

Sensory processing disorder: Perceptions of the clinical role of the advanced psychiatric nurse

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Supervisor: Prof E du Plessis

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"And she turned her head to rest the gaze
of her eyes...the voice in her heart spoke
to her mind....you know this is the path
I have chosen for you..."

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All the adults and children living with mental health disease that crossed my path as a registered nurse and inspired me to obtain a post-graduate degree in psychiatric nursing.

I also dedicate this study to my unique and loving family for all you have done for me and for reminding me to be grateful for every opportunity that life has to offer.

PREFACE AND DECLARATION

This study is presented in the article format. Madelein Lang, a Magister Curationis (MCur) student, conducted the research and the manuscript was written under the supervision of Prof Emmerentia du Plessis.

The Manuscript: “Sensory processing disorder: Perceptions of the clinical role of the advanced psychiatric nurse” was compiled and written according to the Harvard reference style (manuscript: Chapter 1 & 3). Chapter 2 of the Manuscript was written using The American Psychological Association style (APA) and guidelines for authors information pack and will be presented for submission to *Health SA Gesondheid*. According to the authors information pack, the article is not to exceed more than 5000 words. The author could not adhere to this requirement because the study results and the discussion of the results (manuscript: Chapter 2) had to be discussed in detail to ensure that the findings were rich and descriptive. The word count would be limited according to the authors guidelines before submission to the journal.

Dr Emmerentia du Plessis granted her permission to the researcher to submit the article (manuscript) for examination.

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DECLARATION FROM STUDENT ABOUT AVOIDING PLAGIARISM

I, Ms Madelein Lang, ID 7701190047080, Student number: 10950184, hereby acknowledge that I have read the "Policy on Plagiarism and other forms of Academic Dishonesty and Misconduct" (NWU, 2011).

I also declare that I cited all authors and paraphrased the information cited in such a manner that the meaning of the words that the authors used were not taken out of context or that the opportunity for misinterpretation could be created.

Authors were acknowledged for their original ideas when I wrote material reflecting on those ideas.

I further declare that this dissertation is of my own work and I acknowledge the professional contribution of my supervisor, Prof Emmerentia du Plessis.



Ms Madelein Lang

ABSTRACT

Sensory processing disorder is a neurological condition that is a reality in the lives of many children. These children form part of the patient population to which advanced psychiatric nurses render healthcare. Currently there is no specific inclusion of formal education on this condition for the advanced psychiatric nurse and clarity on the clinical role of the advanced psychiatric nurse in sensory processing disorder is still unclear. This is a loss in clinical nursing practice with regard to diagnosis, treatment and research. The purpose of this study was to explore and clarify the perceptions of healthcare professionals in South Africa with regard to what the clinical role of the advanced psychiatric nurse is in sensory processing disorder with the intent to provide a description of this role to guide the future clinical practice of the advanced psychiatric nurse. An explorative and descriptive design was used. Sampling was initiated using a purposive sample that included healthcare professionals in the personal resource database of the researcher's private practice. Initial sampling was followed by snowball sampling if potential participants agreed to act as mediators in the recruitment process.

The Delphi technique was implemented with three sequential rounds, gathering data on the perceptions of the healthcare professionals regarding the clinical role of the advanced psychiatric nurse in sensory processing disorder. Three online questionnaires were sent via Survey Monkey. The first round included an open-ended question (sample size=18) to gather data on the opinions of the health professionals with regard to the clinical role. Data round 2 (sample size=18) included a statement questionnaire that were based on the perceptions of the participants of round 1 with agreed/disagreed answers using a 5-point Likert scale. In the third and final data round (sample size=18) the same statement questionnaire of the second round was sent back to the respondents together with the descriptive statistics and remarks gathered during round two with the purpose of giving participants the opportunity to review their responses from the previous round and to again agree or disagree according to the 5-point Likert scale. Quantitative data were analysed using descriptive statistics and the qualitative data were analysed with the use of thematic analysis.

Analysis of the data produced the following main themes – (a) Specialized training of the APN on sensory processing disorder; (b) Interventions carried out by the APN with regard to sensory processing disorder; (c) Adequate support to the family with regard to sensory processing disorder; and (d) Referral of a child with sensory processing disorder.

The study indicates that the healthcare professionals, who are experts in delivering healthcare to children with sensory processing disorder, agree that the advanced psychiatric nurse with additional training in this condition has a clinical role to play in rendering healthcare to these

healthcare users. Recommendations for nursing practice, nursing education and further research could be formulated in this regard.

Key words: sensory processing disorder, advanced psychiatric nurse, clinical role, diagnosis

OPSOMMING

Sensoriese prosesseringsteuring is 'n neurologiese toestand wat 'n realiteit is in die lewe van baie kinders. Hierdie kinders vorm deel van die populasie wat gesondheidsorg ontvang vanaf gevorderde psigiatriese verpleegkundiges. Daar is tans geen besondere formele opleiding rakende hierdie toestand vir die gevorderde psigiatriese verpleegkundige nie. Dit maak die kliniese rol van die gevorderde psigiatriese verpleegkundige by die behandeling van sensoriese prosesseringsteuring onduidelik. Die doel van hierdie studie was om die persepsies van professionele gesondheidswerkers van die kliniese rol van die gevorderde psigiatriese verpleegkundige in sensoriese prosesseringssteuring te verken en uit te klaar ten einde 'n beskrywing van hierdie kliniese rol te kan gee.

'n Verkennende en beskrywende ontwerp is gebruik vir die studie. 'n Paneel van kundiges wat gesondheidsorg verskaf aan kinders met sensoriese prosesseringsteuring is geselekteer deur gebruik te maak van 'n doelgerigte steekproef om die aanvanklike deelnemers te selekteer, gevolg deur die sneeubaltechniek wat behels het dat die deelnemers optree as tussengangers om verdere deelnemers te werf. Die Delphi-tegniek is gebruik, en dit het behels dat daar drie opeenvolgende data-insamelingsrondtes was wat bestaan het uit aanlyn vraelyste wat uitgestuur is met die gebruik van SurveyMonkey. Rondte 1 was een oop-einde vraag (steekproefgrootte $n=18$) wat die deelnemers aangemoedig het om hulle persepsies rondom die kliniese rol van die gevorderde psigiatriese verpleegkundige in sensoriese prosesseringsteuring te noem en te bespreek. Rondte 2 het bestaan uit 'n vraelys wat saamgestel is uit stellings wat geformuleer is uit die persepsies van die deelnemers soos verskaf in rondte een. Dieselfde deelnemers is by hierdie rondte betrek as by deelnemers van die vorige rondte ($n=18$) en hulle moes saamstem of verskil van 'n lys met die gebruik van 'n 5-punt Likertskaal en hulle antwoorde motiveer indien nodig. Rondte 3 het weer dieselfde deelnemers betrek ($n=18$). Dieselfde vraelys van rondte twee is uitgestuur met die beskrywende data en kommentaar bygevoeg sodat die deelnemers kon saamstem of verskil (5-punt Likert skaal) van die stellings met inagneming van die response van die vorige rondte. Die oorhoofse doel was om konsensus te bereik met betrekking tot die stellings ten einde 'n rolbeskrywing te kon saamstel. Kwantitatiewe data is ontleed met die hulp van beskrywende data en kwalitatiewe data met tematiese ontleding.

Data analise het die volgende vier temas uitgesonder – (a) Gespesialiseerde onderrig van die gevorderde psigiatriese verpleegkundige met betrekking tot sensoriese prosesseringsteuring; (b) Intervensies deur die gevorderde psigiatriese verpleegkundige met betrekking tot sensoriese prosesseringsteuring; (c) Voldoende ondersteuning van die familie met betrekking tot

sensoriese prosesseringssteuring; (d) Verwysing van die kind met sensoriese prosesseringssteuring. Die studie het bevind dat gesondheidswerkers wat kenners is in die lewering van gesondheidsorg aan kinders met sensoriese prosesseringssteuring saamstem oor die feit dat die gevorderde psigiatriese verpleegkundige 'n kliniese rol het om te vervul in die lewering van gesondheidsorg aan kinders met hierdie toestand. Aanbevelings in hierdie verband is geformuleer vir die verpleegpraktyk, verpleegonderrig en vir verdere navorsing.

Sleutelwoorde: sensoriese prosesseringssteuring, gevorderde psigiatriese verpleegkundige, kliniese rol, diagnose



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PERMISSION LETTER

Hereby permission is granted that that the manuscript 'Sensory processing disorder: Perceptions of the clinical role of the advanced psychiatric nurse' that will be submitted to *Health SA: Gacaca* for publication, may be submitted by Mrs Maddelon Lang for the purpose of obtaining a M.Cur in Psychiatric nursing.

