Snoezelen Stimulation Intervention In Nursing Homes for Persons Suffering from Dementia

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Abstract:

The purpose of this study was to analyze research studies on the effects of snoezelen intervention in dementia residents in nursing homes ranging from mild to severe stages of dementia. The research question was: How can snoezelen intervention positively affect dementia residents in nursing care? Qualitative study and content analysis were the methods used for analysis which contains thirteen scientific researched articles which helped to answer the research question posed by the study. Previous researched articles of relevance to effectiveness, acceptability and ethical issue were sought. The findings were presented through six categories of positive effects on communication, well being, reminiscence, behavior, relaxation and environment which demonstrated positive effects of snoezelen intervention in dementia care. It can be concluded that snoezelen intervention has demonstrated positive effects on dementia residents residing in nursing homes and this improves their quality of life. This study was guided by Kitwood work on dementia care which emphasis on person-centered care which is unique needs of resident care. The study assumes that even dementia residents in severe stage can still enjoy the remaining part of life. Future research is needed to investigate the effectiveness of snoezelen at an individual level, to find out whether some residents benefit more from the snoezelen intervention than others.

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Sammandrag:

Syftet med denna studie var att analysera studier om effekterna av snoezelen intervention vid demens boende på sjukhem, från lätt till svår stadier av demens. Forskningen Frågan var: Hur kan snoezelen ingripande positivt påverka demens boende i omvårdnaden? Kvalitativ studie och innehållsanalys var de metoder som används för analys som innehåller tretton vetenskapliga artiklar forskat som bidrog till att besvara frågeställningen ställts av studien. Tidigare forskade artiklar av relevans för effektivitet, acceptans och etiska frågan söktes. Resultaten presenterades genom sex kategorier av positiva effekter på kommunikation, välfärd, reminiscens, beteende, avkoppling och miljö som visade positiva effekter av snoezelen ingripande i demensvården. Det kan konstateras att snoezelen intervention har visat positiva effekter på demens boende bosatta på sjukhem och detta förbättrar deras livskvalitet. Denna studie styrdes av Kitwood arbete på demensvård som betoning på person-centrerad vård som är unika behov av inhemska vård. Studien förutsätter att även demens boende i allvarligt stadium fortfarande kan njuta av den återstående delen av livet. Framtida forskning behövs för att undersöka effektiviteten i snoezelen på en individuell nivå, för att utröna om vissa invånare dra mer nytta av snoezelen ingripande än andra.

Nyckelord:	snoezelen, demens, sjukhem, boende, äldre, personer vård
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1. INTRODUCTION

There are currently 6 million dementia residents in the European Union and the number tends to increase in the coming decade. Dementia is the loss of cognitive function sufficient severity to interfere with social and occupational functioning. There are several causes of dementia of which Alzheimer disease (AD) has the highest incidence. Memory loss is not the only deficit of dementia according to what majority belief. Impairment in activities of daily life and abdominal behavior problems are common symptoms (Hoof et al. 2010 p.1244).

Behavior and psychological disturbances usually increase to 97%, mostly when dementia residents are institutionalized, those with moderate to severe stages being most vulnerable. Most of dementia residents in caring settings are being misunderstood due to the increase of behavior disturbances and progression of cognitive decline which leads to difficulties in offering care. This creates a challenging environment for both the residents and the caregivers. Dementia residents are prone to monotonous caring settings which are as a result of routine way of giving care where their personhood is unrecognized, well being is undermined as well as their quality of life. These pose as a huge threat in dementia residents as far as their “being” is concerned (Jeannie 2008 p. 1).

Ebersole et al. 2004 noted that due to biological ageing, a number of sensory changes occur as a result of the ageing process in sensory organs and their association with nervous system. Sensory loss can become a greater problem when coping with symptoms of dementia syndrome. The study indicates that dementia residents have a decrease cognitive ability to process incoming sensory stimuli and a low threshold. Behavior disturbances occur when the unmediated stimuli accumulate to a point of exceeding the stress threshold. Model of sensoristasis and imbalance, it has been suggested that the imbalance pacing of sensory stimulating and sensory calming activities may lead to behavior disturbances intra psychic discomfort in a residents (Chung et al. 2007 p.108).

In this study implementation of snoezelen stimulation intervention in caring for dementia residents living in nursing home has well emphasized and reported positive effects on behavior disturbances, improved communication and creating conducive environment for dementia

residents. This ranges from mild to severely demented residents according to previous researches (Chung et al. 2007 p.109).

The idea was borrowed from Kustaankartano Elderly Home where the author was carrying out rehabilitation practical training. The author realized that even small activities like rolling the softballs or hitting balloons on the table from one resident to another can bring all residents on board despite of their cognitive. This activity created socialization, humor and concentration. That kind of activity is one example of snoezelen stimulation activities whereby bright colored soft balls and balloons were used. Bright colors help the dementia residents to recognize the objects in this case the balls, and the residents could be seen following the ball from one resident to another.

Snoezelen or multi sensory stimulation (MSS) is one of the non-pharmacological interventions which is widely used and accepted approach to nursing home residents suffering from dementia and seems to fit Kitwood work on person centered care (Weert et al. 2005 p. 24). Snoezelen is a psychosocial intervention that combines a personal-centered approach with the integration of sensory stimuli in daily care for dementia residents with the aim of maintaining contact with residents, selfhood and dignity and enhances their well-being by positive stimulation of their senses.

Study by Kuhn et al. Indicates that person centered care is based on humanist view that the status of individual suffering should be preserved by positive interaction (Weert et al. 2006 p. 657). The aim Multi Sensory stimulation/snoezelen is to maintain or improve the contact with dementia residents and to improve their well being by stimulating their senses. This goes hand in hand with other psychosocial interventions in dementia nursing home care that is emphasis on improving the well-being of residents.

The study relates snoezelen with Kitwood theory of person centered which focuses on the unique needs of residents, emphasizing on the need to give life to the failing mental powers. Person centered care has influenced the field of dementia care since Tom Kitwood and the Bradford dementia work started writing on the subject in early 1990s (Persaud 2009 p. 5). Kitwood theory of personhood and person-centered care originated from a desire to change the prevailing culture and quality of care for people with dementia. The work emphasizes on respect for the persons

suffering from dementia and draws attention to the meaning of behaviors which can be difficult to understand. Kitwood & Bredin 1992 illustrates that personhood being supported includes positive affects, affection warmth, humor, creativity, self expression and showing evident pleasure in residents lives. It further emphasizes that quality of life is just as important for a person who has advanced dementia as anyone else (Persaud 2009 p. 6).

1.1 Aim

The overall purpose of conducting this study was to investigate the positive effects of integrated snoezelen stimulation intervention in nursing homes for persons suffering from dementia. The study focuses on all levels of dementia ranging from mild to severe stages. Snoezelen stimulation intervention aimed to be integrated in dementia resident's daily care.

The idea of this study comes about from the author's own observation and experience from practical training in Kustaankartano elderly home. The author managed to visit snoezelen rooms in that elderly home but realized the need of integrating snoezelen stimulation from "the White room" to daily care and in common areas where the residents spend most of their time. The reason behind the idea was because not every resident managed to visit snoezelen room due to different reasons.

Research questions

It could not be easy to conduct this study without the following research question.

- How can snoezelen intervention positively affect dementia residents in nursing care?

2. THEORETICAL FRAMEWORK

This chapter covers the foundation upon which this study is conducted. Use of snoezelen stimulation intervention in persons suffering from dementia living in nursing homes is well elaborated and how it influences their well-being. In order to understand what constitutes of snoezelen intervention in dementia residents, the study deducts Tom Kitwood`s theory of person centered care on dementia care. Kitwood had worked tirelessly promoting lives of dementia residents through person centered theory.

2.1Tom Kitwood theory

Tom kitwood was known as a pioneer in dementia care. His work emphasis on creating ways of providing care than enhanced well-being and maintain selfhood and dignity (Kitwood 1997 p. 22). The guiding theme relating to person-centered care, which emphasis on individual care leads to personhood philosophy that underpins Kitwood theory of dementia care. This has to do with the uniqueness of each person, subjectivity and relatedness (Kitwood 1997 p. 10).

