelen therapy to assist elderly people with dementia in an institution (Kustaankartano) to reduce some of the challenging behavior by providing an environment which is safe, non-threatening and making use of client senses in the name of Snoezelen therapy as an alternative care to reduce medication which frequently have side effects (Schneider et al 2006).

Snoezelen is a type of therapy that was developed in the Netherlands in the 1970s by institution caring for persons with autism, and developmental disabilities. The application of snoezelen therapy has been extended from learning disability and autism to dementia care over the years, because the therapy makes use of the sensorimotor abilities of individuals to their intellectual abilities in a positive and non-stressful environment (e.g. Baker 2001, Hope 1998 & Hutchinson 1994).

Snoezelen consist of placing the individual in a soothing and stimulating environment designed to deliver stimuli to various senses using lighting effects, color, sounds, scents, music. Snoezelen treatment often uses a non-directional approach to facilitate relaxation, individual productivity and wellbeing (Davis & Schofield 1998). The word Snoezelen is a combination of two Dutch words: Doezelen = to doze and Snoezel = to sniff. Consequently, it use implies to provide a restful activity with a more dynamic sensorial aspect (Hulsegge &Verheul, 1987).

1.1 BACKGROUND

This thesis project, Snoezelen therapy for elderly with dementia was commissioned by Kustaankartano elderly care center, to research into how Snoezelen therapy can be extended to the ward and the effect it will have on persons with dementia with challenging behaviors.

There are only few snoezelen rooms for the center and it is sited outside the ward which makes it difficult for most people to experience it, hence the need to extend it to the ward for easy access. There have been other previous researches, on the effectiveness of Snoezelen and Multi-sensory environment for elderly person suffering from dementia to the institution Macharia (2010) and Piipponen (2010).

1.2 Motivation

The author gained the interest of writing about the snoezelen therapy upon doing a project of Arcada University of applied science, termed activities with the elderly (ACTAT) with older people in their homes and institutions. The aim of the project was to provide students with an opportunity to get an insight into how well-being can be promoted by goal-oriented activities based on the needs of the elderly person and how to inspire the elderly in their everyday life. The author did this project with one client who was residing in an elderly care center.

Firstly, the author engaged the client with the playing of zitheroo (i.e. a small instrument with sheet music under the strings) that provided sound like a guitar and also moved the client around the environment for fresh air and conversation. The clients always happen to be saying VALKOINEN HUONE which literally means white room. But because the author's Finnish language level was very weak at that time, he asked some of the nurses the meaning of that and they explained that it was a snoezelen room that clients visited from time to time. The author had a firsthand experience of visiting the place with the client and was amazed how the client happened to enjoy the place and also active. The author discussed it with the head nurse how it went with the client at the

place and she said they are planning to extend it to the ward to make it easily accessible for clients.
When the author found out that the institution (Kustaankartano elderly care center) was offering a thesis project on the topic again but this time for assisting persons with challenging behavior. The author took interest to use other methods that will help the extension of Snoezelen to the ward providing researches and method to support it.

1.3 Aim and Research Question

The aim of the study is to extend Snoezelen therapy to the ward and how the therapy can assist elderly person suffering from dementia with challenging behavior. The study will also discuss some of the stages of dementia that is affecting the elderly population and how snoezelen care can assist in the improvement of life.
The study upon completion will answer the following research question:

- What are the effects of snoezelen therapy on elderly persons suffering from dementia with challenging behaviors?

1.4 DEMENTIA

Dementia is a debilitating condition that is usually characterized by worsening of cognitive abilities. It is also increasingly viewed as bio psychosocial condition which generates from an interaction between neurological, psychological and social factors (Downs & Anderson, 2008). Based on this deduction behaviors associated with dementia are seen as attempts to understand, express psychological or physical needs and also an individual response to cope with the world (Downs et al. 2008).

The world population is ageing and this has contributed to an increase in dementia cases. Age is the most significant risk factor of dementia and other matters such as low activity, obesity, smoking, alcohol use and poor education (Chen et al 2009).

Dementia is a progressive condition that affects all aspects of a person's life such as care, security, health, hygiene, communication and independence (Downs & Bowers 2008).

An increase in dementia population has commensurate with preparation of needs of dementia people in communities, hospitals and care homes (Sturdy, 2009). Although there is an increase in preparation of need in dementia care, aimed at improving the quality of life, there still remain a high number of unmet needs in dementia patients (Franks et al. 2000).

To be able to prepare and cope with the need of an individual suffering from dementia for snoezelen therapy, one needs to know the rate or stage of decline of the disease as well as the sensory ability of the individual. Dementia is usually grouped into stages to help assess the kind of help an individual may need and also to measure the rate of decline of the diseases.

1.4.1 Stages of dementia

There are three stages of dementia that is usually aligned to the decline and the symptoms that in most cases associated with it, being early stage, middle stage and later stages. The stage of the disease also informs of the capability of the person suffering from dementia in snoezelen therapy and the assistance that may be required.

Early stage of dementia: The onset of dementia is very slow and it's very difficult to notice when it actually starts. This phase is normally unnoticed and often confused with characteristics of old age and overwork. During this stage the person may become aware of difficulties, including word finding problems or forgetfulness, appear more apathetic and lose interest in hobbies or activities that once enjoyed, find difficulties adapting to change or learning new things, become more forgetful of recent event or loose memory of recent activity. Upon all these characteristics, they are able to live slightly an independent life with small help required (Jenkins & McKay 2013).

Middle stage of dementia: This stage is advance from the early stage. It disables the person of the quality of independent life by the need of more assistance in daily activities. Some of such problems are forgetfulness of recent event of which a more distant past event seems better but may lack details or fall short of the totality; become more repetitive and confuse one family member with another. Patients of dementia in most cases behaves inappropriately and sometimes use foul language on love ones and care givers. Usually hallucinating and neglectful of hygiene and eating; become distressed through frustration (Jenkins & McKay 2013).

Later stage of dementia: This stage is normally characterized by loss of independence and reliance of assistance in total care and daily activities. It is characterized by inability to remember for even a few minutes; loss of speech and understanding; uncontrolled movements and hallucinating and delirium. No recognition for family members and friends (Jenkins & McKay 2013).

At the moment, some evidence suggest that lifestyle changes such as, reduction or quitting alcohol intake and smoking, exercising the body more, taking antibiotics when needed, socializing can reduce the risk of dementia (Carper, 2011) and also some cause of dementia are treatable such as depression, metabolic disorders and drug abuse (Yousuf et al 2010). There is also evidence that the probability of developing dementia through genetic means is small (Stephan & Brayne 2008).

1.5 CONSEQUENCES OF NEED-DRIVEN, DEMENTIA-COMPROMISED BEHAVIOR (C-NDB) THEORY

This paper used the Consequences of Need-Driven, Dementia- Compromised Behavior (C-NDB) theory, as a theoretical framework to explain the causes of challenging behaviors in dementia care and how snoezelen therapy can assist in reducing some challenging behaviors.

According to Abraham Maslow (1943) a humanistic psychologist, need is a basic entity and people are motivated to achieve this need. Maslow explained that human beings are motivated to achieve certain needs and that when one need is fulfilled, a person seek to fulfill the next one. Maslow grouped the human needs into five fundamental levels in a form of a pyramid. The lower level dealing with physiological need (food, drink, shelter and warmth), whiles the top level was associated with psychological needs: safety need, social need, esteem need and self-actualization.