Yours sincerely

Prof Emmeranda du Plessis
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LANGUAGE EDITING LETTER



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DECLARATION OF LANGUAGE EDITING

I, Christina Maria Etrechia Terblanche, hereby declare that I edited the
following research study:

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advanced psychiatric nurse**

for Madelein Lang for the purpose of submission as a thesis for examination.
Changes were suggested in track changes and implementation was left up to
the author.

Regards,

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We hereby confirm that the Statistical Consultation Services of the North-West University analysed the data involved in the study of the above-mentioned student and assisted with the interpretation of the results. However, any opinion, findings or recommendations contained in this document are those of the author, and the Statistical Consultation Services of the NWU (Potchefstroom Campus) do not accept responsibility for the statistical correctness of the data reported.

Kind regards

A handwritten signature in black ink, appearing to read 'SM Ellis'.

Dr SM Ellis (Pr. Sci. Nat)

Head Subject Specialist: Statistical Consultation Services

LIST OF ABBREVIATIONS

ANP	Advanced Nurse Practitioner
APN	Advanced Psychiatric Nurse
MCur	Magister Curationis
MPT	Multi-professional Team
NWU	North-West University
RAU	Randse Afrikaanse Universiteit / Rand Afrikaans University
SANC	South African Nursing Council
SPD	Sensory processing disorder
SPSS	Statistical Package for the Social Sciences
SI	Sensory integration
START	Strive Towards Achieving Results Together Program
OT	Occupational therapist
WHO	World Health Organisation

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CHAPTER ONE
OVERVIEW OF THE STUDY

CHAPTER 1 OVERVIEW OF THE STUDY

This chapter presents the background and research problem to guide the presentation of the research question, followed by the purpose and objectives of the research. The paradigmatic perspective of the researcher is also included, followed by an explanation of the chosen research design and research method. The measures implemented to promote rigour and ethical considerations are described. A short literature review illuminates the significance of the study, followed by the outline of the dissertation, in article format.

1.1 Introduction

Sensory processing disorder (SPD) is a neurological condition where the information that is received by the senses is not used effectively by the brain (Kranowitz, 2005:9). This condition is a reality in the lives of many children. These children and adolescents have to cope with the challenges SPD presents on a daily basis. The focus of this study is on clarifying the role of the advanced psychiatric nurse (APN) in identifying SPD and planning a nursing treatment regime for individuals presenting with symptoms of SPD.

The significance of the study is that it would help to clarify the role of the APN with regard to identifying and managing the SPD of children who consult them. An article written by Byrne (2009:318) stresses the fact that SPD must become the Advanced Nurse Practitioner's business. Nurses have a personal and professional duty regarding the health of their child patients and towards the families of these children to render a comprehensive healthcare service.

1.2 Background and Rationale for Study

A definition and history of SPD is discussed as well as the diagnosis and treatment of SPD; chronic effects of SPD if left untreated; child and adolescent mental health in South Africa; and the clinical role of the advanced psychiatric nurse.

1.2.1 Definition and history of SPD

According to Kranowitz (2006:3), sensory processing is a normal process that forms part of a human's daily neurological functioning and this process of neurological functioning cannot be observed objectively. Therefore, science is continuing with research to define sensory processing on a clinical level (Alterio, 2007:1). How we make sense of our physical experiences on a sensory level, still remains a mystery to a large extent.

Historically, sensory integration (also referred to as sensory processing) theory and the treatment of conditions related to dysfunctions of the sensory integration system was first identified and developed by A. Jean Ayres (2005:3). Ayres, being an occupational therapist, laid the foundation for describing terminology specific to sensory integration and explained the basic theory in people battling with disorders of sensory regulation and processing (Miller & Lane, 2000:1). Miller and Lane (2000:1) focused their research on mostly clarifying terminology regarding sensory integration theory and practice. By defining the terminology, they aimed to illuminate meaning to reach a joint understanding among health professionals with regard to education, future research and teaching of this particular condition.

The American Occupational Therapy Association (Miller *et al.*, 2011) also compiled a position statement on sensory integration terminology. This position statement is still used as a guideline for diagnostic terminology. Currently, SPD is used as the diagnostic term (label) by the majority of health professionals when referring to individuals who experience intricacies in sensory processing that affect their daily functioning (Byrne, 2009:314). Ayres (2005:3) further conceptualized the idea that some children have an inability to process more than one sensory input simultaneously as received through the visual, auditory, olfactory, taste, tactile, vestibular, and proprioceptive senses. This inability can lead to children presenting with a clinical picture of either being over-stimulated or under-responsive to sensory input. The child may have complaints of or present with fussiness, be clumsy and avoid or seek stimulation (Byrne, 2009:316).

1.2.2 Diagnosis and treatment of SPD

The diagnosis and treatment of SPD are mainly reserved for the study field of occupational therapy and is a specialization field at postgraduate level for healthcare professionals. The Mental Health Information Committee of the Children's Hospital of Eastern Ontario (CHEO, 2009:2) mention in an article on SPD that knowledge of sensory processing disorders do not form part of the professional knowledge of many doctors (also see Anon., 2013:5). The reason doctors posit is that there is a lack of research to support this condition as a differential diagnosis. It is also the academic experience of the researcher, being an APN student, that specific education and training regarding SPD is not incorporated in the current pre- and postgraduate nursing programmes. This is a matter of concern in the sense that there are advanced psychiatric nurses working in primary healthcare settings in both the public and private sector who come into contact with patients that may suffer from this condition. The fact that SPD is not currently included in formal nursing education can present a "lost opportunity in diagnosis, treatment, and research" (Byrne, 2009:314).

Most of the available literature stresses the fact that sensory integration is in the scope of postgraduate trained healthcare professionals and that a multi-disciplinary team approach should be followed in successfully identifying and treating the condition (Reebye & Stalker, 2007:194; Bullen, 2013:3; Allington-Smith, 2006:131). As the advanced psychiatric nurse (APN) plays an integral role in the multi-disciplinary team approach, the professional role of the APN with regard to SPD should be clarified in the South African context. This is discussed in more detail later on (see 1.2.5).

1.2.3 Chronic effects of SPD if left untreated

Whether SPD is mild or severe, it remains a mental health problem that is difficult to understand and treat. If this condition is neglected it may negatively affect how a child develops psychologically and how the child matures, behaves, learns, communicates, plays and relates to other people (Kranowitz, 2005:3). This can in the long run have a detrimental effect on the child's inter-personal relationships (Kranowitz, 2006:7). These negative relationships can lead to learning difficulties that may hamper the process of the affected individual developing to his best potential at physical, cognitive and emotional level.

1.2.4 Child and adolescent mental health in South Africa

The population of South Africa in 2011 was estimated to be around 51,8 million people (Stats SA, 2011) and 43% of this estimation represented the children and adolescents of South Africa (Stats SA, 2011). According to Uys and Middleton (2014:724), Statistics South Africa (Stats SA, 2011) identified children and adolescents that are under the age of 20 years to number at a total of 20,5 million. Of the 20,5 million children and youths, 3,3 million present with psychiatric conditions (Stats SA, 2011). This clearly reflects the healthcare burden on mental health professionals and resources in South Africa (Uys & Middleton, 2014:724).

Furthermore, a paper by Flisher *et al.* (2012:150) about child and adolescent mental health in South Africa focuses on service needs of the children and adolescents in the South African context with regard to mental health and psychiatric disorders. The paper referred to neuro-psychiatric syndromes that include cognitive impairment, developmental delay, attention and concentration problems, serious mental illness and common mental disorders like depression, anxiety and substance abuse (Rao *et al.*, 2007 as cited by Flisher *et al.*, 2012:150). These are all conditions on which the advanced psychiatric nurse is being trained in (Uys & Middleton, 2014:310). Some of these conditions, like attention and concentration disorders, can be co-morbid to SPD (Anon., 2015).

Looking at the primary healthcare sector, the World Health Organisation (WHO) aims for South Africa (WHO, 2007:5) are focused on steering mental healthcare in the primary healthcare sector to be holistic and decentralized among all 9 provinces in the country. Sanders (2009:22) presents a comprehensive analysis of the public healthcare system of South Africa where he stresses that the child population of South Africa is on the increase, which adds to the burden of providing healthcare, especially in primary healthcare.

Currently, Primary Health Care Clinics are the point of entry into the healthcare system for the majority of the population in South Africa (Xaba *et al.*, 2012:2). Clinics are mainly managed and driven by registered nurses. Mother and child healthcare in South Africa are supported by the Free Health Care Policy (Government Notice 657, 1994). This policy provides for free healthcare for all mothers and all children aged 6 years and younger. Again, as registered nurses will be the first line of treatment contact in the public healthcare sector of South Africa, it can be assumed that the majority of the child population's healthcare will be attended to by the nurse practitioner, who then starts with the line of referral to specialist services, such as the advanced psychiatric nurse and other multi-professional team members. In light of the advanced nurse practitioner (ANP) rendering a comprehensive healthcare service at entry level healthcare, the advanced nurse practitioner must be able to give support and implement a plan of treatment by using the available scientific information, such as the sensory integration frame of reference as currently used by the occupational therapy field of study (Mauro, 2014:3).