Personhood is evident through interacting with others. Kitwood book 1997 was written partially as a response to the pervasive idea that people with dementia experience a profound loss of self. Based on his interaction with individuals in various stages of dementia living in community as well as institutional settings, Kitwood argued that people with dementia are persons, that there is no loss of self and suggested that personhood is maintained through the relationship one has with others (Kitwood 1997 p. 8).

Kitwood suggests that personhood as “implies a standing or status that accorded by others” (Kitwood, 1997 p. 4). It requires recognition and acknowledgement and the capacity to truly see other, fundamentally, as a person. According to Kitwood it really means that understanding and meeting each person’s particular needs for attachment and security, identity, stimulation and occupation and social belonging.

Person-centered care can also be described as caring for the whole person as an individual enabling each individual to make the most of his or her remaining abilities and continue to be socially included.

The framework emphasizes on patients' perspectives and their subjectively, defined experiences and their needs. The ethic that all human beings are of absolute value and worth of respect, no matter their disability, and on a conviction that people with dementia can live fulfilling lives and enjoy life like anybody else. Kitwood work on dementia emphasis on how to improve the care of dementia residents by treating them as individuals "all individuals are unique and have an absolute value… individual do not function in isolation, they also have relationships with others; all human life is interconnected and interdependent. Kitwood work emphasizes on the need to provide care that enhance well-being and maintain selfhood and dignity (Kitwood 1997 p. 22).

As the society lose connection with dementia residents Kitwood challenges everyone to improve their care and this helps in maintenance of personhood of dementia residents and uniqueness and individuality of all is recognized regardless of diagnosis.

Kitwood recognizes dementia residents as being still capable of communicating their desires and feelings and of living in the world of relationships. Kitwood suggests that personhood implies a standing or status that accorded by others (Kitwood 1997 p. 4).He state that it requires recognition and acknowledgement and the capacity to truly see the other, fundamentally as a person. He goes further and claims that dementia residents are able to experience some form of personal growth even in the face of cognitive decline (Kitwood, 1997 p. 84).

Kitwood identifies the primary task in the new person-centered culture of dementia care as "improving the depth and quality of interaction" (Kitwood 1997 p. 87). Kitwood points out that this mode of care distinct from usual task focused way of care where dementia residents are treated like things. Personhood is undermined when individual needs and rights are not considered, when powerful negative emotions are ignored or invalidated, and when increasing isolation from human relationships occurs (Malignant isolation psychology).

Therapeutical approaches like snoezelen have been utilized with persons suffering from dementia with the aim of promoting person-centered care, well-being and functioning (Weert et al. 2005 p. 313). Improving communication, stimulating the senses, assisting in lost ability and

increase autonomy are the positive effects resulted from snoezelen intervention. This is the reason as to why the author related Kitwood work with snoezelen intervention.

2.2 Theories related to sensory loss

Hall and Buckwalter have developed a conceptual model, the Progressively Lowered Stress Threshold (PSLT), which posits that residents who have progressive dementia become less and less able to interpret, process, and adapt to environmental stimuli. Once the environmental demands exceed the patient's accommodation abilities, levels of stress increases and are manifested in, for instance, anxiety, agitated behaviors or aggression. On the other hand, Edelson and Norberg describe psychosocial withdrawal as a result of a lack of (adequate) stimulation whereby individuals become apathetic or engage in self-stimulating behaviors (Caniano 2006 p. 36). The research also noted that dementia residents have altered sensitivity to environmental conditions, which can results to behavior disturbances (Hoof et al. 2010 p.1244).

Progressively Lowered Stress Threshold (PLST) model is designed to promote more adaptive and functional behavior in residents with advancing dementia. It illustrates the need of promoting the remaining abilities in severed dementia resident's for instance nonverbal communication which is more beneficial to the resident who have impairment in verbal communication (Caniano 2006 p. 36).

Over arousal theory states that reduced activation would tend to lower signals and noise, the former probably more than the latter, rendering the organism more sensitive and less responsive. At first sight the changes with age in neural structures make it seem obvious that the elderly people would likely to suffer from under- activation.

Several researchers indicate that sensory deprivation results in delusions, disorientation, impaired concentration and motor skills and decrease motivation (Caniano 2006 p. 48).

3. BACKGROUND

This chapter explores the various content of previous research on the independent variable present in this study. Several previous researches paid a huge role in providing relevant information concerning the root of the problem. This chapter describes the concepts relevant for this study explaining what is already known about snoezelen for persons with dementia based on previous research. The changes experienced by aged adults as results of sensory decline and the stages of dementia are well described in this chapter.

The main subject matter in this study is snoezelen and its effects on persons suffering from dementia living in nursing homes. There have been several studies conducted on the topic of snoezelen and exhausted the need of multi-sensory stimulation and how it is used by dementia residents living in nursing homes. The benefits of implementing snoezelen in dementia care settings are well described.

3.1 Sensory loss in Aged Adults

As we age, our sensory systems gradually lose their sharpness. Because our brain requires a minimal amount of input to remain alert and functioning, sensory loss for older adults puts them at risk for sensory deprivation. Severe sensory impairments, such as in vision or hearing, may result in behavior similar to dementia and psychosis, such as increased disorientation and confusion. Several added restrictions, such as confinement to bed or a wheel-chair increases this risk.

With nothing to show the passage of time, or changes in the environment, the sensory deprived person may resort to repetitive problem behaviors as an attempt to reduce the sense of deprivation and to create internal stimulation/sensations (Hoof et al. 2010 p.1244)

Taste and Smell

Elderly people often have a reduction in the number of olfactory sensory neurons and bulb cells, this leads to a decreased sense of smell resulting in a decreased ability to identify odors. Age-related losses of smell and fine taste normally begin after the age of sixty.

Previous study indicates that person with a declining sense of smell is more tolerant of unpleasant odors, and this can be further exacerbated by smoking, some medications, and certain illnesses (Hoof et al. 2008 p.1248).

The study states that decreased salivary gland secretion also may affect taste sensation. It leads to less involvement in interpersonal communication, leading to decreased quality of life, and contributing to depression and apathy. The decline in taste sensitivity with aging is worsened by smoking, chewing tobacco, and poor oral care. This result in more complaints about food tasting unpleasant or unappetizing, and sometimes causing the person to stop eating altogether (Bakker 2003 p.50)

The impaired sense of taste and smell can result in a serious inability to sense danger, such as gas leaks, smoke or other odors, which would obviously interfere with taking the necessary steps for safety. Also, problems with taste may cause the person to overcook or make use of spoiled foods, raising the risk of food poisoning (Hoof et al. 2010 p.1248).

Touch

Touch is a wonderful and needed sense. The study indicates that the sense of touch decreases as we age because the skin's sensitivity decreases. The skin becomes less taut and has a loss of elasticity. Tissue loss occurs immediately below the skin. These changes are attributed to changes in the amount of fat below the skin, as well as decreased numbers of nerve endings. Loss of tissue and elasticity in skin cells means that older people may become less responsive to stimuli affecting our sense of touch. Because the skin loses sensitivity, an older adult may not experience pain until the skin has been damaged. The reduced fat can cause the body, particularly the extremities, to bruise or even tear for no apparent reason. Reduced nerve endings

can result in a person not noticing a cut, blister or other injury that can lead to infection (Kemmet & Brotherson 2008 p.3).

The decreased sensitivity may affect a person's ability to distinguish different stimuli or may reduce their reaction time. Individuals experiencing these disturbances are considered to be at high risk of injury of various sorts because they are deprived of the normal defense mechanisms that touch provides. The sense of touch includes perception of pressure, vibration, temperature, pain, position of body in space, and localization of a touch. Some of this sense of touch diminishes with age, but affects no more than 50% of older adults (Kemmet & Brotherson 2008 p.3).

The study argues that most pronounced changes occur in the feet, and changes become less apparent as we move up the body. A decline in the sense of perception in the feet contributes to increased danger of falling or tripping over objects. Changes in hand sensitivity will often lead to dropping of objects. Reason being the sense of touch is the most intact of all senses for older adults, and least impacted by advancing years, it can be the more important means of communicating, whether to attract residents attention, to reassure them, letting the residents know somebody is there to help, and to guide the residents in an activity (Kemmet & Brotherson 2008 p.3).