Schölzel-Dorenbos et al. (2009) however used Maslow's hierarchy of need and theory to discuss the need and unmet need of persons in dementia care in relation to health related quality of life (HRQoL).

Schölzel-Dorenbos et al (2009) discussed that for an individual's suffering from dementia their physiological needs, which is the basic need include the ability to maintain personal hygiene, shelter and feeding. Safety-needs deal with the prevention of harm caused by decreased judgment capacities, wandering, apraxia, agnosia. Social needs deals with the acceptance of the person suffering from dementia in the face of a progressive neurodegenerative illness, which may hinder patient to have social contact that may result in receiving signs of love and belonging. Esteem needs deals with the fear of loss of mastery and independence. Fear of loss of respect or being infantilize due to loss of societal role and cognitive decline. And on top of all these needs, there is also Self-actualization, a 'being'-need, which motivates or drives behavior in the face of cognitive decline.

There still remain a high number of unmet needs in dementia care despite many provisions of care directed at improving HRQoL (Franks et al 2000). The unmet needs in dementia care affect the person HRQoL. It is based on these unmet needs in dementia care that Kovach et al. (2005), discussed about the behaviors in dementia as a result of need. The theory that Kovach et al (2005) enacted was Consequences of Need-Driven, Dementia-Compromised Behavior (C-NDB).

C-NDB theory explains that the behaviors that dementia persons exhibits or put up are indicators of unmet needs. The C-NDB theory argues that the behaviors of persons suffering from dementia is due to the fact that care givers are not able to understand the needs of persons suffering from dementia and the individuals are not able to make their needs known to nurses or caregivers due to the disease.

Dementia disease is a progressive condition that is usually accompanied by progressive verbal disability, which makes it difficult for individuals to make their needs and emotions known to care givers or nurses. The verbal disability is very common in the later stages of the disease (Weert et al., 2005).

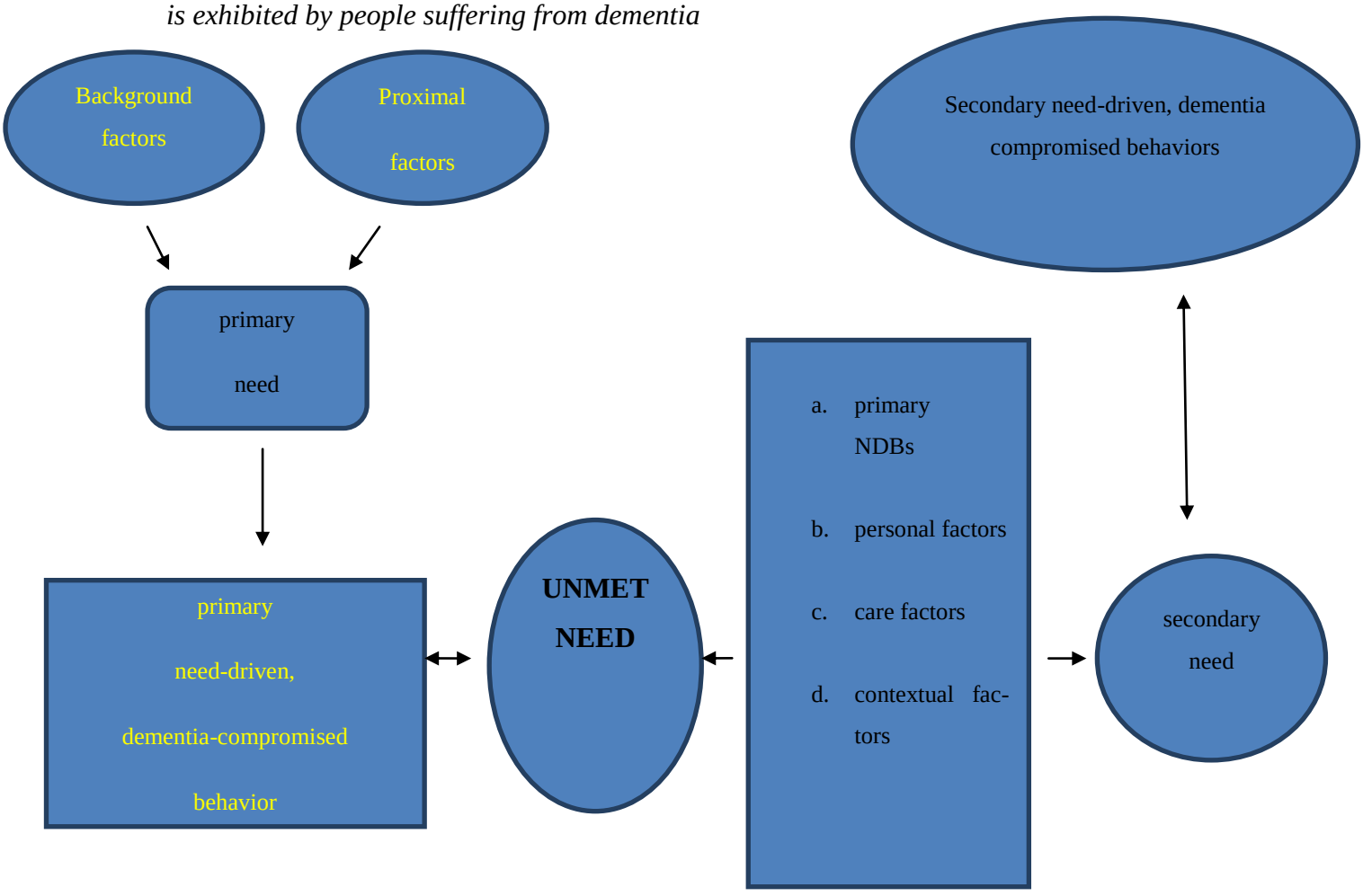
Research have also shown that persons suffering from dementia can expresses themselves through behaviors in a way of communicating physical and psychic distress due to an unmet need (Algatse et al. 1996 and Stokes, 2000). The unmet needs can also trigger neuropsychiatric symptoms leading to challenging behaviors (Hancock et al., 2006). According to Potkin et al. (2003), unmet need can also lead to language disorders in persons suffering from dementia (see Vasse, E. et al. 2010pg. 190).

The C-NDB figure 1 explains the effect of unmet need and other factors that also influences need. The figure shows that the primary need of a person with dementia is influenced by background or proximal factors. The background factors consist of things that make up the human structure, which is cognitive, neurological, health and psychosocial variables and these are stable in human body whiles proximal factors are situational issues or events that are happening in the immediate environment, such as pain, noisy environment or uncomfortable room temperature. Figure 1 explains that when there is unmet need, individuals are motivated to achieve these needs through a behavior that is need driven behavior (NDB).

The C-NDB figure also show that the effects of expressing needs through behaviors (i.e. primary NDBs) are due to the fact that needs are unidentified and unmet. Unmet needs in turn affect the person with dementia, care factors and contextual factors. A need being unmet can also leads to another need or secondary need with behaviors onwards.

For example, a proximal or background factor (thirst) results in a need of (fluids), which results in uneasiness (a primary NDB). If the need is unmet the primary NDB may continue or worsen, which may lead to a negative outcome (constipation and abdominal discomfort), which then leads to secondary NDB that is physical aggression (Kovach et al. 2005 pg. 136).