Sensory integration and processing disorders are limited to the area of specialization and is part of the field of expertise of the occupational therapist (Kranowitz, 2005:216). This is a concern because community nurse practitioners and advanced psychiatric nurses work in primary healthcare settings and are available to children with SPD, but are not trained in the sensory integration theory and approach (Byrne, 2009:318). They subsequently do not have the needed assessment skills and knowledge to identify SPD and to perform a comprehensive assessment based on the sensory integration approach in order to provide appropriate nursing which include referring for specialist treatment.

1.2.5 The clinical role of the APN

The clinical role of the advanced psychiatric nurse (APN) entails promoting and maintaining the mental health of the client by implementing the nursing process (ANA, 2006:3). In addition, Mendes *et al.* (2014:318) have undertaken a critical literature analysis to conceptualize the clinical role of the advanced clinical nurse. They have found that the clinical role of the advanced clinical nurse is constantly evolving as advanced practices are

characterized by continuously changing functions and designations. This stresses the importance of the advanced clinical nurse, including the advanced psychiatric nurse being able and competent to develop professionally and to perform advanced psychiatric nursing care applicable to the changing landscape of mental health conditions and disorders, including SPD. According to Byrne (2009:318), the SPD Network in America has resources available for occupational therapists, physical therapists, physicians and teachers, but none are included for the nursing profession. Byrne has also stated that SPD is seldom included in everyday nursing and medical curricula. She has also referred to the fact that nurse practitioners already screen for developmental abnormalities in children and that they are able to diagnose, treat and refer for most of the disorders (Byrne 2009:318). However, studies have indicated that stakeholders do not clearly understand the clinical role of advanced clinical nurses, such as advanced psychiatric nurses (Kilpatrick *et al.*, 2013:1525).

It is the assumption of the researcher that the stakeholders referred to by Kilpatrick *et al.* (2013:1525) are the multi-professional health team (MPT). The researcher tested the water by consulting with some of the health professionals about the role of the APN in SPD. The discussions clearly showed that the professionals consulted were not sure of what the clinical role of the APN is when it involves SPD. The professionals did not know what the current professional skills and competencies of APN's are and how they can contribute to evidenced-based practice. Moore (2013:265) has engaged in research that focused on introducing the role of the advanced clinical nurse in a multi-facility healthcare system by highlighting the fact that the role of this nurse should to be clearly defined and understood by nurse students and the MPT. It is furthermore evident that the clinical role of the advanced psychiatric nurse is embedded in a comprehensive education in psychiatric illness, neurophysiology, psychopharmacology and stimulation programmes, for example the Strive Towards Achieving Results Together programme (START) (Solarsh *et al.*, 1990) but SPD is not explicitly addressed. However, the academic education of the APN supports him or her with a sound knowledge base to advance on and to qualify for further training in sensory processing at a specialist level (Du Plessis & Koen, 2014:4).

Temane *et al.* (2014:1) referred to advanced practice nursing as a new focus in nursing. The terminology in advanced nursing practice in relation to the professional nurse acting as an advanced practitioner is still in the process of being clarified by subcommittees in the South African Nursing Council (SANC). SANC presented a generic competency framework for the Advanced Nurse Practitioner (ANP) in May 2014. In this framework the professional competencies of the ANP is divided into five main domains with subdomains or core competencies to make the domains more specific. The headings for the domains include the

following topics: 1) Professional, ethical and legal practice; 2) Care provision and management; 3) Personal development and quality of care; 4) Management and leadership; and 5) Research (SANC:2014). This framework clearly shows that the ANP has to adhere to a high standard of personal and professional competency to be able to practise in his or her field of speciality.

With this need for role clarification of the advanced nurse practitioner in mind, the researcher thought it most appropriate to investigate the professional opinions of the mental health team with regard to the clinical role of the advanced psychiatric nurse in the identification and management of children with SPD.

1.3 Statement of Research Problem

SPD is a daily reality for children affected by the condition (Kranowitz, 2005:9). The history, diagnosis and treatment of SPD make it clear how debilitating this condition can be if left untreated or undiagnosed (Byrne, 2009). In South Africa, the entry level to healthcare is at primary care settings in both the private and public sector, and these settings are largely attended to by registered nurses, including advanced psychiatric nurses (Xaba *et al.*, 2012:2). SPD is mostly the field of expertise of occupational therapy (Goodman-Scott & Lambert, 2015:276). However, the advanced psychiatric nurse trained in sensory integration theory can play an important role in filling the gaps with regard to assessment, treatment, education and research of sensory processing disorder (Byrne, 2009:314). This stresses the need for the APN working in primary healthcare settings and private practice to be able to identify and plan treatment for children presenting with SPD. Studies undertaken to describe and analyse the clinical role of the APN have emphasised the importance of the APN undertaking new functions and designations as a specialist in the field, including providing mental healthcare to children with SPD (Moore, 2013:265; Roberts-Davis & Read, 2001:40). This leaves the researcher with the concern to clarify the role of the APN in relation to SPD.

In South Africa, the APN working in primary healthcare is part of the first line team in healthcare for children attending public health services or private health clinics (Dennill, King & Swanepoel, 1999:3 cited by Xaba *et al.*, 2012:2). Currently there are no definite standards that clarify the clinical role of the APN also not with regard to SPD (Temane *et al.*, 2014:1). Consequently, the clinical role of the APN in this regard is still unclear and clarifying it can be a significant contribution. According to an article written by Byrne (2009:320), the advanced nurse practitioner working in primary healthcare can contribute to the scientific knowledge base of SPD. If APNs are provided with clarity on their role in relation to SPD, it will enable

them to render professional and comprehensive healthcare services that fall within their scope of practice.

1.4 Research Question

The research question that guides this study can therefore be formulated as follows:

What are the perceptions of healthcare professionals who are involved in healthcare to children diagnosed with sensory processing disorder regarding the clinical role of the advanced psychiatric nurse in relation to sensory processing disorder?

1.5 Purpose of the Research

The purpose of the study is to explore and describe the perceptions of healthcare professionals who are involved in healthcare to children diagnosed with SPD regarding the clinical role of the APN in relation to SPD. The result will be used to provide the APN and other healthcare professionals with a description of the clinical role of the APN with regard to providing mental healthcare to children presenting with signs and symptoms of SPD.

1.6 Research Objectives

The objectives include the following:

- To explore and describe the perceptions of healthcare professionals who are involved in healthcare to children diagnosed with SPD, on what the clinical role of the APN should be in this regard.
- To provide a description of the clinical role of the APN in SPD

1.7 Paradigmatic Perspective

The paradigmatic perspective is discussed as meta-theoretical, theoretical and methodological assumptions.

1.7.1 Meta-theoretical assumptions

The investigator, being a Christian and a qualified nurse specialist (medical-surgical nursing), holds the belief that how we as humans experience life is based on intrinsic and extrinsic factors and that this can influence our free will and how we make choices in our lives. This view that humans have an experiential belief system supports the research philosophy of social constructivism (Creswell, 2014:8). The researcher's constructivist

‘worldview’ can be seen as a supportive factor in the research study because social constructivists strive to understand the world that they live and work in (Creswell, 2014:8). According to the researcher, this understanding of the world also includes knowing what specific role to play as an advanced psychiatric nurse and that this role will guide nursing practice to be meaningful and holistic.

The meta-theoretical assumptions of the researcher were informed and guided by a holistic approach. This approach includes the following assumptions with regard to person, health, environment and nursing:

1.7.1.1 Person

It is the belief of the researcher that a ‘person’ can be seen as a biopsychosocial being that is in constant interaction with his environment (Kozier *et al.*, 1995:48). In this research the ‘person’ referred to is the advanced psychiatric nurse working in the private or public primary healthcare setting in South Africa. It is also the belief of the researcher that the advanced psychiatric nurse should be aware of what his/her clinical role in sensory processing disorder entails to grow on a professional level by committing to further education with regard to sensory integration theory.

1.7.1.2 Health

Sister Callista Roy’s adaption model (Kozier *et al.*, 1995:48) describes health as the process of becoming whole again, and if this integration is not possible, there is a lack of health. For the context of this study, health refers to the advanced psychiatric nurse’s ability to be competent in performing a clinical role in sensory processing disorder.

1.7.1.3 Environment

The environment includes external and internal factors that can have an effect on development and behaviour of a person or a group (Kozier *et al.*, 1995:48). For the purpose of this research, the environment is the primary healthcare setting in which the advanced psychiatric nurse renders healthcare to the child presenting with signs and symptoms of sensory processing disorder.