Touch is therapeutic since older adults may be touch deprived. In medical and institutional settings, such as nursing homes, there may be even fewer opportunities for touch and physical contact. Hand massage and other forms of touch can have a therapeutic effect as can the presence of animals especially cats and dogs (Bakker 2003 p.49*).*

Residents in severe stages of dementia who do not have access to animals may derive tremendous comfort from holding stuffed animals close to their body. Physical contact with the residents helps in gaining reassurance, attention, confirm communication and provide a greater sense of safety and security (Bakker 2003 p.49*).*

Hearing loss

Study indicates that hearing begins to be affected by the age of forty having high frequency pitches becoming less audible with less sensitivity to lower frequency pitches. Normal age-

related changes in the auditory system that result in hearing loss include loss of elasticity in the pinna, narrowing of the external auditory canal, added rigidity of the tympanic membrane, and ossicular atrophy. Inner ear changes include hair cell and organ of Corti degeneration and decreased elasticity of the basilar membrane. Aging of the central auditory system results in neuronal loss and decreased blood flow in the brain, this leads to sensory, neural hearing loss and diminished central auditory processing capabilities. In turn these results in decreased ability to understand speech, especially in a noisy environment (Hoof et al. 2010 p. 1250).

Other causes of hearing loss associated with aging include long-term exposure to noise and the use of autotoxin medications such as amino glycoside and macrolide antibiotics, loop diuretics, platinum-based chemotherapeutic agents, some nonsteroidal anti-inflammatory drugs and antimalarial medications. Tobacco use has also been associated with hearing loss. Hearing loss can also occur following bacterial meningitis, some viral infections such as adenovirus and herpes Zoster oticus, Lyme disease, and diabetes mellitus (Hoof et al. 2010 p. 1250).

Dementia residents may have a normal hearing, but they can lose the ability to interpret what they hear accurately. Underlying hearing disorders can also predispose a person to auditory hallucinations. For example, the sound of a telephone may be perceived as a small dog barking. Excess noise can result in confusion, overstimulation and difficulties in communication (Bakker Rosemary 2003 p.48).

The study further indicates that hearing loss being part of ageing process, many elderly can have it compensated with a hearing aid or can learn to use lip reading but for dementia residents, this becomes difficult. Burton and Torrington emphasize that it’s advisable to reduce environment noise for the dementia residents and this reduces behavior disturbances which affects them (Hoof et al. 2010 p.1250).

Vision loss

Ageing changes associated with vision loss include presbyopia as well as decreased light transmission of the ocular media and decreased pupil size, losses in contrast sensitivity, greater

sensitivity to and delayed recovery from glare, delayed dark adaptation, and reduced visual field and color discrimination. The most common age-related pathologic conditions resulting in vision loss are macular degeneration, diabetic retinopathy, cataract, and glaucoma (Hoof et al. 2010 p. 1249).

Dementia has severe impact on human visual system where the residents display motion discrimination, blurred vision and impaired spatial contrast. Another dysfunction diminishes contrast sensitivity which may exacerbate the effects of other cognitive losses, and increased confusion and social isolation. Study suggests that impaired visual acuity may be associated with visual hallucinations (Hoof et al. 2010 p. 1249).

3.2 Dementia

Dementia is a chronic disease that gradually robs the affected individual's thought processes and personality. American Psychiatric Association defined dementia as an acquired syndrome consisting of progressive deterioration in grobal intellectual ability of such severity that interferes with social and occupational performance. U. S department of Health and Human Service describes dementia as a relentless, irreversible brain disease that result in significant memory loss, decline in intellectual functioning and behavior changes (Kurucz 2010 p. 4).

Portics et al illustrates that most typical behavior and psychological signs and symptoms of dementia are categorized as agitation, psychosis and mood disorder. According to Kolanowski, Litaker and Baumann, dementia residents experience diminished cognitive abilities which make it difficult to verbalize needs, therefore a wide range of behavior symptoms were exhibited (Jennie 2008 p.1). Dementia progresses through the stages of mild, moderate and severe and the type of care needed changes throughout the stages (Kurucz 2010 p. 4).

Stages of dementia

There are numbers of theories explaining the developmental stages of dementia. For this portion of the literature review three stages of dementia are focused which consist of mild, moderate and severe developmental stages. This theory focuses on symptoms of decline that a person with dementia experience. It is important for the caregivers to understand these symptoms to accommodate dementia resident's specific needs while designing snoezelen plan to the individual suffering from dementia. This can be reviewed through memory test and also there several instruments which are in use to test the progressiveness of the memory (Caniano 2006 p. 8).

Mild stage

The early stage of dementia involves subtle changes Bowlby, S indicates. The dementia resident can recollect places by relying on the long-term memory, routines and behaviors. Bowlby and Siverstein stated that complex hobbies or learning newly acquired skills become challenging. Frequent recent memory loss, particularly of recent conversations and events. Repeatedly questions, problems expressing and understanding language or conversation. Writing and using objects become difficult. Depression and apathy do occur to mild dementia residents. Drastic personality changes may accompany functional decline. Need reminders for daily activities and difficulties with sequencing impact driving early in this stage. The early stages of dementia usually vary from one to three years (Caniano 2006 p. 9).

3.2.1.1

Moderate stage

This stage is characterized by a loss in the ability to carry out routine task which are daily task. In addition to a loss of short memory, difficult with orientation to time, person and places become more obvious. Can no longer cover up problems. Pervasive and persistent memory loss

impacts life across settings. Rambling speech, unusual reasoning, confusion about current events, time, and place is experienced. Potential to become lost in familiar settings, sleep disturbances, and mood or behavioral symptoms accelerate (Caniano 2006 p. 9, 10).

Nearly 80% of patients exhibit emotional and behavioral problems which are aggravated by stress and change. Slowness, rigidity, tremors, and gait problems impact mobility and coordination. These highlight the need to structure, reminders, and assistance with activities of daily living. This typical duration of time in the middle stage is anywhere from two to eight years. At this stage most residents are institutionalized (Caniano 2006 p. 10).

Severe stage

At this stage the resident is unable to communicate and relies on the sensory cues according to Bowlby's work. His study demonstrated that the environmental factors that stimulate the residents become critical at this stage. Short-term and long-term memory typically declines and the elderly need complete guidance.

They encounter confusion about past and present experiences while loss of recognition of familiar people and places is common in severe stage. Verbal skills are severely impaired which make it difficult to express their emotions. Residents are unable to care for themselves especially in activities of daily living (Caniano 2006 p. 10).

They are prone to falls and immobility is likely. Problems with swallowing, incontinence and illness are experienced. Extreme problems with mood, behavioral problems, hallucinations and delirium are common at this stage. Most of the residents at this stage are bedridden where the need of total support and care is experienced. Majority of the residents in severe stage die from infections or pneumonia. The severe stage is typically from one to three years (Caniano 2006 p.10).

3.3 Snoezelen and Dementia

Provision of structured sensory stimulation assists residents with moderate to severe dementia to process incoming stimuli in a meaningful and manageable manner (Chung et al. 2007 p. 109). Kok et al described snoezelen as an approach which actively stimulates the senses of hearing, touch, vision and smell in a resident-oriented, non-threatening environment. The study argues that snoezelen intended to provide individualized, gentle sensory stimulation without the need for higher cognitive processes, such as memory or learning, in order to achieve or maintain a state of well-being. Traditionally, snoezelen was applied in a special room with an array of equipment, offering multiple stimulation, covering all the sensory channels (i.e., a vibrating bed, soft comfortable furnishings, aroma steamers, spotlights, mirrors and music), both to stimulate and to relax (Weert et al. 2004 p. 1**).**

During the last decades, several psychosocial treatments have been developed in dementia care. Snoezelen is one of the approaches that are becoming more and more popular as a potential intervention on psycho-geriatric wards, also referred to as Multi-Sensory Stimulation (MSS). It was developed in the Netherlands, but spread rather rapidly across Europe, in particular the United Kingdom, in the1980s and 1990s. Chitsey et al, states that snoezelen beginning to appear in the United States. Snoezelen or multi-sensory stimulation has become widely used in the last 15 years to improve resident's quality of life (Weert et al. 2005 p. 24).

In the present study, snoezelen is extended to the dementia daily care in the sense that the residents receive snoezelen care in daily bases. According to Bensing study, application of snoezelen requires a resident-oriented attitude, knowledge and skills, allowing caregivers to incorporate personal circumstances such as lifestyle, preferences, desires and cultural diversity, in order to achieve or maintain a state of well-being.