The figure 1, explains the C-NDB theory and the conditions that leads to behavior that is exhibited by people suffering from dementia



(Source Kovach et al. 2005 pg. 135)

1.5.1 Challenging behaviors and Dementia

Researchers have shown that challenging behaviors associated with dementia causes significant distress to the person with dementia and caregivers (Balesteri, Grossberg & Grossberg, 2000; Evers, Tomic & Brouwers, 2002; Wood, Cummings, Barclay, Hsu, Allahyar & Schnelle, 1999).

Challenging behavior is described as any behavior that challenges the capacity of caregivers and staff in dealing or coping with it (Bird et al. 2008 pg.74).The meaning of challenging behavior for this study is deduced from Bird et al (2008), definition of challenging that is 'any behavior associated with dementia which causes distress or danger to the person with dementia and/or others'.

There are multiple causes of challenging behaviors such as unmet need, environmental factor and personal motivation. Also a behavior can be perceived as a challenging depending on how other people interpret it. For example an unmet need can lead to a behavior being termed as challenging because the persons suffering from dementia are also motivated to achieve need according to Schölzel-Dorenbos et al (2009) and in the cause of achieving the need that is not met, put up a behavior to the effect (Kovach et al. 2005). A behavior can also be seen as challenging depending on the interpretation that is attributed to it. For example a person suffering from dementia may be wandering in the night because he/she is not able to find a way to the bed or toilet (Ersser et al. 1999).

1.5.2 Sensory loss and dementia

Sensory loss is defined as the decreased ability to respond to stimuli that affect our senses i.e. vision, hearing, touch, taste and smell. When an individual is affected by dementia disease, the disease can affect the interpretation of these senses. Research have shown that Alzheimer's disease and dementia affects the quality of life of an individual by significantly changing the interpretation of people's vision, auditory, taste feel and smell (National Institute of Health, 2002). The extent of these changes depends on a

number of factors, such as stage of the disease, neuropathological changes, sensory loss, medication management and proximal factors.

The dementia-biological model also reiterates that neurological changes in the brain, as well as severe organic brain decline are also possible factors affecting the normal perception, understanding and processing of sensory information in people with dementia (Cohen-Mansfield, 2000; Richards & Beck, 2004).

The author in analyzing how the loss in the sensory system will affect the use of the snoezelen therapy came out with the following discussions according to each sensory loss.

Vision loss: Ageing in most cases is associated with changes in the shape of the eye lens. The lens and cornea becomes less transparent with age and the pupil becomes smaller which affect the area of view. Dementia also contributes to changes in visual abilities of an individual because it affects the neurological arrangement which help to transmit image from the eyes to the brain for interpretation and understanding (Bakker 2003 pg. 47).

The other factors which affect the vision of individual are diseases which are notably glaucoma, cataracts, macular degeneration and diabetic retinopathy. Some of the vision loss may be compensated with the uses of spectacles but memory loss due to dementia affect the individual to forget it use and sometimes to have up to date prescription. Dementia also alters the interpretation of vision by changing the neurological arrangement of the brain which yields to misinterpretation and visual disorders (Mendez et al. 1996)

Hearing loss: The loss of hearing is very gradual and starts at middle age onwards. It often develops slowly and quietly. The loss is due to the decrement in the elasticity of the ear drum. People with hearing loss may sometimes have the ability to hear spoken sounds but lacks the exact words of person speaking. Hearing loss also can be managed by managing background noise and the use of hearing aids. Dementia also affects people with good hearing ability by misinterpreting what comes to the ear and thereby leading the individual to auditory hallucination (Bakker 2003, pg. 48)

Memory losses due to dementia also affect the individual to forget the use of hearing aid to compensate for the loss.

Taste and smell loss: The senses of taste and smell are closely related but until their sensation reaches the brain there is no direct connection between them (Roberts, 2010 pg. 318). The sense of taste and smell also decreases with age. Peoples with dementia usually experiences decreases in taste and smell (Bakker 2003). The decrement in the olfactory function exposes the individuals with difficulty in detecting olfactory warning signals such as smoke, food poisoning and gas leaks (Dalton et al.2010).

Researchers have also shown that, peoples who resides in community with high levels of air pollutions experiences decrement in olfactory function (Calderon-Garciduenas et al. 2010; Hudson et al. 2006) likewise those who have been exposed due to their work (Schwartz et al. 1989, 1991).
The loss of sense of taste and smell can also significantly affect the quality of life of an individual because there is loss of appetite and poor nutrition leading to depression and apathy. Dementia people are also affected by the misinterpretation by the brain of the sense taste and smell as indicated by Roberts (2010), this misinterpretation goes a long way to also affect their eating habit leading to malnutrition.

Loss of touch: Touch informs about temperature, pressure, texture, movement and bodily location. Pain also indicates touch but it has its receptors and sensory pathways (Roberts 2010, pg. 320).

A research also informs that, touch sensitivity decrease with age because the skin losses its elasticity and becomes taut. Tissue loss also occurs below the skin and it is attributed to the changes in the amount of fat below the skin and the decrement in the numbers of nerve endings in the dermis. Older people may become less responsive to stimuli of sense of touch because of loss of tissue and decrement in elasticity of the skin. An older adult may not experience pain because of loss of sensitivity of the skin. The reduced fat can cause bruises and tear because of lack of resistance to pressure (Kemmet & Brotherson, 2008).

Touch can also have a therapeutic effect depending on the method of introduction. Hand massage and other forms of touch has been found to have therapeutic effects as the use of animals especially dogs and cats as used in animal therapy whiles touch to sensitive places such as private area (penis, vagina) have been found to provide discomfort to the individual and therefore needs permission. The stage of dementia also affects the sensitivity of the individual because people in advanced stage of dementia are found to derive comfort in stuffed animals or toys close to their body and also the sense of touch also signals safety, sense of belonging, affirmation and security (Bakker 2003).

The knowledge of the sensory loss of an individual suffering from dementia is very important in the use of the snoezelen therapy. Snoezelen therapy makes uses of the senses of the individual to the cognitive ability in improving health. Senses are major factors to consider before one is introduced to the therapy. To even ensure an effective and a successful snoezelen use, there is the need for the care giver or nurse to make a sensory assessment.

1.6 SNOEZELEN

Snoezelen is an environment that is design with sights, sounds, textures and aromas to provide stimulating, calming and relaxing or energizing individuals with intellectual difficulties by making use of their senses (Lindsay et al., 1997) or Places where individuals spends most of their time such as hospitals, care centers e.g. Kustaankartano have been found upon research to lack stimulating effect (Liederman et al. 1958), which results in sensory deprivation and can lead to challenging behavior. Therefore it is very important that the commissioning party is trying to extend snoezelen therapy to ward to avert any challenging that may result because of sensory deprivation.

Snoezelen room is normally a controlled environment that is design in one room to provide a multisensory exposure or single-sensory focus by simply adapting to one or more stimulus (Shapiro & Bacher, 2002). The snoezelen environment is usually safe and non-

threatening and it is also proven to be one of the effective alternative cares for people with dementia disease. The stimulating arrangement in a snoezelen context should not be seen as; Platform for teaching specific skills, although therapeutic outcomes (e.g. Hutchinson & Haggar, 1994; Mount & Cavet, 1995) and learning opportunities may occur during the snoezelen therapy, or A basis for simply promoting resting and calmness.