1.7.1.4 Nursing

In this study, nursing is defined as the advanced psychiatric nurse providing nursing care to the child presenting with sensory processing disorder. Sister Roy (cited by Kozier *et al.* 1995:48) mentions that nursing is embedded in theory and knowledge that are taken into

account in the nursing process. As nursing is a practice-based discipline, this scientific body of knowledge that the nurse has, should be integrated and applied to provide a service that will affect the health of the patient positively (Kozier *et al.*, 1995:48).

1.7.2 Theoretical assumptions

In this section, the researcher includes the central theoretical argument and conceptual definitions, and a discussion on the theoretical framework.

1.7.2.1 Central theoretical argument

The central argument of this research is that the exploration and description of the perceptions of healthcare professionals who are involved in providing healthcare to children diagnosed with SPD about the clinical role of the APN, will result in a description of the clinical role of the APN as it relates to SPD.

1.7.2.2 Definitions of key concepts

1.7.2.2.1 Sensory processing disorder

This is a condition of neurological origin and is identified when the incoming information to the brain, received via the senses, is not processed in an organized and accurate way. This results in inaccurate processing and judgement of sensory information with regard to smell, touch, movement, sound and taste (Mauro, 2014). As a result, the child can experience difficulty with moving, regulating emotions, attention problems and adapting responses as needed (Kranowitz, 2005:69).

This study focuses on children with SPD and the clinical role of the APN in rendering mental healthcare to children with SPD.

1.7.2.2.2 Healthcare professional

Healthcare professionals as referred to in the context of this study include individuals experienced in providing healthcare services to children diagnosed with SPD. It includes the following persons:

Paediatrician; paediatric psychiatrist; advanced practitioner nurse qualified in the field of community health, neonatal or psychiatric nurse; educational psychologist; occupational therapist; physio-therapist; speech therapist, social worker.

1.7.2.2.3 Advanced Psychiatric Nurse

The advanced psychiatric nurse is a registered nurse, registered with a national nursing council, in this case SANC and trained to masters or doctorate level in the field of psychiatric mental health nursing (ANA, 2006:14). Currently the terminology for advanced nurse practitioners in psychiatry is still being clarified by subcommittees in the SANC. However, upon receiving the qualification they are registered as advanced professional nurses with SANC as an additional qualification (Temane *et al.*, 2014:1). Furthermore, the advanced nurse practitioner is defined as an individual who focuses healthcare on primary care, health assessment, diagnosis and treatment (SANC, 2012:1).

1.7.2.2.4 Clinical role of the Advanced Psychiatric Nurse

Mendes *et al.* (2014:318) have referred to the clinical role of the APN as “the process of complex interaction between the nurse and the patient.” Psychiatric/mental health nursing is a field of specialization and the American Nurses Association (ANA, 2006:3) defines the clinical role of the APN as one of promoting and maintaining the mental health of the APN’s clients by implementing the nursing process. This process enables the APN to assess, diagnose and treat signs and symptoms that indicate mental health illness and psychiatric disorders. In this research, the focus is thus on the clinical role of the APN in assessing, diagnosing and treating children with SPD.

1.7.2.2.5 Primary health care setting

Primary health care is defined by Cawley *et al.* (2012:44) as an integrated healthcare service that is accessible to the community and that provides healthcare that focus on the needs of patients as well as developing partnerships with those seeking healthcare. For the purpose of this study, primary health care is defined as any healthcare setting where psychiatric/mental healthcare, be it in the private or public health sector, is delivered by the APN.

1.7.2.3 Theoretical framework

The literature study conducted regarding the clinical role of the APN in SPD did not reveal any specific theoretical framework guiding the APN’s clinical role with regard to this condition. Therefore, the researcher initiated the first round of the study with an open-ended question to generate qualitative data that were analysed by an independent co-coder by using thematic analysis. The analysis of the qualitative data generated themes with statements specific to each theme. These themes and statements then provided the

researcher with a theoretical framework that could be integrated with literature to support the process of clarifying the clinical role of the APN in SPD.

1.7.3 Methodological assumptions

According to Brink *et al.* (2012:68), the researcher's belief system regarding values and the way he/she makes assumptions plays a role in how the human being, the environment, health and healthcare is viewed. In addition, this belief system directs the researcher in structuring the problem to be researched and the process of selecting theory and methods to explore the problem within certain boundaries (Brink *et al.*, 2012:68).

The research problem is derived from clinical practice and literature (Brink *et al.*, 2012:62) and this study explored and described the perceptions of healthcare professionals with regard to the clinical role of the APN in SPD. The research methodology was guided by an explorative and descriptive design and included three data gathering rounds. The perceptions of healthcare professionals were explored and analysed to form themes with supportive statements for each theme. The themes and statements were checked against and supported by literature to formulate a description of the clinical role of the APN in SPD.

The meta-theoretical assumptions of the researcher is grounded in the philosophy of social constructivism (Creswell, 2014:8), which supports the belief of the researcher that humans derive meaning out of the way that they experience life. The theoretical assumptions are described as the central theoretical argument followed by the key conceptual definitions. The methodological assumptions of the researcher led to the choice of using an explorative and descriptive design.

1.8 Research Design and Methods

The research design and method are discussed under the following headings:

1.8.1 Research design

An explorative and descriptive design was applied in the research study. The Delphi technique was used as the chosen methodology and included the use of several rounds of data collection, using both qualitative and quantitative methods. The Delphi design and technique of data gathering aims to reach consensus on a topic in a group of experts or where existing opinions are not clear (Du Plessis & Human, 2007:17; Hanafin, 2004:4).

The Delphi technique was therefore appropriate for this research where it is necessary to obtain the perceptions of healthcare professionals as experts, on the clinical role of the APN

in SPD. In a Delphi study, the first round of data gathering is usually unstructured or semi-structured, supportive of facilitating 'free expression' of the ideas of the chosen panel of experts (Rowe *et al.*, 1991 cited by Roberts-Davis & Read, 2001:33). Free expression is facilitated by the fact that the panel members remain anonymous (Keeney *et al.*, 2011:32).

Furthermore, the Delphi approach provides the safety that members cannot influence or manipulate one another's professional opinion. This approach was favourable within the context of this study because the research data had to be rich and descriptive, consensus was needed on the role of the APN in SPD and the opinion of experts was needed. According to Keeney *et al.* (2011:23), the technique of using a panel of experts to reach consensus on an issue is on the increase.