The study further relate snoezelen with concept of 'patient-centeredness' which recognizes residents to be in the center of care, to be first priority despite the cognition or disabilities they are experiencing. The study suggests that caregivers should learn to adapt their attitude and practical skills to integrate multisensory stimuli in the care. The ultimate goal of integrated

snoezelen is, consistent with the concept of patient-centeredness, the caregivers' understanding of the residents' real needs, preferences and wishes (Weert et al. 2005 p. 25).

Snoezelen aims to reduce residents' maladaptive behaviors, to increase positive behaviors and to improve their mood. Researchers describe the therapeutic benefits of snoezelen in terms of relaxation, behavior modification or improved quality of life.
This intervention which is integrating snoezelen in the daily routine of dementia care, aims to have a great effect on residents suffering from moderate to severe dementia in long term care. Consistency is needed in snoezelen which learns through day and night for better results (Lancioni et al. 2002 p. 175).

Study suggested that daily care aspects of snoezelen intervention for instance, are used in the living room at the bedside and in the bathroom. This aims to change the mood and behavior of the dementia residents this being the areas the residents spend most of the time in the course of the day. Snoezelen intervention is also a way of personality approaching residents in our everyday dealings with them. This has caused more attention to be paid to the individual needs and wishes of the residents within the framework of the daily care (Weert et al. 2005 p. 313).

In daily care the use of dolls, hand puppets and teddy bears is quite common. This creates an atmosphere of warmth and confidence, in which the dementia residents can "tell" about their inner world through subtle responses such as facial expressions and touch. This increases their involvement in their environment. New kind of communication may emerge from this interplay of responses and counter- response. For instance when dementia resident is given a full bag with rice in it in the snoezelen environment, one does not expect the person to tell what is in it. The central thing in it is the person's experience of the material. It is the nature of the experience that is important rather than the exactness with which it is comprehended. This sharing of person experiences creates mutual trust. To find common ground with the dementia resident, one must share in the experience of the material which they are familiar with. Shared experience and the use of bodily contact can open doors to a dementia resident inner world (Weert et al. 2005 p. 313).

3.4 Elements used in Snoezelen

Kovach study indicates that most elderly people experience a low level of stimulation or too much of stimulation this result in negative and null behavior which is defined as physical inactivity and having no focus with eyes open. Researchers suggest that an increase in negative and null behavior is not only a consequence of the progression of the disease but is also due to lack of sensory stimulation (Caniano 2006 p. 48).

In Snoezelen environment the use of light and sound effects are commonly used as well as a variety of materials for touching, smelling and tasting. All these senses are stimulated when snoezelen is used.

Aromatherapy is one of the elements that can be incorporated in a treatment which will assist in stimulating the sense of smell as stated by Baseley & MacNeil. Researchers indicate that scents can influence individual mood and behavior. Thus, certain scents may reduce stress, anxiety and depression. Useful oils include lavender, which produces a calming uplifting effect; Chamomile, which reduces depression, insomnia irritability and mood swing; and lemon balm, which reduces insomnia and mental stress (Caniano 2006 p. 49).

Although the normal ageing process results a decrease in visual acuity, visual stimulation may still be an appropriate therapy since it can minimize confusion and improve well-being. Other study findings suggest that bright light therapy improves or stabilize sleep and rest. There is evident that light panels displaying different patterns and speed these increases laughing, vocalization and smiling (Caniano 2006 p. 51)

Residents with dementia commonly misinterpret sounds. By reducing background noise and offering pleasant sounds, the person with dementia may become more aware of his or her surroundings. Pleasant sounds may include birds, water, wind chimes and many others which can be soothing sounds. Many research suggested that use of familiar music create good memories and improve the mood of the resident (Caniano 2006 p. 51).

Touch is an important feeling that can assist in building a connection between the older adult with dementia and the environment. Touch may be incorporated in the snoezelen room therapy through a bag full of sand, soil, dolls as the study illustrate. Previous study indicates that

dementia residents who received warm touch from the caregiver when receiving care showed signs of relaxation and anxiety decreased (Caniano 2006 p. 52).

Responses to stimulation of older adults with dementia in their late stages include: eye contact, blinking, a turn of head either away or toward stimuli, reaching out for the stimuli, changes in facial expressions or verbalization (Caniano 2006 p. 52).

3.5 Snoezelen intervention environment

The author argues that sensory stimulation is optimal for the mind since persons suffering from dementia often have an inability to recognize the time, person and place; and therefore, incorporation sensory stimulation in the snoezelen environment make an uncertain environment less difficult to comprehend; the greater the amount of stimulation, the greater the probability that the dementia resident will be aware of the surroundings (Caniano 2006 p.11).

Snoezelen environment for the dementia residents should provide an opportunity that allows them to seek familiar and identifiable objects to decrease the likelihood that a negative reaction may occur. They should always feel safe and secure. Findings by Menditto indicated that person-centered planning treatment based on items and activities preferred by individual with profound disabilities could increase social skills especially in more naturalistic environment. Dementia residents need to be able to rely on the environment for orientation and reminiscence (Fava & Strauss 2010 p. 161).

Snoezelen environments are thought to facilitate relaxation, provide enjoyment experience and inhibit behavioral changes. The stimulation is believed to promote a sense of enjoyment and a relief from tension and pressure, with consequent improvement in general behavior. Kwok et al. study reported several functions that can be promoted in a Snoezelen environment, which are relaxation, development of self confidence and achieve a sense of self control. Encourage exploration and creative activities, provide leisure and enjoyment, promote choice, improve attention span and reduce challenging behavior (Hotz et al. 2006 p. 881**).**

4. PREVIOUS RESERCH ANALYSIS

A study conducted by Weert, Dulmen, Spreeliwenberg Ribbe and Bensing (2005) observed the behavior and mood effects of snoezelen. They predicted that the study would lead to significant changes in the well being, adaptive, and maladaptive behaviors of the residents with dementia at the chosen nursing homes (Caniano 2006 p. 52).

Well being of the adult is defined through his or her happiness and mood state. Adaptive behavior is a measure of the attentiveness and responsiveness the person has to the environment his or her initiative and relationships whereas maladaptive behavior involves demonstrating antisocial, apathetic and anxious behavior, agitation, aggression, depression and disorientation (Weert et al. 2005 p.25).

The study was performed in six Dutch Nursing homes with 125 residents who experienced moderate to severe dementia, moderate and severe ADL dependency, and a partial or complete hearing and vision impairment. The effectiveness of snoezelen was studied by observing the residents involved in the study on a video tape and the effectiveness was measured by resident's agitation, depression and mood (Weert et al. 2005 p.27).

The result of the study is positive and congruent with the hypothesis. Residents in the experimental snoezelen group displayed a decrease in apathetic and aggressive behavior and depression. They also observed to be happier, more a response to verbalization, and exhibited less boredom and sadness.

Researchers indicate few reports of negative outcomes of snoezelen studies. Thus the overwhelming positive result of this study suggests snoezelen to be worthwhile treatment for dementia.

Another interesting study conducted was a comparison of the effects of snoezelen and reminiscence therapy on the agitated behavior in dementia care. Twenty residents suffering from dementia that were observed to display maladaptive behavior were involved in the study (Baillon, Dieper, Prettyman Redman, and Rooke & Campbell 2004). The results of the study do not show much significant differences between snoezelen and reminiscence therapy treatments

or that one of the intervention is more beneficial than the other, but they indicate that snoezelen and reminiscence therapy have a positive effects on persons with dementia, however snoezelen and reminiscence therapy are interventions from which dementia residents derive pleasure and happiness and thus are appropriate for these people.

A study conducted in Netherlands for implementation of snoezelen in pychogeriatric care: an evaluation through the eyes of caregivers. Eighty caregivers attended training programme where they were divided into study groups which was aimed to evaluate the implementation process adapted where necessary and start new activities, appropriate to the needs of the own ward. After the training the caregivers started to use of snoezelen in the 24hour care of the residents. This was done through the use of individual snoezelen plan based on those observations. Snoezelen plan described resident behavior likes anxiety, distress, aggression and how to reach on those behaviors.