In a contrast, snoezelen therapy should be seen as an opportunity to promote general feeling of restoration and refreshment which one attains from engaging in pleasurable and stimulating activities that do not put any pressure on the individual and can be enjoyed in full. Snoezelen environment (i.e. the physical arrangement of snoezelen equipment and space, as well as the stimuli) and the functional role of staff in snoezelen is the key measure in attaining the aforementioned feeling of restoration and refreshment in snoezelen (Hulsegge & Verheul, 1987).

The functional role of staff (this case the nurse or a care giver) should be closely involved in the snoezelen session by facilitating physical contact and providing other forms of warm interaction and not interfering in person's choice and pace. The nurse or care giver functions as a facilitator rather than a strict rehabilitation agent aimed at some targeted goal or objective (Lancioni et al. 2002).

1.6.1 Snoezelen and dementia

The notion of snoezelen is to deliver a sensory stimulation to people. It use has also been evolved as a recreational activity for elderly people with intellectual disability to some degree of therapeutic measure (Mount & Cavet, 1995).

Researchers have shown that, sensory stimulation is essential and its deprivation can leads to negative effects in people (Solomon et al. 1961). Persons with dementia may put up an inappropriate behavior due to an unmet need (Kovach et al. 2005) or sensory deprivation (Loew& Silverstone 1971), which can be intervene by snoezelen therapy.

The notion of snoezelen therapy, which is to deliver sensory stimulation to stimuli, has also been evolved from the traditionally one room settings to daily care with persons

with dementia. The effects of snoezelen therapy has been found upon research to affect positive changes in persons with dementia when used as a person centered care approach (Weert et al. 2005).

Another important connection that snoezelen has with dementia care is that, during snoezelen use the role of the facilitator or care giver enables a person with dementia to feel supported, valued and confident and interact well, regardless of their cognitive decline (Kuhn et al. 2000). Snoezelen has also been found to reduce apathy and help with mood with people with severe or later stages of dementia (Wareing et al. 1998).

1.6.2 Elements of Snoezelen

The elements of snoezelen are the various equipment's and objects that are placed in the snoezelen environment to provide stimulation to the senses notably sight, auditory, olfactory, touch with the exception of taste. These elements do not put any physical pressure on the individual as well as their cognitive abilities. Usually the elements are arrange in such a way that it stimuli presented are not decorated or released in an orderly fashion

Light effect is used in stimulating the eye of which some of the elements used are usually optic fiber-spray, bubble tubes, projector with reminiscence of images.

Sound effects which include pseudo classical music or 'new age' can also be introduced during session or use. The sound effect should not disrupt the attention of the individual in exploring other stimuli in the environment, the reason why pseudo classical music is used rather than known music.

The sense of smell can also be stimulated by aromatherapy and lavender bags, whiles tactile stimulation can be done by satin, cotton wool, shells etc. Tactile boards which are normally used for stimulating touch can also be made up of different textures such as rough or smooth, soft or hard, warm or cold to provide different varieties of sensation (Baker et al. 2003).

1.6.3 Setting up a Snoezelen room

It takes adequate preparation and careful planning to set up a snoezelen room. Some of the things that need to be considered before a snoezelen room is set up are outlined below:

- The individual needs of the people who will be using the facility.
- The use of the room or area for a long term, in this case it is an institution and they are planning to extend it to ward so the design should be planned more flexible rather than static, so that users may not be bored with the set up and make room for changes or variation in terms of arrangement.
- Peoples going to use the facility i.e. wheel chair bound, bedridden or people who are able to walk without support.

Snoezelen room is defined as any environment or area that is design to deliver stimulation of a multisensory or single sensory nature to match up more closely the exceptional needs of the individual or user (Pagliano, 2001).

Research argues that, multisensory stimulation should be available to persons at all time and in different areas or environment and not only the in the snoezelen room, but if a decision is being made to set up a snoezelen facility the major factor to consider is the needs of the user and also the reason for establishment i.e. whether it is educational, leisure, relaxation, sensory or a mixture of these. The reason for establishment of a snoezelen room goes a long way to affect the design of the facility to suit it purpose (Fowler & Pagliano, 2008).

When a snoezelen room is set up, there is the need to organize training to involve every staff (i.e. nurses or care givers) so that the facility will be a collective of ideas and not spear headed by one person. The training that is organized for the staff also, prevents the abandonment of the facility, if the person is absent.

It also provides the opportunity for staff to be aware of the purpose of its establishment as well as it use, safety measures and where to seek help in case there is a breakdown of equipment. The training also signifies collective thoughts engineered towards a common goal of a facility (Fowler & Pagliano 2008).

Setting up a snoezelen room can be very costly because there are so many factors that come into play such as: electrical wiring, conversion of a room or space, ventilation, purchase of equipment's, maintenance and the training of staff.

The idea of snoezelen can be made available in every area or environment at any time and not necessary a single room (Pagliano, 2001), which can also be an option for the commissioning party in their quest of extending snoezelen therapy to the ward in the care center (Fowler & Pagliano 2008).

2 METHODOLOGY

This chapter explains the method that was used to answer the research question of the study. The author used literature review and conducted content analyses of the materials that were collected for the research. The research was carried out by presenting analysis of available research and studies for this topic. It also provided the opportunity to summarize the literature which is available concerning the research question (Kumar, 2011).

Literature review was used because it provided the author an opportunity of gathering materials and researches that was related to the thesis topic for analyses. It gave a broader perspective of relating the findings of many researched materials in the quest of answering the research question.

2.1 Data collections

This chapter explains how data was collected for the study, in order for the deductive content analyses to be carried out and also to find answers to the research question that was projected for the study. The collection of data was done by using Arcada Nelli Portal directly through computers at ARCADA or through remote access to nelli from outside the school. An advanced Meta search was conducted, using an electronic search engines like EBSCO and Ebrary. Books and Google scholar were also used to collect articles. Materials searched on EBSCO were selected based on full text and its importance to the study. The EBSCO database that was used consisted of all the other search engines under it, notably academic search elite, CINAHL, GreenFILE, SPORTDiscuss with full text, library, information science and technology with abstract.

The articles that were available on the various searched engines enlisted were refined for the study based on an inclusion and exclusion criteria. The criteria assisted the author in gathering articles that were relevant for the study of the thesis topic. It also helped the author in order of limitation of the articles that were selected for the thesis project based on the inclusion and exclusion criteria. The inclusion criteria explains articles that were used based on certain measures and the exclusion criteria explains articles that were not used. Table 1, Depicts the inclusion and exclusion criteria used:

Table 1, Inclusion and exclusion criteria

Inclusion Criteria	Exclusion Criteria
• Articles written scientifically and in English. • Peer reviewed • Articles in full PDF format. • Articles with abstract. • Articles with relation to the topic. • Articles from data base search engines of ebsco i.e. academic search elite and cinahl, ebrary, Cochrane library and in English.	• Articles in other languages and not English. • Articles that were not scientifically written. • Articles that were not in full text.

These criteria assisted the researcher in finding the articles that were relevant to the study and provided solution to the research question.