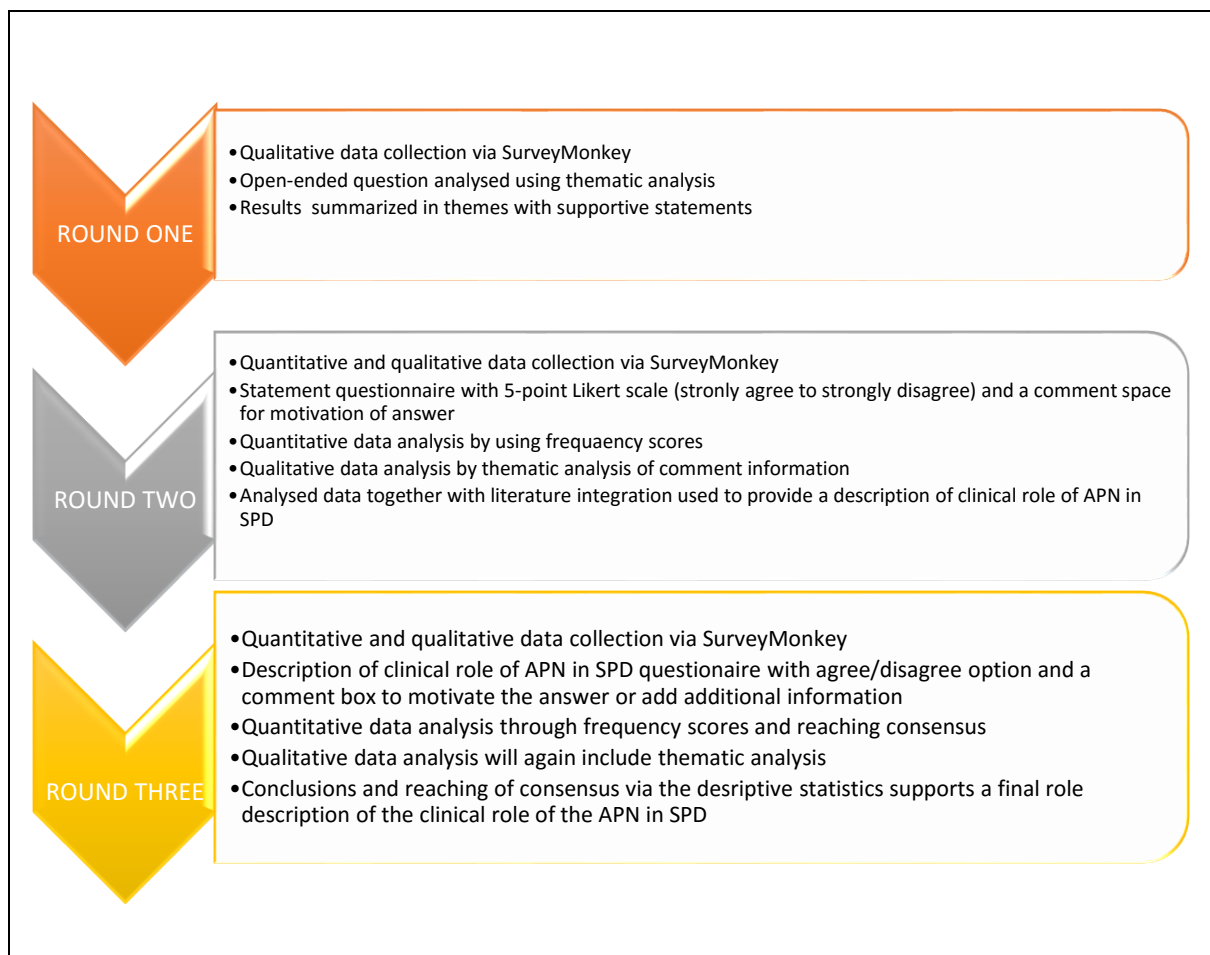


Diagram 1-1 An outline of the explorative descriptive design

1.8.2 Role of the researcher

The researcher sought the ethical approval of the Health Research Ethics Committee (HREC) of the Faculty of Health Sciences of the North-West University to ensure that the rights of the participants were protected (Creswell, 2014:188). After obtaining ethical approval (reference number NWU-00006-16-A1; Appendix A), the researcher was involved in sampling and in the recruitment of the participants as described under 1.8.5. The participants were seen as the experts regarding the phenomenon being investigated. The researcher then continued with data collection, as described in Section 1.10.6. Although the researcher has professional experience as a professional nurse attending to children with SPD, she acted as a non-expert in analysing and interpreting the data.

1.8.3 Research setting

The research was not limited to one setting, as the potential participants were geographically widespread and an online approach was followed during data collection.

1.8.4 The population

The population consisted of registered healthcare professionals in South Africa who are experienced and knowledgeable in providing healthcare services to children and adolescents with SPD. This included paediatricians; paediatric psychiatrists; advanced nurse practitioners in the field of community health, neonatal or psychiatric nursing; educational psychologists; occupational therapists; physiotherapists; speech therapists and social workers. All of the above health professionals except the nursing professionals had to be registered with the Health Professionals Council of South Africa and involved in the healthcare of children diagnosed with SPD for at least three years. The nursing professionals had to be registered with the South African Nursing Council and worked in the field of providing healthcare to children diagnosed with SPD for at least three years.

1.8.5 Sampling plan

Participants were selected using a purposive sample, followed by a snowball sampling strategy since the researcher was not able to locate all the professionals in the population (Brink *et al.*, 2012:139; Wagner *et al.*, 2012:92). Snowball sampling implied that the initial participants were invited to assist the researcher in identifying further participants by inviting participants in their own network of professionals who are considered experts in SPD (Brink *et al.*, 2012:142). The initial participants were identified by generating a contact list based on the researcher's private practice experience in consulting with health professionals who

provide healthcare to children with SPD. The same participants were used for all the data gathering rounds. This method was most applicable and financially feasible for the purpose of this study (Brink *et al.*, 2012:139).

Table 1-1: Inclusion and exclusion criteria

INCLUSION CRITERIA	EXCLUSION CRITERIA
• A qualified healthcare professional with three years post-qualification experience in providing healthcare to children with SPD in South Africa, from any of the following fields: • paediatricians, paediatric psychiatrists, advanced nurse practitioner's in the field of community health; neonatal or psychiatric nursing, educational psychologists, occupational therapists, physiotherapists, speech therapists and social workers. • The participant must be willing to participate in the study. • The participant must be fluent in the reading and writing of English.	• Healthcare professionals who are not currently registered with their regulating bodies for their particular profession in South Africa. • Healthcare professionals not working in the field of rendering healthcare to children with SPD. • Healthcare professionals without access to an e-mail or the internet.

1.8.5.1 Recruitment of participants

The researcher has been working in private mental healthcare for the past four years and has built a network of contacts with healthcare professionals in the field of SPD. The researcher applied purposive sampling (Brink *et al.*, 2012:141) by compiling an initial participant contact list generated from her knowledge and networks of healthcare professionals who play a role in SPD treatment, who can be seen as experts in this field and who complies with the inclusion criteria (see Table1.1).

Initial contact with the first line of participants selected for the snowball technique was made by sending them an electronic advertisement (see Appendix B) to inform them about the nature of the study and to request a reply if they want to participate. If they expressed interest in participating, the Survey Monkey link was sent to them via e-mail. It contained an information sheet (see Appendix C) that included a comprehensive discussion of the nature of the study, what the role of the participants entailed and what was to be expected of them (Keeney *et al.*, 2011:22) and an informed consent clause that had to be ticked if the participant wanted to take part in the study and gain access to the first round of data gathering. The initial participants were invited to act as mediators in identifying and inviting

more participants that are known to them and whom comply with the selection criteria, but who are not known to the researcher. These mediators were expected to sign a confidentiality agreement (see Appendix D).

The first open-ended question was available on Survey Monkey and this was accompanied by a consent statement directing the participant to accept or decline participation. This ensured that the participant gained access to the open-ended question on Survey Monkey. Both the researcher and a HREC representative was available for any enquiries raised by potential participants regarding the research study. These participants were then requested to act as mediators for the rest of the snowball sample by contacting other healthcare professionals who could be included in the sample, using the inclusion and exclusion criteria as guideline and the advertisement previously sent to them. The researcher continued with sampling until data saturation was reached. Data saturation involves collecting data until the themes identified from data analysis become repetitive, indicating saturation (Creswell, 2014:189).

The snowball technique as discussed earlier was applied to help the researcher gain access to further possible participants not included in the first list of participants. Privacy and confidentiality to promote anonymity is discussed in Section 1.10.3. The researcher did consider the slight possibility that there may be potential participants that do not have access to an e-mail and therefore cannot participate in the study. This aspect was described as a shortcoming of the study in the final chapter of the manuscript.

1.8.6 Data collection and analysis plan

Data collection took place by implementing three data gathering rounds characteristic of the Delphi method. Each round was scheduled to be two to three weeks apart.

1.8.6.1 Round 1

1.8.6.1.1 Data collection for round 1

The first round of data collection was less structured (Dalkley & Rourke, 1971:10; Du Plessis & Human, 2007:20) and was initiated by the researcher sending the participants an electronic open-ended question using the Survey Monkey software program (SurveyMonkey Inc., 2015).

The research question that initiated the first round was: “ According to the American Nurses Association (ANA, 2012), the clinical role of the advanced psychiatric nurse practitioner is defined as one of promoting and maintaining the mental health of the APN’s clients by

implementing the nursing process. This process enables the APN to assess, diagnose and treat signs and symptoms that indicate mental health illness and psychiatric disorders. What do you think is the clinical role of the advanced psychiatric nurse in delivering mental healthcare to children with sensory processing disorder? Please provide a role description as complete and comprehensive as you can.” This question was formulated to correlate with the purpose of this research.

The researcher included a trial run for the first round of the study by sending the open-ended questionnaire via e-mail to a nursing specialist who has knowledge in sensory processing disorder and practical experience in rendering healthcare to children. This was done to assure that the formulation of the question is in line with what it intended to ask. Data generated in this trial run was not included for data analysis, as this expert was not anonymous to the researcher and the data generated may have been biased.

After the trial run, data collection commenced. The participants had seven days to complete the open-ended question and the estimate was that it would not take more than 30 minutes to complete. After seven days, all participants received a once-off e-mail reminding them to respond. The received responses were made anonymous since the researcher selected the relevant option within the Survey Monkey software program. This prevented the researcher from identifying the participants when receiving and analysing the data.

1.8.6.1.2 Data analysis of round 1

The data obtained during round one were analysed by the researcher using thematic analysis (Wagner *et al.*, 2012:110; Creswell, 2014:234) to generate themes relating to the clinical role of the APN in SPD. Tesch's (Creswell, 2014:198) eight steps were applied in coding the raw text data (See Table 1.2).

An independent co-coder was consulted to analyse the data and to reach consensus with the researcher on themes and sub-themes. Themes identified were summarized as general statements on the clinical role of the APN in SPD. These statements were used to develop a statement questionnaire for the second round. The statement questionnaire was then sent via e-mail to at least two advanced psychiatric nurses for validation and feedback. These nurses were selected based on their advanced academic qualifications and being scholars in the field of psychiatric nursing science.