Stimulus preference screening was arranged to find out what stimulus the residents enjoy most. The results show positive changes in residents. Residents who are difficult to establish with can now be reached (Weert et al. 2004 p.10).

Table 1. Summary of the previous studies

The previous study was summarized as follows:

Authors\sources	**Articles**	**Results found**
Weert et al. (2005) Ebsco	Behavioral and mood effects of snoezelen integrated into 24-hour Dementia care	Apathetic behavior improved, residents showed more happiness and enjoyment, responsive to speak and talk more frequently. Less sadness, inactive
Weert et al. (2005) Google scholar	The effects of psychosocial methods on depressed, aggressive and apathetic	Improved well-being (less sadness) Relaxation was noticed, less apathetic

	behaviors of people with dementia	
Weert et al. (2004) Ebsco	The implementation of snoezelen in psychogeriatric care: an evaluation through the eyes of caregivers	Eye contact and communication improved Agitation, restless decreased. Satisfaction and relaxation noted.
Svansdottir & Snaedal (2005) Google Scholar	Music therapy in moderate and severe dementia of Alzheimer's type: a case-control study	Behavior disturbances lowered, anxiety was improved, reminiscence (lost memory retrieved) social contact improved
Tilly & Reed. (2004) Google scholar	Evidence on interventions to improve quality of care for residents with dementia in nursing and assisted living facilities	Aggressive and agitation was improved Improved communication leads to positive statements from residents
Hope & Watermann. (2004) Ebsco	Using multi-sensory environment (MSEs) with people with dementia	Increase in autonomy (residents were free in airing their views). Good relationship between residents and the caregivers improved dramatically.
Caniano (2006) Google scholar	An Integrate Approach to Therapeutic Outdoor Space in Dementia-Care Units	Improved mood, reduced anxiety and disturbing behavior. Well-being improved
Hoof et al. (2008) Google Scholar	The indoor environment in relation to people with dementia	Improved sleep, agitation, aggressive decreased stress also lowered Improved appetite
Weert et al (2005) Ebsco	Effects of snoezelen, integrated in 24hr dementia care, on nursing- patient communication during morning care	Non-verbal communication increased (eye contact, effective touch, number of smiles) Verbal communication improved, increasing autonomy (giving opinion, making choices).
Weert et al. (2006) Ebsco	Nursing assistants behavior during morning care: effects of the implementation of snoezelen,	Resident-directed gaze and affective touch increased.

	integrated in 24-hr dementia care	
Baker et al. (2003) Google scholar	Effects of Multi-Sensory Stimulation for people with dementia	Attending to activities, reduced anxiety, sleeping appropriately, relaxed, related well
Baillon et al. (2005) Google Scholar	Variability in response of older people with dementia to both Snoezelen and Reminiscence	Decreased agitation behavior, Mood improved (happiness, relating well to others, attention to environment, enjoyment, relaxation.

5. METHODS

This chapter deals with the methods and design of the study. This study is a qualitative study in which the methods used in the building of the entire study are a content analysis derived from previous researched articles. These different methods play important roles in the different parts of this study. Literature review is used to develop the theoretical background; framework and progression of the study while content analysis is used to analyze the data derived from the previous researchers in order to arrive at the results and answer the questions posed by the study.

5.1 Data collection

The study uses a review of past research articles on the subject snoezelen intervention in dementia elderly in nursing homes and its effects. The use of literature review in this study is used to develop a frame for the main work. The review of past research articles is done by summarizing the findings of these studies and breaking them down into themes.

The articles used in this study are previous studies done on the subject of snoezelen implementation on elderly residents suffering from dementia. The articles retrieved from Ebsco and Google scholar databases. Other literatures were cited in books relating to the topic of the study. The study is written in accordance with the writing guidelines of Arcada University of Applied Science.

The criteria used in selecting the researched articles used in the study were free scientific researched articles published from year 2002-2010. To identify potentially useful items the authors conducted a comprehensive search of Google scholar and Ebsco databases. Though, other older published articles which seemed of beneficial to this study were also included.

Various combinations of relevant search words such as snoezelen, dementia, nursing home, and elderly people were used. This resulted in the collection of 589 hits. These were further narrowed down to 185 hits due to change of some key words like dementia residents, multi-sensory stimulation were used. It was again narrowed down which resulted in the inclusion of 69 hits after adding some keywords like snoezelen intervention. From 69 hits most effective articles corresponding to the research question were selected and mostly those targeted and favored the

residents rather than caregivers. Also the articles which had well elaborated findings were put into consideration compared to those who had limited findings. It finally ends to 13 articles which were used in analyzing the results from previous research articles.

The aim of this study is to investigate the positive effects of snoezelen on dementia residents living in nursing homes. This being the case, the articles chosen were literatures relating to the main aim of the study and also led to answering the research question used in the study.

5.2 Literature review

Literature review is a way of collecting data, exhaust serches formulated and related to the line of study. Literature review in this sense refers to deduction from past researches, arguments conducted on the main subject of this study, the subject matter being the positive effects of snoezelen on dementia residents living in nursing home.

Literature review in this study is used to broaden the writer's knowledge derived from previous researches surrounding the subject "use of snoezelen on dementia residents" in order to come up with a clear view of the aim of this study, at the same time trying to answer the questions posed by the study.

5.3 Qualitative content analysis

Qualitative content analysis is described as a research method for the subjective interpretation of the content of text and data through the systematic classification process of coding and identity themes or patterns. The researcher is ought to read, reread the texts to identify the emerging themes which are useful and group them as they are related to each other (Graneheim & Lundman 2004 p. 107).

Denzin and Lincoln claims that qualitative research involves studying things in natural settings, attempt to make sense or interpret phenomena in terms of meaning people bring to them.

According to Krippendorff, content analysis is a systematic and objective means of describing and quantifying phenomena also known as a method of analyzing documents. He further describe content analysis as a research method of making replicable and valid inferences from data to their context, with the purpose of providing knowledge, new insights, a representation of facts and a practical guide to action (Elo & Kyngäs 2008 p. 108).

This study was conducted through the guidelines of qualitative content analysis research method where all steps required to analyzing the data were followed. The articles that were collected from this study were selected carefully by the author. The previous researched articles considered in the study were those which favored the residents which are the elderly people suffering from dementia in Nursing homes. The credibility of previous articles used in this study was put into consideration which is the author, year of publication and the presentation of the findings. The articles also highlighted the positive effects of snoezelen application in dementia care.

There were common themes that emerged from all the articles that were collected. They were repeatedly read and highlighted through coloring or underlined so that they can be traced easily. Bookmarking also was included in the study for easier relating or contrasting the data from different articles. Beneficial data which was considered in the study were findings retrieved from previous research indicating clear results after the experiment. This helped in answering the research question posed by the study.

Since the method used for this study was content analysis the author grouped the common themes that emerged from the findings into different categories which are as follow: core theme, theme and sub-theme. The main idea was to analyze the findings which intended to answer the research question which is “How can snoezelen intervention positively affect dementia residents in nursing care?

Table 2. Summary of the articles used in analysis

Author	Articles	Results
Caniano,G. Marie (2006)	An Integrated Approach to Therapeutic Outdoor Spaces in Dementia Care Units.	Improved mood, reduces anxiety and disturbing behavior
Baker, R., (2003)	Sensory loss, Dementia and Environments.	Improvement of sleep patterns.
Jeannie, M. (2008)	Alternative Therapies of Individual with Dementia.	Agitation behavior decreased dramatically
Valerie. Cotter (2007)	The Burden of Dementia	Scenes of nature safe wandering space
Fava, L. & Strauss, K. (2010)	Multi-Sensory Rooms: Comparing the effects of the Snoezelen and the Stimulus prevalence Environment on the Behavior of the Adults with profound Mental Retardation.	An increase of social and interactive behavior.
Goodall, D. & Etters, L (2005)	The Therapeutic use of music on Agitation Behavior in Those with Dementia.	Emotional when listening to music
Hope, K., & Watermann,.H ., (2004)	Using Multi-Sensory Environments with dementia people.	Residents give opinions and make choices
Weert, J.C.M. van et al. (2005)	Effects of snoezelen, integrated in 24hr dementia care, on nursing- patient communication during morning care	Nonverbal communication increased (eye contact, effective touch, a number of smile) Verbal communication improved, increasing autonomy (giving opinion, making choices).