The author first searched for articles that were less than five years old i.e. 2008-2013, of which the materials that were available were small and not directly related to the chosen topic. The search was then widening to ten years of which a considerable articles that were of high importance to the topic were retrieved. However, some articles that were as old as sixteen years old were also considered because of the knowledge that it added to the study in solving the research question.

During the search of the articles the author used words and phrases such as: “Snoezelen and dementia” OR “stages of dementia” OR “Snoezelen” OR “Challenging behavior and dementia” and “theories of need and dementia”, to find the scientific articles for the study. Books and websites that provided good source of information to the study were also used. A book that was obtained from Ebrary for the study has been described in table 2:

Table 2 Book that was chosen from Ebrary.

TITLE	AUTHOR	PUBLICATION DATE
Multisensory rooms and environment: controlled sensory experiences for people with profound and multiple disability	Fowler Susan, Pagliano Paul	08/2008

The various searches that were done by the search engines enlisted earlier and their numerical results in terms of articles that were available based on full text and its association to the chosen topic has been listed in table 3:

Table 3 Electronic database and numerical results.

Data base	Search words	Year range	Results	Selected
EBSCO	Challenging behavior and environmental factors	2008-2013	4	1
EBSCO	Challenging behavior and dementia	2008-2013	26	2
EBSCO	Snoezelen and dementia	2000-2011	9	2
EBSCO	Sensory loss and dementia	2000-2013	6	1
EBSCO	Stages of dementia	2011-2013	81	2
EBSCO	Snoezelen	1998-2013	36	4
EBRARY	Snoezelen and dementia		36	1
GOOGLE SCHOLAR	Snoezelen effects on communication	2010-2013	427	1
		TOTAL	625	**14**

Out of the 623 articles that met the inclusion criteria by the data base search engines, 14 articles were selected based on the following reasons

- The articles researching on need and unmet need in dementia care.
- Researches on the effects of snoezelen in dementia care.
- The consequences of unmet need in dementia care.
- Challenging behavior associated with dementia disease
- Articles that researched into ways of controlling challenging behaviors other than medication use.

The 14articles were reviewed to assist in finding answers to the research question. See table 4 in appendix 1, for the full list of the articles result of the data collection.

2.2 Content Analysis

Content analysis is putting a meaning and interpreting of collected materials, be it from books or articles. This can be done by finding themes to come up with a constructive meaning (Krippendorf, 2004). It is also a method that allows theoretical knowledge to be used in assisting the understanding and interpretation of data through a deductive or inductive procedure (Elo & Kyngäs, 2008)

Deductive content analysis was used for this study because; the study was retesting an existing knowledge into a new context (Elo & kyngäs, 2008). In a deductive content analysis, analytical deductions are based on three main things: existing theories, previous research and expert knowledge on the subject to be researched (Elo & Kyngäs 2008).

Going by the analogy of deductive content analysis, the author had clear idea that this was the best method for the study as it contained all the above mentioned things. First, the theoretical framework used (C-NDB theory) was based on an existing theory. Secondly, the aim and research questions were inspired by previous researches. And thirdly, answers to the research questions were drawn from expert knowledge of previous studies (peer reviewed articles).

Deductive content analysis was also used for this study because the method allows moving a general idea to a more specific unit or idea, thereby narrowing a research. The author firstly searched for challenging behaviors in dementia care and later narrowed it down to environmental factors and unmet need where snoezelen therapy can assist in reducing some behaviors.

2.3 Data Analysis

The 14 articles that were collected for the study were studied several times in assisting finding answers to the research question. During the reading of the various articles, knowledge's or ideas that were providing answers to the research question were highlighted.

Data analysis involves understanding and interpreting results by stating the theme, developing categories, subcategories to describe the findings (Elo&Kyngäs, 2008). The main idea of dividing a study into themes and developing categories, subcategories is to make it easier to get a clear understanding of the analysis of the articles with the aim of answering the research question. The aim of the study was extending snoezelen therapy to the ward and how the therapy can assist elderly people suffering from dementia with challenging behavior. The research question was what are the effects of snoezelen therapy on elderly people suffering from dementia with challenging behaviors?
The aim of the study was considered as the main theme and the research question was divided into two main categories that is: category one Challenging behavior and category two snoezelen therapy.

The structured matrix analysis was used for selecting the sub-categories for the various categories. The structured matrix of analysis allows for selecting from a text or data words that fits a grouping or a categorized frame (White & Marsh 2006). The 14 articles and the theoretical frame work were used as a guideline for selecting the subcategories. Ideas and information that were repeatedly mentioned in the various articles were grouped into sub-categories. The author realized that in the sub-categories some elements belonged to more than one unit and they were recorded as such. All decision to add and element to a group or sub-category was based on the information repeated in

the data or text material; knowledge from the theoretical frame work and earlier researches.

2.4 Validity and Reliability

Validity refers to the extent that a research method is used in a clearly and accepted way to measure to an objective of a study (Kumar 2011). The validity of any work is the widely accepted outcome of any event with evidence based on truth. This study is valid because the articles and reading materials for the study were collected from a trustworthy data base. The method that was used for the study i.e. literature review assisted the author to analyze studies that have been carried out by professionals in the field and widely accepted to be evidence based.

Reliability is the ability of a system to be carried out or performed on a component consistently or repeatedly to achieve the same results (Aveyard, 2010). The reliability of this study is the data base that was used to collect the articles for the review. The total outcome of the study will be reliable if the same method i.e. literature review and the content analysis are carried out in the same manner.

2.5 Ethical Consideration

The author read through the Arcada scientific research guidelines and complied with them accordingly. The source of articles that were used in the study was made known and also the knowledge that was used was cited accordingly. Helsinki declaration regarding ethics in human research was well comprehended and its knowledge was used in this thesis project.

Personal knowledge and ideas did not have a place in this thesis as all the data collected for the study for analysis was based on scientific writings. The author was focused on reviewing the various data that was collected for the study in finding answers to the research question of the study. The author also considered the reliability of articles that were sourced for the study because the method used (literature review) permitted a wide range of researched and written materials.

2.6 Problems encountered in the study

The author sourced the articles that were used in the study from previously published articles. The study was challenging because most of the articles that were retrieved provided almost the same findings about the use of snoezelen with dementia and very little dealt with the use of snoezelen for challenging behavior. Most articles that could have added good information to the study were excluded because it was locked and required payment before accessibility or written in other languages other than English.

The author also found out that there were more researches on the use of snoezelen with intellectual disability compared to snoezelen with dementia with challenging behavior which was the main focus of the study. One major problem the author encountered in this study was the content and data analysis. The author had difficulty in selecting theme for the study and grouping units into categories and sub-categories. In the sub-category section some elements were intertwining with other units and the author faced some difficulty in placing them in an appropriate category.