Table 1-2: Tesch's eight steps in the Analysis process

1. Read all data and get a sense of the whole.
2. Pick one document that is the most interesting and write thoughts in the margin.
3. Make a list of all the topics and cluster topics with the same theme into columns.
4. Review the data again with the list of topics and themes to guide the process of coding the topics and write the codes next to the segment that is applicable.
5. Decide on the wording that would best describe the topics and sort them into categories by clustering topics that are related.
6. Finalize the abbreviation for categories and sort these codes according to alphabetic order.
7. Organize the data material for each category in one place and proceed with a preliminary Analysis.
8. Recode existing data if needed.

(Creswell, 2014:198)

1.8.6.2 Round 2

1.8.6.2.1 Data collection for round 2

The statements identified from round one were listed in the second round to create a statement questionnaire with a 5-point Likert scale (strongly agree to strongly disagree) and space to comment on answers (Wagner *et al.*, 2012:110). The intention was that these statements describe the role of the APN in SPD. The questionnaire was first submitted to the statistician for evaluation and then presented to at least two experts in advanced psychiatric nursing to complete and discuss their interpretation and understanding of the statements.

The statement questionnaire was then sent electronically to the same participants of round one. The software program Survey Monkey has a function that manages this aspect, ensuring that participants remain anonymous. The focus of round two was to obtain quantitative data on the consensus reached between experts on statements that describe the role of the APN in SPD, as derived from round one.

An additional space for comments ensured the generation of further qualitative data to support the numerical data with the purpose of adding to rich and thick descriptions to be included in the discussion of findings. Again, the participants had seven days to respond and the questionnaire was expected not to take more than 20 minutes to complete.

1.8.6.2.2 Data analysis of round 2

The chosen method of data analysis for round two was descriptive statistics (Brink *et al.*, 2012:180) with frequency distributions for the quantitative data and thematic analysis (Creswell, 2014:198) for the qualitative data, once again using Tesch's eight steps when coding the data (see Table 1.2). The researcher used a statistical software program (Wagner *et al.*, 2012:199; Mouton, 2001:74) known as the Statistical analysis software package (SPSS) to analyse the quantitative data with the support of a statistical consultant.

The data of Round 2 reflected consensus on what the clinical role of the APN regarding SPD is. The same statement questionnaire as for Round 2 was sent to the participants for Round 3, but the questionnaire included the descriptive statistics and comments for the participants to reflect on before selecting their response to each question.

1.8.6.3 Round 3

1.8.6.3.1 Data collection for Round 3

After obtaining data that reflected consensus on what the clinical role of the APN working in child healthcare settings is with regard to SPD, the researcher introduced Round 3 by offering the participants who participated a richer and fuller description of what the clinical role of the APN is, with an indication of consensus reached among participants on the role. They were again offered the choice of agreement or disagreement with the role description with motivation of answers. The time frame allocated for response was seven days and the questionnaire was estimated to not take more than 15 minutes to complete.

1.8.6.3.2 Data analysis of Round 3

For Round 3, data analysis entailed quantifying the degree of consensus in the form of percentages of agreement or disagreement and thematic analysis (Tesch's steps) of the motivation for answers, similar to the data analysis methods used in round two. The outcome of round three analysis was expected to provide a full description of the clinical role of the APN in SPD, with an indication of consensus among the participants.

1.9 Measures to Ensure Rigour

Trustworthiness was promoted by following Guba's constructs as referred to by Shenton (2004:64). By using these constructs, the researcher ensured that the aspects of truth value, applicability, consistency and neutrality was achieved by applying the following strategies:

Credibility: The researcher did not know the initial participants selected for the purposive sample on a personal level. They were professional contacts and they also had to comply with the inclusion and exclusion criteria (section 1.8.5.1). Conducting a trial run added to the credibility of the research. The measure of data saturation as previously discussed was applied to promote the credibility of the results (Creswell, 2014:189). The researcher's prolonged engagement with the data over three rounds of data collection in the research process ensured that data saturation was feasible (Brink *et al.*, 2012:172).

Transferability: This was ensured by keeping all the versions of the data in their original form and by providing thick descriptions of analysed data (Wagner *et al.*, 2012:243). Brink *et al.* (2012:173) also refer to using the method of data saturation to support transferability.

Dependability: Stability of data over time (Brink *et al.*, 2012:172) was characterized by the fact that other researchers can repeat the study with the same participants and more or less obtain the same results. This will be possible by the researcher giving an exact description of how the data were collected, analysed and interpreted (Macleod, 2008:93).

Confirmability: The data collected must support the findings, interpretations and recommendations. This was achieved by using a co-coder (Creswell, 2014:202) during the first round of data collection. Clarification of the researcher's own bias was also effective. The researcher also consulted with her supervisor on a regular basis and this ensured that peer review was established through ongoing auditing.

Validity was promoted by inviting experts in nursing to validate the questionnaires of Rounds 1 and 2 before sending them to the participants. Validity was further established by the fact that participants had the opportunity to re-evaluate their responses of the first round and to agree or disagree with summarized statements and to motivate those answers. Furthermore, the findings of this study were compared to results of other studies as part of a literature integration. The researcher applied scientific integrity by not committing plagiarism and by documenting the findings of the study in an accurate manner. This study will also be presented for publication with the hope that it will evoke discussion among multi-disciplinary team members (Macleod, 2008:93).

1.10 Ethical Considerations

The researcher consulted several sources on ethical principles in health research and included the following principles and standards to ensure that the research process would be conducted in a professional and responsible manner (Creswell, 2014:101; DOH, 2015; Greeff, 2014).

1.10.1 Beneficence and non-maleficence

The Delphi technique chosen by the researcher was the most sound and feasible approach for conducting the study successfully. The selection of a panel of experts in the field of SPD was most appropriate to explore and describe their professional opinions on the clinical role of the APN in South Africa regarding SPD.

There was a negligible risk (DOH, 2015) to the participants since the participants were all health professionals with busy schedules and it could have been inconvenient for them to attend to completing the questionnaires. No harm was inflicted on the participants, for they only had to reveal their opinions anonymously and their personal information was not revealed to the other participants. The benefit of the study results was greater than the risk of inconvenience to the participants.

Opinions were also summarized as broad statements and not linked to any specific participant. The outcome of the study illuminated what the clinical role of the APN in South Africa regarding SPD is and this will benefit the nursing profession in the sense that it can help to guide the APN to provide optimal healthcare to clients presenting with SPD symptoms. This benefit outweighs the negligible risk of the study.

1.10.2 Distributive justice (equality)

The researcher did not just select participants at random, but ensured fair selection of the participants by including inclusion and exclusion criteria that guided the selection process. The researcher honoured all agreements made with the participants (Brink *et al.*, 2012:36). The privacy of the participants was respected by blinding all personal information on the questionnaires for the researcher and co-coder. The 'master list of participants' was also kept in a safe place and no unauthorized people were allowed to gain access to any of the research documentation (Brink *et al.*, 2012:38).

The study ultimately generated information that clarified and described the clinical role of the APN in SPD. This data will benefit the participants in the near future, for the APN working in

the primary health care setting can attend to a patient with SPD and promptly refer the client to specialist healthcare professionals if needed.

1.10.3 Respect for persons (dignity and autonomy)

The researcher honoured the dignity and integrity of the participants by treating them with respect, being transparent and available for questions regarding the study process. Autonomy was promoted by ensuring that the participants took part in the study voluntarily (as discussed in section 1.8.5.1) and that they were aware that they can withdraw from the study at any given time without any consequences.

The participants were made aware of the fact that they do not have to answer a question against their will. The researcher refrained from siding with a participant by being fully aware of own professional and personal bias where applicable. There was no falsification of authorship, data findings or conclusions when writing up the study. The researcher also refrained from plagiarism when writing up the study results. The data will remain the academic property of the North-West University.

The following key norms and standards were also included:

- Relevance and value

Clarifying the role of the APN in South Africa regarding SPD in healthcare settings is of value to the people of South Africa. Children and adolescents presenting with SPD symptoms attended to by APNs will be better identified and early referral to specialist care can improve healthcare service. Data generated by the study also contribute to the general knowledge base of the nursing profession and can guide the scope of practice of the APN.

- Scientific integrity

The researcher ensured that the study design and chosen methodology was sound by submitting the research plan to the Ethical Committee of the North-West University (Potchefstroom) for approval prior to commencing the study.

- Fair selection of participants

The selection of participants was based on scientific and ethical principles and although the researcher first selected participants out of her own professional resource list, she adhered to professional integrity, non-coercion and non-bias in the selection

process by following a snowball approach in sampling. The identity and occupation of the participants was known to the researcher, but the responses were blinded by the Survey Monkey program.