Weert et al. (2004)	The implementation of snoezelen in psychogeriatric care: an evaluation through the eyes of caregivers	Eye contact and communication improved Agitation, restless decreased. Satisfaction and relaxation noted.
Verkaik,et al (2005)	The Effects of Psychosocial Methods on Depression, Aggression and Apathetic Behavior of people with Dementia.	Behavior disturbance decreased.
Chung, J.C.C., et al (2007)	Sensory based intervention for management of maladaptive behavior in people with Dementia	Improvement in maladaptive behavior.
Persaud, M. L. (2009)	Pleasure in the daily lives of people living with Advanced Dementia in a long term care facility.	Sweet smelling and tasting food, type of touch elicited some responses from the residents.
Baillon, S. ,et al (2005)	Variability in Response of Older People with Dementia to Both Snoezelen and Reminiscence.	Decrease in agitation was recorded higher in Snoezelen compared to Reminiscence.

5.4 Limitation of the study

There are several limitations which were encountered in the course of the carrying out this study. The availability of researched articles mostly researched on effect of snoezelen application on dementia residents living in nursing homes was limited. For those which were available the results were similar in several articles, while others had no clear elaborated findings on the research which lead the articles to be omitted from this study.

Most recent articles were locked so that the reader can purchase and as far as this study was concerned free articles were needed to carry out the study. Some authors were in almost every

article for instance Weert which narrowed the chances of diverse findings in the study. Diagnosis which is dementia in the study contributed in limitation of the study since some articles focused on mentally disabled children. This is because the multi-sensory stimulation was initially used for mentally disabled children and later it integrated to elderly suffering from dementia.

The year of publication which is years 2002-2010 played a role in study limitation though, the study would be much effective if the most recent researched articles were analyzed at least five years old.

The method of the study which is qualitative and content analysis from previous researched articles also limited the study for incase interview was carried out the study findings could be of more benefit to the study.

5.5 Validity and Reliability

Patton states that validity and reliability is are factors which help in analyzing research and quality of the results.

Joppe defines reliability as extents to which the results are consistent over time or if the results of the study can be reproduced under a similar methodology while validity determines how truthful are the results (Golafshani Nahid 2003 p.598).

The validity of a content analysis study refers to the correspondence of the categories to the conclusions, and generability of results to the theory. The validity of categories in simplicity concept analysis in particular, is searched by utilizing multiple classifiers to arrive at an agreed upon definition of the category.

In the study the author carefully studied the published articles that were chosen for this study. The results that were relevant and corresponding to the research questions were grouped into different categories as explained in the methodology part of this work. The categories were according to the different themes which were found in different categories and the author concentrated on them.

The author felt that the naming was consistent with the units in the categories and this was contributing to the building of the work to reach the answers to the research questions. If another research did the work the results will most certainly end up with almost the same conclusions and results but the naming of the categories could differ.

The published articles were retrieved from reliable databases that contain scientific research work done by professionals in the nursing field for instance geriatrics.

The results found in the study have all emerged from scientific articles that were used for this study and the author has not included any other sources in the results. The author has neither used past experiences nor the authors' knowledge to influence or alter the results.

5.6 Ethical consideration

Prior to writing this report the author studied thoroughly and understood the Helsinki Declaration. The scientific published articles that were used as the basis for the study were reported in the truth throughout the study.

Quotations gotten directly from the articles and books used for this study have been quoted and written in inclusive of the authors name and the year of publishing. The author has fully documented sources for ideas and words used in the study.

6. RESULTS

This chapter consists of the presentation of the results found in the study. These different categories are tabulated to aid easy understanding of the findings.

There are three categories in which the articles found was divided into and are as the name of core-theme, theme and sub-them. It is clear to see the idea behind the three categories whereby the elements in each category were grouped into groups that shared the same themes. The groups that shared the same themes were linked to the main categories which in this study are the research questions.

Table 3. Summary of positive effects on snoezelen

The findings that emerged from the articles used in the study are further discussed below according to the research question. Overview of the Core-themes, Themes and Sub-themes 'positive effects of snoezelen intervention towards dementia residents'

Core -Themes	**Themes**	**Sub-themes**
Communication	Verbal and nonverbal communication improvement	Smiling Eye contact maintained More responsive to speaking Increase in autonomy
Well-being	Increase in Well-being	Better mood Sign of happiness
Reminiscence	Reminiscence signs increase	Show emotions Recall memories
Behavior	Maladaptive behavior Adaptive behavior	Agitation Wondering Enjoying self Related well
Environment	Friendly environment	Touching, holding objects More attentive to activities
Relaxation	Relaxed feeling	Sleeping appropriately Calming effect

6.1 Communication

Most of the articles which supported the need of implementing snoezelen interventions on dementia residents residing in nursing homes indicated the need of improving communication while caring for the dementia residents. Most results illustrate the need for communication mostly to the severe dementia residents which is nonverbal form of communication due to progressing of dementia disease.

Nonverbal communication supports the verbal communication, conveys interpersonal attitudes and emotional states and functions as a substitute for language if speech is impossible. Communication was reflected in the themes interpreted as verbal and nonverbal communication which was an interpretation of how the residents reacted after snoezelen intervention was implemented. The theme was drawn from the sub-themes smiling, eye contact maintained, more responsive to speaking and increase of autonomy.

Verbal and nonverbal communication improvement

Implementation of snoezelen intervention in dementia care in nursing homes indicated that there were positive results as far as communication is concerned. The improvement in both verbal and nonverbal communication was highly significant for dementia residents.

Nonverbal communication was demonstrated mostly by severe dementia residents who are prone to be left out as far as communication is concern. Severe stage of dementia experience severe impairment of verbal skills which make it difficult to express their emotions (Weert et al. 2005 p. 312). Nonverbal communication supports verbal communication, conveys interpersonal attitudes and emotional states and functions as a substitute for language if speech is impossible. Nonverbal communication was experienced through smiling, eye contact which improved a lot in favor of the experimental group. Nonverbal communication was seen as a way of expressing their inner feelings (Weert et al. 2005 p. 313).

Verbal communication also improved a lot according to the study findings. This also was in favor of the experimental group of snoezelen intervention. Resident's communication demonstrated a significant increase in showing autonomy. It was also noted that residents also showed more respond to speaking that is could pay attention and show more interest than before (Weert et al. 2005 p. 406)

Smiling

Most results from the previous study indicated that some of the dementia residents smiled most fluently when receiving care than before. This was noted by the caregivers who implemented the snoezelen intervention in their daily care. Smiling as a form of nonverbal communication, convey interest and warmth. Facial utterance of friendliness was also noticed from the residents (Weert et al. 2005 p.316).

Eye contact maintained

Eye contact being one of the nonverbal ways of communicating increased during care, according to the research findings. This was demonstrated through directed gaze, turning the eyes and face around when the caregiver is attending them (Weert et al. 2005 p. 319).

More responsive to speaking

The study findings favored the experimental group where residents showed more attentive and responding to the caregivers as they attend to them. They showed more interest in speaking and increased verbal utterances (Weert et al 2005 p. 30). There was evident that residents increased social and interactive behavior while receiving snoezelen intervention this was noted by Fava & Strauss (2010 p. 161).

Increase of autonomy

This was noticed in verbal utterances where residents were making choices and giving opinions. According to the research done the findings indicate that during snoezelen activities residents were able to give opinions and make choices and this is ethical matter (Hope & Watermann 2004 p. 55). In support of autonomy, Kitwood recognizes dementia residents as being still capable of communicating their desires and feelings and living in a world of relationships.

6.2 Well-being

Residents suffering from dementia tend to have a low quality of life or their well-being deteriorate from the poor care. The main goal of snoezelen program in dementia care is to increase their well being till their last minute of their life. The findings illustrate how well-being is an essential need for dementia care and how it can be retained through use of snoezelen intervention in attending dementia residents. Kitwood work challenges caregivers to provide care that enhance well-being and maintain selfhood and dignity (kitwood 1997 p. 22)

According to this study well-being was reflected in the theme named as increased in well-being. This was interpreted as per how the residents felt and thought about themselves after snoezelen intervention was implemented.