3 RESULTS

This chapter deals with the findings of the literature review that was done for the thesis topic to solve the research questions that was projected for the study. The results are presented according to the two main categories that were found for the study. They are further elaborated in the sub-categories that are found on the main categories to enhance understanding of the groupings (see figure 2). The two main categories are:

- Challenging behavior
- Effects of Snoezelen therapy

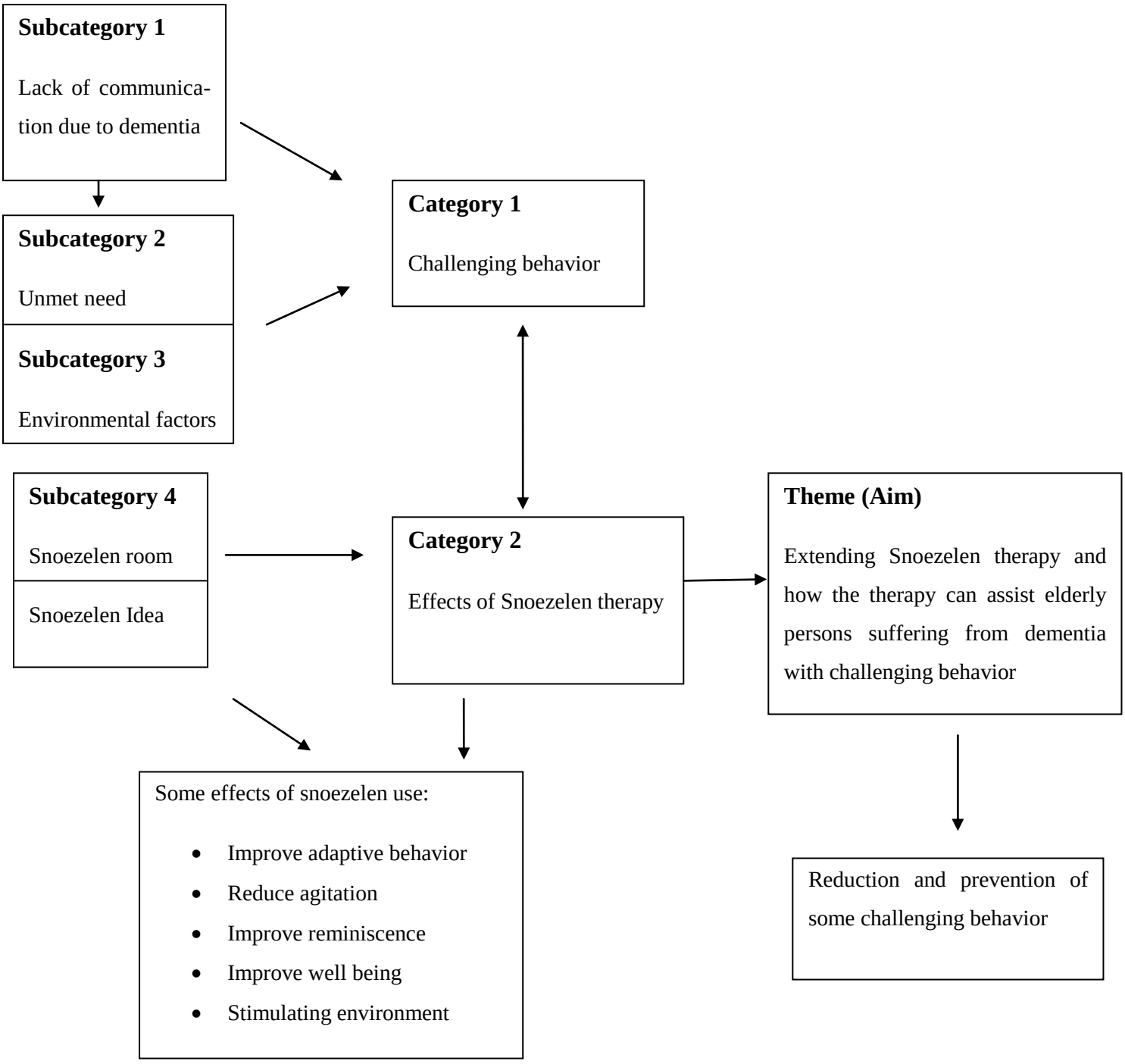


Figure 2, the theme, Category and sub-categories

3.1 Category 1: Challenging behavior

Challenging behavior is a 'broad phrase' that is used for many and different types of behavior. In this study the author adopted the definition of challenging behavior according to Bird et al (2008) that is 'challenging behavior is any behavior associated with dementia persons which causes distress or danger to the person with dementia and/or others'. Challenging behaviors are sometimes determined by the circumstances upon which the individual suffering from dementia behaves and how others interpret the behavior that is put up (Osborne et al., 2010).

Through the need frame work, Kovach et al (2005) discussed that persons suffering from dementia in their quest to achieve an unmet need puts up inappropriate behavior. The inappropriate behavior that is exhibited is due to need driven which is also influenced by proximal factors (environmental factors) and personal factors. Need and environmental factors were found to be the main cause of most challenging behaviors in this study.

3.1.1 Lack of communication due to dementia

Dementia is a debilitating condition that is usually characterized by worsening of cognitive abilities. A dementia condition usually worsens with time and gradually takes away the independency of persons that are affected. In the stages of dementia that was discussed earlier on in the study, one can deduced that during the early and middle stage of the disease, persons suffering from the disease are able to live slightly an independent life with small and increase assistance required respectively. However, during the later stages of the disease they lose totally their independency. The gradual worsening of the disease is usually accompanied by verbal loss. The verbal lose increases with the worsening of the disease and this prevents or incapacitates persons suffering from dementia in voicing their needs and wants to care givers. Persons suffering from dementia resort to the use of behavior and signs in communicating and their means of communication are sometimes interpreted as challenging behavior.

3.1.2 Unmet need

Need according to Abraham Maslow is a basic entity that all human beings are motivated to achieve. Schölzel-Dorenbos et al (2009) explains that dementia people are motivated to achieve need despite their cognitive decline and different understanding of situations. For example a person suffering from dementia may lack the ability to maintain personal hygiene and may not see anything wrong with it in terms of health promotion.

Dementia is also known by research to be accompanied by gradual verbal losses, which affect persons suffering from dementia in making their needs and emotions known to care givers (Weert et al 2005). Research have also shown that there is an increase in the preparation of needs in dementia care in hospital, communities and care homes to help improve the quality of life of persons suffering from dementia (see Jenkins & Mckay 2013 pg.49) but in a contrast, Frank et al 2000 states that despite the preparations of needs in dementia care, there are still a number of unmet needs in dementia patients (see Schölzel-Dorenbos et al. 2009 pg. 117). Due to these unmet needs persons suffering from dementia put up behavior that is seen as challenging in a way of achieving the need (Kovach et al. 2005).

3.1.3 Environmental factors

Environment is seen as the aggregate of surrounding things, conditions or influences that shape the life of a person.
The author found out through the study that, non-stimulating environment can lead to challenging behavior in dementia care. Previous research has shown that adequate sensory stimulation is very important for human functioning and that its deficiency results in maladaptive behavior such as self-stimulating or apathetic behavior (Weert et al 2005). So if an environment is non-stimulating it increases the probability of an inappropriate behavior from persons suffering from dementia. Other environmental factors such as noisy environment, too hot or cold environment can also motivate a person suffering from dementia to exhibit behavior in a way of showing discomfort. The discomfort that will be shown by a person suffering from dementia can be interpreted as a challenging behavior.

3.2 Category 2: Effects of Snoezelen therapy

The ultimate aim of snoezelen therapy is to stimulate senses of individuals with the promotion of restoration and relaxation. Research has shown that, there can be therapeutic measures associated snoezelen therapy. The therapeutic measure can positively impact on people who use the snoezelen therapy (Weert et al. 2005).