- Informed consent

Informed consent was obtained by including an information sheet regarding the nature of the research that they had to give consent to before gaining access to the online questionnaire via Survey Monkey (See Appendix C). The researcher was available for questions regarding the study via e-mail and the principle of choice was included in the information sheet (see Appendix C). Participants were informed of their right to withdraw from the study without any consequences or judgement.

- Ongoing respect for participants (privacy and confidentiality)

The researcher respected the participants by limiting communication with participants to office hours, be it telephonically or electronically. The privacy and confidentiality was maintained by means of Survey Monkey blinding personal information on questionnaires before returning them for analysis of data or sharing the data with a co-coder. The researcher had a password on her computer to ensure that no unauthorized access could be gained to electronic files of participant's questionnaires. The study information was only available to the researcher, her supervisor, the statistical consultant and co-coder. The data will be stored for a period of seven years, and then destroyed by permanently deleting the files from the computer. All electronic data will be kept on back-up files by Survey Monkey for up to 12 months after the account has been deleted. The hard copies of the electronic data will be stored at the INSINQ research focus area at the School of Nursing Science at the North-West University, Potchefstroom and destroyed after seven years. A summary of the study results will be sent to the initial participants via electronic mail and they will be requested to disseminate the results to their professional network to reach all healthcare professionals who participated in the study. No data that can reveal the personal identity of the participants to one another or to the public were used. The researcher also presented the study results at academic conferences and intends to publish in scholarly journals.

- Researcher competence and expertise

The researcher completed her research methodology module at the North-West University in June 2015 and is currently up to date with her Ethics training. She has

been employed by an urologist as the research coordinator and has been a study nurse of various international clinical trials for 10 years. The intention was to reveal the results of the study in a timely and accurate manner, be the outcome negative or positive.

- Role player engagement

The researcher agreed to involve role players like the study supervisor, statistical consultant and co-coder in a timely manner as needed in the research process. There was no need for confidentiality contracts since personal information was blinded on the questionnaires.

1.11 Literature Review

1.11.1 Introduction

The purpose of this study was to explore and clarify the perceptions of healthcare professionals with regard to the clinical role of the advanced psychiatric nurse in treating sensory processing disorder. The goal of this exploration was to provide a role description for the APN in this regard. This literature review is an extension of the literature review conducted for the background and rationale for the study, which included information regarding sensory processing disorder and the role of the APN in providing healthcare for patients with this condition. Literature about sensory processing disorder, role theory and role clarification in advanced nursing practice is included for this review.

Search Strategy

The literature search was conducted using the following key words:

Advanced psychiatric nurse, Role clarification, Role theory, Sensory processing disorder, South Africa

Search engines included databases of: EBSCOHost, with the further selection of CINAHL, Health source: Nursing/Academic Edition, MEDLINE and PsychINFO. Relevant articles, hard-copy books, e-books, dissertations and theses were all included.

1.11.2 Reason for conducting a literature review

Literature was searched with the intent to create a theoretical support base that can guide the research process to reach the overall objective of providing a role description of the advanced psychiatric nurse in sensory processing disorder. Searching current literature on

the following topics will ensure that ideas are conceptualized within a framework that originates as 'an extension of current knowledge' (Brink *et al.*, 2012:26).

1.11.3 Sensory processing disorder

As discussed in the background of the study (section 1.2) sensory processing disorder is a neurological condition where the information received by the senses of the human body is not effectively used and interpreted by the brain (Kranowitz, 2005:9). This condition is a daily reality in the lives of many children and adolescents.

Currently SPD is used as the diagnostic term (label) by the majority of health professionals when referring to individuals experiencing intricacies in sensory processing that affect their daily functioning (Byrne, 2009:314). Ayres (2005:3) further conceptualized the idea that some children experience the inability to process more than one sensory input simultaneously as received through the visual, auditory, olfactory, taste, tactile, vestibular, and proprioceptive senses. This inability can lead to children presenting with a clinical picture of either being over-stimulated or under-responsive to sensory input. The child may have complaints of or present with fussiness, be clumsy and avoid or seek stimulation (Byrne, 2009:316).

If this condition is neglected it may negatively affect how a child develops psychologically and how the child matures, behaves, learns, communicates, plays and relates to other people (Kranowitz, 2005:3). This can in the long run have a detrimental effect on the child's personal relationships (Kranowitz, 2006:7). This, in turn, can lead to learning difficulties that may hamper the process of the affected individual developing to his best potential at physical, cognitive and emotional level.

1.11.4 The concepts in role theory

"Role theory is based on a dramaturgical metaphor" (Solomon *et al.*, 1985:102). The dramaturgical metaphor is further described by Solomon *et al.* (1985:102) as the study of how a role is 'enacted', and this enactment can be influenced by the audience, in other words the fellow actors and observers. Masango-Mtetwa (2002:97) applied the role theory of Hardy and Conway (1978) in her doctoral thesis with the purpose of describing the behaviour of the nurse educator when confronted with a given situation. She (Masango-Mtetwa, 2002:97) refers to role theory as a 'collection of concepts' that can envision how role players will operate in a given situation. These concepts include the concept of status, the concept of role and the concept of role performance. In defining these concepts, Masango-Mtetwa (2002:97) composed a theoretical framework that guided her research process of

presenting a role clarification for the nurse educator's behaviour in a specific context or situation.

Based on the relevance of the role theory concepts to describe a specific role in nursing, the researcher decided to take into account these concepts in her exploratory and descriptive research regarding the clinical role of the APN in SPD. The concepts of role theory were considered when the researcher looked for guidance in the current literature with regard to providing a clinical role description for the APN to achieve the second objective of the study. As mentioned before, the concepts include a.) status, b.) role and c.) role performance (Masango-Mtetwa, 2002:99). The relevance of these three concepts are now be discussed.

- Masanga-Mtetwa (2002:99) described the concept of status as “the position an individual or group holds or occupies within a social structure, applicable to a given situation”. The International Council of Nurses (ICN, 2016) provides a definition for the advanced nurse practitioner (ANP) to guide role development. This definition states that the advanced nurse practitioner is a registered nurse trained to the level of a master's degree. Training provides the advanced nurse practitioner with a certain status, namely that of being a health professional known who has expert knowledge, advanced decision-making skills and clinical competencies. As the advanced psychiatric nurse is an advanced nurse practitioner, he or she can be seen as “an elite group of nurses” with advanced training and competencies to practise in the healthcare setting (Fung *et al.*, 2014:699; Puskar, 1996:2).
- The concept of role (Masango-Mtetwa, 2002:100) is intertwined with the concept of status. Solomon *et al.* (1985:102) define the role as “a cluster of social cues that guide and direct an individual's behaviour in a given setting.” In this study, the concept of role will refer to the clinical role of the APN with regard to providing comprehensive nursing care to children presenting with SPD and that the APN should to be competent in performing such a role in the current healthcare setting.
- Role performance for the APN includes a set of behavioural competencies that have to be performed by the nursing professional in a given situation (Masango-Mtetwa, 2002:100). These behavioural actions are further seen as being “goal directed” (Masango-Mtetwa, 2002:100) and for the practice of advanced nursing embedded in prior learning.

The following discussion focuses on role clarification for the APN with the consideration and integration of the role theory concepts of status, role and role performance.

1.11.5 Role clarification of the advanced psychiatric nurse practitioner

The need for clarification and development of the nurse's role for advanced practice nursing is a historical process and was pioneered by Hildegard E. Peplau in the 1960's (Driscoll *et al.*, 2005:141). Role clarification is defined by Meleis (2010:40) as the process mastering knowledge or specific information and setting boundaries for that specific role with the purpose of synthesizing an exact idea of what is to be expected of the person executing that role. These boundaries include the person being competent and knowledgeable given the context of the situation (Meleis, 2010:40).

Advanced practice nursing is currently an 'umbrella term' (Broom *et al.*, 2008:131) used by the nursing profession to differentiate between basic nurses and those trained to be more advanced, therefore functioning on a 'higher level'. For the nurse practitioner to have an impact on the process of providing healthcare, a clear and specific understanding of what practice entails is a necessity (Lowe *et al.*, 2011:679). Currently there are no specific role descriptions for the APN in South Africa because advanced nursing is relatively new in South Africa (Temane *et al.*, 2014:1). The South African Nursing Council (SANC) is still in the process of clarifying the role of the APN as delegated to the subcommittees in the SANC. To date, SANC also refers to the umbrella term of Advanced Practice Nurse and acknowledges the definition provided by the International Council of Nursing (ICN, 2016) for the Advanced Practice Nurse, as the following:

"The Advanced Practice Nurse is a registered nurse who has acquired the expert knowledge base, complex decision-making skills and competencies for expanded practice, the characteristics of which are shaped by the context and/or country in which s/he is credentialed to practise. A master's degree is recommended for entry level."