Increased of well-being

The study indicates the importance of well-being to all human being irrespective of their diagnosis. This means that even dementia residents are entitled for a care which promotes their well-being. The residential well-being is defined through their happiness and mood state (Caniano 2006 p. 52).The study noted the increase of well-being in the residents which received

snoezelen intervention in their daily care. This theme was drawn from the sub-themes: better mood and sign of happiness.

Better mood

Mood change is a common symptom of dementia residents due to sensory decline caused by dementia. The mood change includes constant sadness, bored, feeling empty, hopeless, poor self esteem, loss of interest in activities were noticeably improved This was noted by the caregivers who were caring for the residents in snoezelen intervention group (Weert et al. 2005 p. 30).

Sign of happiness

Research findings indicated that the residents experienced induced greater happiness and calmness and reduction in sadness. This was measured through facial expression (Weert et al. 2005 p. 30). Some other studies reported that dementia residents were happier and enjoyed life more than before. One study found that residents appeared happier, less bored, and more likely to interact with others immediately after a multi-sensory session, with similar results found in another study in which the authors reported that residents appeared happier immediately after a session (Edgerton & Richie 2010 p. 43-45).

6.3 Reminiscence

Reminiscence refers to recollections of memories from the past. Residents with dementia usually have better preserved remote memory than recent memory. Recollecting past experiences and events is enjoyable for the residents and reserves to reinforce to them who they are and where they come from and put the current events into perspective. Photo albums, familiar old music are known to bring about the past memories.

The study noted that dementia residents experience inner self and interpersonal skills. It gives the residents a sense of value, importance, belonging, power and peace. This theme was drawn from interpretation of how the residents felt after snoezelen intervention. This was described as the theme reminiscence signs increase which was drawn from sub-themes: recall memories and show emotions.

Reminiscence signs increase

As a means of psychological support reminiscence is aimed at generating self-esteem and the expression of individual identity. Increase ability to communicate and practice self expression social interaction through sharing of experiences. This helps at increasing feelings of belonging, togetherness, individual identity and unique expression of each person.

The study findings had noted the increase of reminiscence among the residents which was experienced by the caregivers when attending the residents.

Recall memories

Some events in snoezelen activities remind the residents past experiences and events which lead them open up. This helps the residents and caregivers to communicate and relate well and also the caregivers are able to learn more about their past life and hence what kind of care they need to offer.

Show emotions

The findings illustrate that some participants were emotional mostly when they listened to their favorite music or recall certain memories derived from the snoezelen activities. The research

indicates that by using individualized music which has meaning to the residents it elicit positive feelings and behavior (Chung et al. 2007 p.107).

Kitwood suggests that much can be done to maintain identity in the face of cognitive impairment. Knowing in details about each individual's life history ; even if a person cannot hold on to his or her own narrative identity, due to loss of memory, it can be still be held by others (Kitwood 1997a).

6.4 Behavior

Behavioral disturbances are commonly seen with most residents suffering from dementia at some point in their course of life. They cause immense suffering and put others in danger of hurting others or themselves. Behavior disturbances are responsible for caregiver stress, institutionalization, and hospitalization. Behaviors disturbances such as wandering, beating, screaming, agitation and aggression and many others lead the residents to restrain and these can lead to more hurting or even death.

Addressing the causes of behavioral disturbances such as comorbid medical illnesses, polypharmacy, pain, personal need and environmental factors are critical to a successful outcome. Many behavioral disturbances such as wandering and hoarding are not amenable to pharmacotherapy. Nonpharmacologic interventions are the mainstay of managing behavioral disturbances.

The results from the findings in snoezelen activities show that it reduces the behavior disturbances but temporary like any other activity which tends to get the residents involved and leads to improvement in behavior. This was interpreted from the theme maladaptive behavior which was drawn from the sun-theme: Agitation and less wandering while adaptive behavior drawn from sub-themes enjoying self and related well.

Maladaptive behavior

This refers to types of behaviors that inhibit a person's ability to adjust to particular situations. This is a common challenge experienced by dementia residents resulting in poor quality of care. Evidence from the previous research indicated that there was significant decrease in maladaptive behavior towards experimental group.

Agitation

Study by Kalonowski defined agitation as verbal, vocal or motor activity that may be abusive or aggressive towards self or others (Jeannie 2008 p. 3). The study findings indicated that agitation behavior decreased dramatically. This was carried out by The Agitation Behavior Mapping Instrument (ABMI) which is designed to record the frequent of Agitation behavior three minutes' episodes by direct observation (British journal of occupational therapy 2006).

Wandering

Wandering occurs in 6% to 100% of dementia residents during moderate stages which is a sign of unmet needs. Unsafe wandering can put the residents in a risk of falls, injuries to themselves or others and this leads to physical and chemical restrains (Cotter 2007 p. S194).

Wandering can be beneficial to the residents since it promotes circulation, oxygenation and exercises, as well decrease contractures. The study indicates that experimental group residents wondered less and safely after the snoezelen implementation. For instance, the study found that by simply decorating nursing home corridors with scenes of nature and human life, the residents were more likely to spend time in this area, thus giving them a safe place to wander (Cotter 2007 p. S196).

Adaptive behavior

This is the positive behavior which is associated with a favorable environment and good care. Residents experiencing positive behavior are less venerable to restrain and or any negative kind of care. The study findings indicate that pre-social behavior improved well in experiential group which means that the residents behaved more socially than before (Fava & Strauss 2010 p. 165).

Enjoying self

Marshall & Hutchinson findings indicated that even dementia residents can enjoy them self when they are in a favorable environment. For instance, when happy birthday is being sung, residents actively participate clapping their hands or singing along with the song (Jeannie 2008 p.5).

Related well

Music therapy as one of the snoezelen intervention, illustrate positive effects when played during meals and bath times can calm the residents and hence relate well with the caregivers. The authors indicate that music also encourages the residents to participate and engage in their surroundings (Jeannie 2008 p.5).

6.5 Relaxation

Anxiety is a common symptom in dementia residents which lead to behavior disturbances. When the dementia residents are unsure of the environments or their needs are not met they experience anxiety and lead to panic. Snoezelen activities indicates that dementia residents get relaxed due to the different therapies used in snoezelen application such as soft low music, touch and lights. According to this study relaxation was reflected in the theme entitled relaxed feelings which was

drawn from the effects noted on the resident's receiving snoezelen intervention while sub-theme are calming effect and sleeping appropriate.

Relaxed feelings

Dementia residents experience anxiety most often which is one of the symptoms especially in mild to moderate dementia. Baseley & MacNeil noted that aromatherapy as one of the Multi-sensory stimulation packages is associated with calming down the residents after using it on agitated residents (Weert et al. 2004 p. 10).

Sleeping appropriate

Good sleep is a sign of relaxed mind and body. The study findings indicate that there can be notably improvement in sleeping pattern in the presence of appropriate environment. When the dementia needs are met the feeling of relaxation is experienced. This helps them to calm down effect and leads to improved sleep patterns (Bakker 2003 p.6).

Calming effect

If one need is met, this will have an effect on the other needs too. For example dementia resident who feels more secure in attachment is likely to be able to give more attention to an occupation, being less distracted by anxiety and less invaded by fear (Kitwood 1997 p.84). This was noted during the findings which reported that residents were happier and enjoyed life more. Those who were restless and aggressive become more relaxed and content, whereas those who were difficult to establish contact with, could be reached (Weert et al. 2004 p. 10).

6.6 Environment

Dementia residents respond to people in circumstances and environments. They interpret the questions or events that face them but as their dementia progresses interpretation becomes different to that of other people. Dementia residents are always experiencing environmental conflict where they fail to recognize the environment they are in. Loud sound, dark environment creates more conflict in the lives of dementia residents and hence leads to panic and confusion. Atmosphere as a core-theme was reflected in the theme friendly environment. This theme was drawn from interpretations of how residents felt in relation to their surroundings after the implementation of snoezelen. This was presented as sub-theme: touching, holding tight the objects, more attentive to activities and less anxiety.

Favorable surroundings

A study by Verkaik et al. (2005) noted that one of the significant effects of snoezelen intervention is to create an environment where the dementia residents can feel secure and safe to be. The surrounding environment should be attractive and of nature. By keeping the environment easy to understand and negotiate these reduce the feeling of fear and insecurity. Unfamiliar environment creates more confusion, increase of anxiety on dementia residents these leads to several behavior disturbances (Hodges et al. 2007 p. 14).