3.2.1 Snoezelen room / Snoezelen idea

Snoezelen room is the traditional way of experiencing snoezelen therapy. A room is set up and equipment's are arranged in them to deliver the necessary stimulation to the various human senses. The setting up of the snoezelen room is determined by the primary need of the users and also the purpose of the establishment. Setting up a snoezelen room entails a lot in terms of cost i.e. buying of equipment, reserving a room for the therapy, wiring, ventilation and training of staff (Pagliano & Fowler, 2008).

Research has shown that for an individual to attain the full benefit of snoezelen therapy in the room settings there is the need to assess the individual before introduction (Weert et al. 2005). The assessment tools although helpful can also be optional in some cases. The various assessment tools are:

- The sensory assessment and profiling tool- this is a small test that is conducted to identify the sensory preference of the individual before the individual is introduced to the snoezelen room. This gives an idea to the care giver or the nurse of the equipment to use. The sensory preference to start with for the snoezelen therapy. However in case the stage of the dementia disease prevents the person from engaging in an active assessment, it is the duty of the nurse to rely on observation or contact family members of the individual for information in order to identify the sensory preference.

- The adult sensory profile - This assessment identifies the level of stimulation the individual needs at a particular time. This also informs whether the individual is a low registering sensory type or sensory seeking type. So that the level of stim-

ulation in the snoezelen room can be adjusted to suit the individual sensory accommodation.

- The pool activity level (PAL) instrument for occupational profiling- This gives the idea of how to run the snoezelen session having the knowledge of the sensory preference and the level of stimulation and also the severity of their condition.

The stimulation of the various senses is aimed at promoting relaxed feeling and restoration. The sight, hearing, smell, touch and taste senses are stimulated by various equipment or elements such as optic fiber-spray, bubble tubes, music, tactile boards.

Snoezelen Idea: Snoezelen idea is the act of using the various measures or activities that happens in the snoezelen room with the exception of the assessment tools in everyday care. The idea is used in everyday care of persons suffering from dementia by allowing them to make choices, maintaining eye contact during care and conversation. .In using the snoezelen idea, the caregiver should be able to guide persons suffering from dementia to use their senses by allowing them to have a smell of soaps during bathing, encouraging them to use nonverbal means of communication if verbal communication is deficient.

The care giver should be able to act as a facilitator during Snoezelen care by providing warmth and security for individuals. Allowing persons suffering from dementia to make choices and also allowing some degree of autonomy during care and intervening when things are not going right. In using the snoezelen idea, the main focus is using of dementia person's senses in care to promote health. The snoezelen idea can also be an option for the ward, if the establishment of snoezelen room is proved too costly. If the snoezelen idea is going to be adopted by the commissioning party, it is fair to say that the nurses or caregivers in the ward should be trained on the importances of using individual's sense to promote calmness, restoration and health.

3.2.2 Some effects of snoezelen therapy

There are some effects of using or practicing snoezelen therapy and some have been outline below:

Improve adaptive behavior: Adaptive behavior is the ability of an individual to stay in an environment or condition easily and comfortably. Snoezelen therapy has been found upon research to increase adaptive behavior of individuals suffering from dementia and this was manifested in the way individuals were happy/ content and enjoying themselves during snoezelen therapy (Weert et al 2005 pg.30). For example if an individual is not able to adapt to an environment due to sensory deprivation, the primary aim of snoezelen therapy is to deliver stimulation which can assist the individual to adapt easily. The increment in adaptive behavior also means reduction in maladaptive behavior that is seen in most cases as a challenging behavior. There was a positive change score on an experimental group in a research that was conducted against restless, boredom, verbal anger in dementia care institution (Weert et al. 2005).

Reduce agitation: Agitation is a type of behavior that is also exhibited by persons suffering from dementia. Snoezelen therapy has been found upon research to positively reduce agitation behaviors on the part of individuals suffering from dementia. A facilitator in snoezelen therapy provides warmth and security to persons with dementia. Research has found that people suffering from dementia are seen to show signs of improvement in communication during snoezelen use, as they are able to discuss with facilitators and make choices. Persons in the later stages of the dementia disease are also seen to keep eye contact and also nod in affirmative (i.e. improvement in non-verbal communication). These perceived improvements in communication regardless of the stage of the disease have been found to contribute to the reduction in agitation (Weert et al 2005).

Improve reminiscence: Persons suffering from dementia are known to have memory loss or difficulty in recalling both past and recent event depending on the stage of the disease of the individual. When individuals were introduced into the snoezelen room or the therapy used in everyday care, the opportunities that is presented sometimes brings

memory of their past which sometimes they show it outside by either smiling or discussing with the facilitator or the nurse. For example, when a known music is played which are familiar to clients, some automatically sing along showing signs of happiness as well as sadness depending on how they recall the music to certain event to their past life. Pictures that were familiar to persons suffering from dementia also enabled them to recall memories.

Improve well-being: Snoezelen therapy has been found upon research in an experimental study that was conducted by Weert et al. 2005a, to have a significant effect in well-being in a study that was conducted in morning care for persons suffering from dementia. The well-being of the people suffering from dementia included the mood, happiness enjoyment and sadness that they showed after a snoezelen introduction in morning care (Weert et al 2005, pg.657).

Stimulating environment: Researches has shown that settings in which patients or individuals spend most of their time or life such as long stay in hospital or institutional care center has been found to be non-stimulating. Staying in a non-stimulating environment can lead to inappropriate behavior as already discussed.

Research has also shown that challenging behavior from persons suffering dementia increase to 97% in institutional settings thereby decreasing quality of life (Weert et al. 2005 pg. 24). Snoezelen environment is however found upon research to provide a safe and non-threatening environment that is intended to deliver stimulation to senses. The arrangement of the snoezelen room or the using of snoezelen therapy in care enables the care givers or nurses to act as facilitators. This provides safety and warmth for the individual suffering from dementia to explore the snoezelen environment and also to receive good care (Baker et al. 2003).

Research has also shown that, in the snoezelen environment as the care givers or nurses act as facilitators there are significant increases in communication or verbal utterances (i.e. talking about sensory stimuli, and more social conversation) between nurses and clients. There is also increased autonomy on the part of the client because they are able to explore the environment without any inhibition (Weert et al. 2005).

4 DISCUSSION

The review researched into ways to extend snoezelen therapy to the ward in Kustaankartano and the effect snoezelen therapy will have on elderly persons suffering from dementia with challenging behavior. The findings provide clear evidence that snoezelen therapy can assist persons suffering from dementia with some challenging behaviors.

This study informs that persons with dementia put up behaviors that are seen as challenging in their quest to achieve an unmet need and that when an unmet need is attained it can reduce challenging behavior (Kovach et al, 2005). When a person suffering from dementia exhibits any behavior that is seen as challenging, there is the need for care givers to find the need cause of the behavior rather than tackle the behavior that is exhibited (Schölzel-Dorenbos et al. 2009).

The research also informs that, places that individual spend most of their time or life such as long stay in hospitals or care centers has been found to be non-stimulating (Lancioni et al, 2002). This informs that, the idea for the commissioning party to find ways of extending the snoezelen therapy to the ward in order to stimulate the environment is laudable. The stimulation of the environment will avert any inappropriate behavior that may come from persons suffering from dementia as a result of sensory deprivation. The two ways that this study came about of extending snoezelen to the ward is either by establishing a snoezelen room for the ward or by using the idea of sensory stimulation in daily care (Weert et al, 2005).