Touching and holding objects

Several previous studies noted that dementia residents are fond of holding objects and touch them when they are in a familiar environment. It also demonstrates that when relaxed and calm they become friendly to what is surrounding them. This is demonstrated through holding tight dolls, touching objects. The research study noted that aromatherapy and snoezelen materials had positive effects on dementia residents: “We got a lot of cuddy animals and observed the residents reacting to them. *Now you see a lot of people walking with the cuddy toys, a lot more residents*

than I had expected. I am really so surprised about the effects of aromatherapy" (Weert et al. 2004 p. 406).

More attentive to activities

It has been documented that social activities like listening to music, playing games like hitting balloons to each other or rolling soft balls do bring the majority of residents on board. It brings humor and creates sense of belonging (Weert et al. 2004 p. 10). Kitwood identify the primary task in the new person-centered culture of dementia care as improving the depth and quality of interaction (Kitwood 1997). He moves on to suggest that all individual are unique and have an absolute value…. Individual do not function in isolation, they also have relationships with others; all human life is interconnected and interdependent (Kitwood 1997 p.47)

7. DISCUSSION

The result of the present study support that Snoezelen/ Multi-sensory stimulation has a positive effects on persons suffering from dementia ranging from mild to severe level of cognitive. Residents receiving snoezelen approach in their daily care demonstrated significant more improvements in behavior disturbances. Several evidences demonstrated that agitation and aggression improved after the intervention. Experimental group illustrated positive behavior (adaptive behavior) which are relating well with caregivers, responsive to speaking and appeared happier (Weert et al. 2005 p.30).

Wandering as one of the behavior disturbances affecting dementia residents was reduced as reported in a previous study. For, instance the study suggested that by simply decorating a nursing home corridors with scenes of homelike atmosphere, the residents were more likely to spend most of the time there making it a safe place to wander (Cotter 2007 p. S 196).

Another study noted that residents in experimental group reacted to the cuddy animals for instance walking with the cuddy toys and holding them. Holding and touching objects like a doll or stuffed animals provides sensory stimulation and comfort to the residents. This suggested that residents were actively involved in the sensory environment hence promoted social behavior (Weert et al. 2004 p. 10).

Improvement on communication was reported indicating that residents related better after the snoezelen intervention than before. Emotions and recall memories were experienced during the snoezelen intervention. The researchers noted that some residents were responsive to speaking while others spoke with long phrases. Smiling and eye contact as a nonverbal way of communication was noticed especially from dementia residents who are in severe stage. This suggests that empathy and affection were mainly expressed in a nonverbal manner. Further analysis of resident's communication showed a significant increase in autonomy that is giving opinion and making choices this was noted with residents in snoezelen experimental group (Hope & Watermann 2004 p. 55).

Previous study was carried out to compare snoezelen and reminiscence reported that the effects were almost similar when compared both interventions. Though the study indicated that snoezelen has greater benefit in reducing agitating behavior in dementia residents. Another study noted that some residents had a negative reaction in experimental group which made them discontinue though the number of residents in non significant compared to the whole group.

This research demonstrated that snoezelen is one of the arising interventions in dementia care settings nowadays with the aim of stimulating the senses for the residents in all aspects ranging from the senses by light, sound, feeling, smell and taste. Implementation of snoezelen intervention has demonstrated positive effects on dementia residents, though the results are relatively short lived (Cotter 2007 p. S195). This is the reason why the study encourages use of snoezelen stimulation intervention on a daily basis so that the residents can get stimulated all through their life in nursing homes.

The aim of the present study is to review the research on effectiveness of snoezelen in dementia residents. On reviewing the studies, it appeared that many researchers have investigated the use of snoezelen in dementia residents and the results emerged that the snoezelen stimulation intervention can be successfully implemented in dementia care to improve the lives and well being of dementia residents. This is done through focusing on a unique way of giving care to individual persons suffering from dementia that is treating them like individual for they have individual needs.

Snoezelen intervention model can be well related to person-centered care model in Kitwood work which emphasizes on the need to care for dementia residents as individual. Person-centered theory has influenced the field of dementia care since Tom Kitwood and Bradford dementia group began writing on the subject in the early 1990s. Person-centered care helped in improving the quality of life in nursing homes whereby the dementia residents are considered as “beings” that can still enjoy life. That is the same principle behind the use of snoezelen intervention in nursing homes for persons suffering from dementia.

The study was directed at improving the care of dementia residents residing in nursing home through application of snoezelen intervention. The aim of good dementia care according to Kitwood is “to maintain personhood in the face of the failing of mental powers (Kitwood 1997 p.

84). According to Kitwood, dementia care focuses only on the disease and its treatment and does not attend to a patient's personhood, treats the patient as a passive object, and is damaging to the patient. The philosophical underpin of this study is the support of personhood (Kitwood, 1997 p. 10). The evidence of personhood being supported includes positive effect, affection, warmth, humor, creativity and self expression and showing evident pleasure in their lives (Timothy 2003 p. 14).

According to Kitwood work, personhood is "standing or status that is bestowed upon a human being, by others, in the context of relationship and social is…..Implying recognition, respect and trust." This is well thought with snoezelen where the residents are encouraged to communicate, engage themselves with the environment and therapeutical touch which is a sign of trust and friendship all is well demonstrated in snoezelen intervention.

Person-centered Dementia Care is founded on the ethic that all human beings are of absolute of value and worthy of respect, no matter their disability, and on a conviction that people with dementia can live falling life. This helps in boosting dementia resident's self-esteem and hence overall well-being. Kitwood theory involves the establishment and maintenance of positive, supportive, social environments for persons with dementia which is well demonstrated in findings obtained from snoezelen intervention. In contrast, focusing on a patient's losses or deterioration may reinforce negative perceptions and treatment of individuals with dementia, and also may have significant impact on the progression of dementia (Timothy 2003 p. 14).

In support one of the positive effects of study which is autonomy, Kitwood recognizes residents with dementia as being still capable of communicating their desires and feelings, and of living in a world of relationship especially with those around them. Snoezelen intervention also encourages residents to voice their opinions and choices and this seems to improve their autonomy. Kitwood goes further and claims that these residents remain able to experience some "form of growth" even in the face of cognitive decline. This simply means they have feelings and they can also be "beings" to those around them.

Person centered care involves the establishment and maintenance of positive, supportive, social environments for dementia residents. In these contexts, the personhood of individuals with dementia may be enhanced by strengthening the person's positive feelings and nurturing the

person’s abilities or skills. As compared to snoezelen intervention dementia residents were enhanced to use the remaining abilities for instance those residents in severe stage managed to use nonverbal communication like smiling, touching and this makes them feel worthy living.

This study had several limitations which were encountered in the course of the research. The author could have preferred most recent articles ranging from 2008-2010 which could be more updated. Most of these articles required registration and payment to be retrieved but then this study was retrieving free articles which had few recent articles. The author was looking for the research articles and literatures which carried out the study on snoezelen intervention on dementia residents and this also contributed in study limitations.

The method of carrying the study also had some limitations since it was a qualitative study where the secondary articles were used. Greater depth information may have been obtained by conducting an interview by focusing on dementia residents in nursing homes which could be a group interview and personal interview of participants to evaluate their attitudes, negative or positive and to identify recommendations for the snoezelen intervention provided to them. This method could have added important qualitative data and greater insight into the participant’s thoughts and opinions.

The findings indicate that different resident's in the experimental group experienced different effects of snoezelen applications. This means that snoezelen could work better for some participants than others. Future research is recommended to investigate the effectiveness of snoezelen at an individual level, to find out whether some residents benefit more from the snoezelen intervention than others and why.

Snoezelen intervention is proven to be among the recommended non pharmacological intervention used in dementia care. Its positive effect on moderate to severe dementia residents is well demonstrated in most previous research done. The results illustrate well how the residents are affected after the snoezelen intervention in applied in dementia care. From the results it can be analyzed that snoezelen intervention gives life to dementia residents despite their level of cognitive decline especially those are in moderate to severe stages of dementia. In support of Kitwood theory of person-centered care of dementia residents, it well demonstrates how

dementia residents can enjoy life like any other if their care environment is well designed to fit their needs.

Let’s all give life to dementia residents by integrating snoezelen intervention in nursing homes in support of their quality of life in the midst of cognitive decline.

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