Challenging behavior for this study was any behavior that is associated with persons with dementia which causes distress or danger to the person with dementia and/or others (Bird et al, 2008). Snoezelen room that is usually reserved for the therapy has been found upon the study to be a safe place intended to deliver stimulation to stimuli. The snoezelen room also provides an opportunity for the person suffering from dementia to have some degree of autonomy as individuals are free in exploring the snoezelen environment. The snoezelen setting also enables a person suffering from dementia to feel supported, valued and confident and interact well, regardless of their cognitive decline.

It also increased communication between persons suffering from dementia and care givers or facilitators. The communications that were perceived were both verbal and non-verbal. The non-verbal included smiling, nodding and eye contact. The results part shows that people suffering from dementia are not able to adapt to unfamiliar environment thereby increasing maladaptive behaviors and snoezelen therapy has been found to increase adaptive behavior in that regard (Weert et al, 2005; Lancioni et al, 2002).

The study has also shown that people reminiscence was increased during snoezelen use, the memory that persons suffering from dementia recalled were both positive and negative. This was due to the way the individuals suffering from dementia recall personal events when pictures and music were introduced into the snoezelen room (Weert et al, 2005).

5 CONCLUSION AND NEED FOR FURTHER RESEARCH

Dementia disease is usually accompanied by behaviors which are not part of the normal ageing process; this is due to the fact that the disease affects the neuropathology of persons suffering from the disease thereby altering the interpretation of most senses. The study has shown that although challenging behavior is associated with dementia disease, the ability of a care giver to identify the need cause and cater for unmet need can assist in the reduction of challenging behavior from persons suffering from dementia. The main cause of challenging behavior that snoezelen therapy can avert is a behavior emanating from sensory deprivation.

It is fair to say that not all challenging behaviors can be prevented or reduced by snoezelen therapy. For example, if a dementia person is found to be aggressive, one should not think that just placing the person in a snoezelen room can calm the person down. However if the need causes of the person is determine and it is found that the person is a lover of music, then snoezelen therapy can help in that regard.

The study showed that snoezelen therapy can assist in reducing some challenging behavior such as maladaptive behaviors and agitation. There is a need for further research in identifying the need of persons suffering from dementia and how to cater for unmet need in reducing challenging behavior in dementia care.

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6.1 Appendix 1

Table 4 Results of data collections

Author/Date	Title	Objective	Results
Christine R. Kovach, Patricia E. Noonan, Andrea Matovina Scildt, Thelma Wells (2005)	A Model of consequences of Need-Driven, Dementia-Compromised Behavior	To extend the NDB model to explain the behavior people suffering from dementia exhibits	Dementia people use physical distress to show unmet need rather than communication and the actions of a caregiver positive action might moderate the event that leads to the physical distress.
Ian Burn, Helen Cox, Helen Plant (1999)	Leisure or therapeutics? Snoezelen and the care of older persons with dementia	To find out whether snoezelen is used as a therapy or for leisure purpose in the elderly care.	Found out that the use of snoezelen is growing in the elderly care with few evidence based, although there are limited researches to support its therapeutic outcomes and therefore, there is the need for a further research into it.
Julia C, M. van Weert, Alexandra M. van Dulmen, Peter M.M. Spreenwenberg, Miel W. Ribbie and Jozien M. Bensing (2005)	Behavioral and mood effects of Snoezelen integrated into 24-Hour Dementia care	To find out the whether Snoezelen can effect behavior and mood of individuals with dementia.	There was positive improvement in behaviors such as apathetic, aggressive behavior, loss of decorum and depression.

Author/Date	Title	Objective	Results
van Weert J.C.M., Janssen B.M.,vanDulmen A.M., Spreeuwenberg P.M.M., Bensing J.M.,&Ribbie M.W (2006)	Nursing assistants' behavior during morning care: effect of the implementation of snoezelen, integrated in 24-hour dementia care.	Finding the effects on the quality of care by nursing assistance due to snoezelen in a 24-hour dementia care	Findings showed significant increase positive persons work on the part of the nursing assistants and decrement in malignant social psychology
Baker R., Holloway j., Holtkamp C.C.M., Larsson., Scherman B., Johansson S., Thomas P.W., Wareing L.A & Owens M (2003)	Effects of multisensory stimulation for the people with dementia.	effects of snoezelen therapy on people with dementia compared to controlled activity	Snoezelen was found to be more effective with people with dementia than control activity in both short or long term
Bakker Rosemary (2003)	Sensory loss, Dementia, and environments	Significant changes of interpretation sensory due to dementia.	Found that old age comes with gradual loss of sense ability and dementia also alters the interpretation of senses
EmmelyneVasse, MyrraVernooij-Dassen, AnoukSpijker, Marcel OldeRikkert and Raymond Koopmans (2010)	A systematic review of communication strategies for people with dementia in residential and nursing homes	Finding out how non pharmacological care will: improve communication of peoples with dementia and staff also reduces symptoms of neuropsychiatric of residents with dementia.	The review showed that care staff can improve the communications of individuals with dementia by adapting to good strategies in their daily care. Study also suggested an improvement in quality of care.

Author/Date	Title	Objective	Results
Jenkins C, Mckay A (2013)	A collaborative approach to health promotion in early, middle and later stages of dementia (They were two articles and accepted date was 14 and 21 January 2013 respectively)	Find the signs as well as advices on the various stages of dementia. Offer appropriate advices on reducing the risk of getting dementia	Offered advices on how to reduce the risk of dementia Clearly explains with symptoms the various stages of dementia.
Lancioni G.E., Cuvo A.J and O'reilly M.F (2002)	Snoezelen: an overview of research with people with developmental disabilities and dementia	provide an overview of researches on snoezelen with people with dementia and developmental disability	Some researches supported positive results on the use of snoezelen, whiles others disagree due on the method use in the research.
Hannah Osborne, Jane Simpson and Graham Stokes (2010)	The relationship between pre-morbid personality and challenging behaviour in people with dementia: A systematic review	Find out whether challenging behaviour of persons with dementia reflects the person pre-morbid personality Objective	Research found a positive relationship between personalities of persons with dementia as on factor of formulation of behaviour.

Author/Date	Title		Results
Jennifer A. Dilworth, Neil Phillips and John Rose (2010)	Factors relating to staff attribution of control over challenging behaviour	Find out the whether organizational factors has control over individuals challenging behaviour	Staff attributes of quality can positively influence challenging behaviour and also the institutional setting.
Michael Bird, Robert H. Llewellyn-Jones and Ailsa Korten (2008)	An evaluation of the effectiveness of a case-specific approach to challenging behavior associated with dementia.	Finding solutions to the cause of challenging behaviors in dementia care with reduce medication by tackling the need or route cause.	The research showed that challenging behaviors must be taken care based on the need of the cause other than tackling the behavior itself.
Carla J. M Schölzel-Dorenbos, Els J. Meeuwsen and Marcel G. M. OldeRikkert (2009)	Integrating unmet needs into dementia health-related quality of life research and care: Introduction of the hierarchy model of needs in dementia	To make need assessment in dementia care and relate unmet need to health related quality of life by using the Maslow's hierarchy model of need.	Research found that when unmet need are identified in dementia care and taken care of it can help to improve health related quality of life