SANC goes further to identify two predominant categories of the Advanced Practice Nurse, namely 1.) Clinical Nurse Specialist (CNS); and 2.) Advanced Nurse Practitioner (ANP). The clinical nurse specialist is defined as a person who is specialized by having advanced knowledge and expertise grounded in additional training and qualifications. The clinical nurse specialist is also able to work as a member of the multi-professional healthcare team in facilities and to engage in the role of consultation as applicable. The advanced nurse practitioner on the other hand is defined as a health professional that is focused on providing primary care, health assessment, diagnosis and treatment. SANC further refers to the

advanced nurse practitioner to be more in line with the Primary Health Care (PHC) nurse, midwife, psychiatric and paediatric nurse not currently working in the formal hospital environment.

In the SANC's process of clarifying the role of the advanced nurse practitioner in South Africa, they developed a generic competency framework to guide advanced practice nursing in South African healthcare. Due to the fact that to date there is still no role description specific to the advanced psychiatric nurse available in South Africa, the generic competency framework guides advanced practice. In this study, this applies to the practice of the advanced psychiatric nurse, and the framework therefore serves as a framework from which the researcher explores the clinical role of the APN in SPD with the main objective of providing a clinical role description.

A brief outline of the competency framework (SANC:2014) is discussed to illuminate the section that is applicable to the clinical role of the APN in SPD. The competency framework is divided into five domains with subdomains/care competencies that are further described by specific competencies. The chief five domains is divided under the following headings:

9. Professional, ethical and legal practice
10. Care provision and management
11. Personal development and quality of care
12. Management and leadership
13. Research

Each of the domains is then divided in subdomains/core competencies. All of the domains are important in the role of the advanced psychiatric nurse to provide holistic healthcare to the public. However, for the purpose of focusing on the clinical role of the APN in SPD, the second domain is of special importance, namely care and provision. This domain is more specific to the clinical role that the study explores. The core competencies of care and provision (domain 2) include:

- Health promotion
- Assessment
- Planning

- Implementation
- Evaluation
- Therapeutic Communication and Relationships

Each core competency is then clarified by specific competencies (see Table 1.3) that the ANP should be able to implement to render a nursing service in line with what SANC expects of the advanced nurse practitioner.

Table 1-3: Specific competencies for care provision and management (domain 2) (retyped from the source, namely SANC, 2014)

SUBDOMAIN/CORE COMPETENCY	SPECIFIC COMPETENCY
1. Health Promotion	1.1 Assesses health education needs specific to the area of speciality 1.2 Plans, develops and implements needs-based programmes to promote health and well-being 1.3 Develops and uses follow-up systems to ensure that healthcare users receive appropriate services
2. Assessment	2.1 Gathers accurate and relevant objective and subjective data required for practice area through systematic health and nursing assessment 2.2 Orders diagnostic tests and procedures in line with scope of practice for advanced practice nursing standards/competence 2.3 Organizes, synthesizes, analyses and interprets data from different sources to derive nursing diagnoses and to determine a care plan 2.4 Shares and documents findings accurately, complete, and in a timely manner to complying with nursing practice standards and institutional policies
3. Planning	3.1 Formulates an individualized comprehensive care plan with identified care outcomes based on nursing diagnoses, findings from a nursing and health assessment, inputs from other health team members and nursing practice standards

SUBDOMAIN/CORE COMPETENCY	SPECIFIC COMPETENCY
	3.2 Applies critical thinking and clinical reasoning skills underpinned by knowledge of the area of advance practice nursing and other disciplines to the care planning process 3.3 Establishes priorities for care in collaboration with other healthcare providers and healthcare users 3.4 Reviews and revises the care plan regularly, where possible in collaboration with other members of the healthcare team 3.5 Maintains current, accurate care plan and related records
4. Implementation	4.1 Implements a range of advanced procedures, treatments and interventions in accordance with the developed care plan and best practice standards 4.2 Documents interventions and healthcare user responses accurately and in a timely manner 4.3 Responds appropriately and timeously to unexpected or rapidly changing situations 4.4 Responds immediately and appropriately to emergency situations taking a leadership role and coordination of care for healthcare users with special care needs
5. Evaluation	5.1 Monitors and documents progress towards expected outcomes accurately and completely 5.2 Evaluates progress towards planned outcomes in consultation with health care users, families and/or carers and healthcare team 5.3 Utilizes evaluation data to modify the care plan 5.4 Provides the necessary support to the team members according to the identified gaps in the care provided
6. Therapeutic Communication and Relationships	6.1 Initiates, develops and discontinues therapeutic relationships using a range of advanced communication and interpersonal skills 6.2 Maintains a relationship that respects the boundary between healthcare user and self

SUBDOMAIN/CORE COMPETENCY	SPECIFIC COMPETENCY
	6.3 Listens to others in an unbiased manner, respects points of view of others, and promotes the expression of diverse opinions and perspectives 6.4 Communicates clear, consistent and accurate information verbally, or in written or electronic form, which falls within professional responsibility and maintains confidence in care 6.5 Facilitates access to information or refers requests to the appropriate person 6.6 Communicates and shares information, including views of healthcare users, families with other healthcare team

The combination of the role theory concepts (Masango-Mtetwa, 2002:100) of status, role and role performance, and the competency framework (SANC, 2014) is an applicable theoretical support base for conducting the research study.

1.11.6 Summary of literature review

It is a fact that Sensory Processing Disorder is a reality in the lives of many children and adolescents as discussed in the introduction. The background described and defined SPD. It included information regarding the diagnosis and treatment of SPD, especially with regard to health professionals providing healthcare to children and adolescents with SPD. Currently, the APN working in primary healthcare settings can be seen as one of the first line healthcare professionals providing healthcare to children in South Africa. Since SPD is a condition that affects mental health and that is not readily included in the educational curricula of the APN, the researcher referred to literature about role clarification to examine the clinical role of the APN as an advanced nurse practitioner and could describe a framework for the role of the APN.

1.12 Significance of the Study

The significance of the study is to clarify the role of the APN with regard to identifying and managing the SPD of children who consult them. An article written by Byrne (2009:318) stresses the fact that SPD must become the Advanced Nurse Practitioner's business because nurses have a personal and professional duty towards the health of their child patients and the families of these children

1.13 Outline of Mini-Dissertation

The research report was written according to the NWU guidelines for the mini-dissertation in the article format. The researcher, a Magister Curationis (MCur) student, Ms M Lang, conducted the research and wrote the manuscript (Chapter 2). Prof E du Plessis acted as the supervisor. The manuscript was compiled and written as specified by the guidelines for the academic journal *Health SA Gesondheid*. The reader will notice that the technical and reference style of this journal was followed in Chapter 2. The reader will also notice that much of the introductory and background discussions, as well as the discussion of the methodology are repeated in Chapter 2, as the requirement is that the audience should be able to read the manuscript as a document on its own, and as the purpose is to submit the manuscript for possible publishing.

The structure of the research report is as follows:

Chapter 1:

Introduction and background

Problem statement

Purpose and objectives of study

Research design and methodology

Literature review

Chapter 2:

Manuscript, including the results presentation and discussion with literature integration

Chapter 3:

Conclusions, limitations and recommendations of the study

CHAPTER 2 MANUSCRIPT:

**SENSORY PROCESSING DISORDER: PERCEPTIONS
OF THE
CLINICAL ROLE OF THE ADVANCED PSYCHIATRIC
NURSE**

**To be submitted to “Health SA Gesondheid”
(please see section 1.13)**



HEALTH SA GESONDHEID

Journal of Interdisciplinary Health Sciences

AUTHOR INFORMATION PACK

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ISSN: 1025-9848

DESCRIPTION

Health SA Gesondheid - Journal of Interdisciplinary Health Sciences is an open access, peer-reviewed interdisciplinary and interprofessional scholarly journal that aims to promote communication, collaboration and teamwork between professions and disciplines within the health sciences to address problems that cross and affect disciplinary boundaries.

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GUIDE FOR AUTHORS

INTRODUCTION

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All authors should have made substantial contributions to all of the following: (1) the conception and design of the study, or acquisition of data, or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content, (3) final approval of the version to be submitted.

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Sensory processing disorder: perceptions of the clinical role of the advanced psychiatric nurse

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ABSTRACT

Background: Sensory processing disorder is a neurological condition that is a reality in the lives of many children. These children form part of the patient population to whom advanced psychiatric nurses render healthcare. Currently there is no specific inclusion of formal education on this condition for the advanced psychiatric nurse and clarity on the clinical role of the advanced psychiatric nurse in sensory processing disorder is still unclear, which is a loss in clinical nursing practice with regard to diagnosis, treatment and research.

Objectives: The purpose of this study was to explore and describe the perceptions of healthcare professionals in South Africa with regard to what the clinical role of the advanced psychiatric nurse is in sensory processing disorder with the intent to provide a description of this role to guide future clinical practice of the advanced psychiatric nurse.

Method: An explorative and descriptive design was used. Sampling was initiated using a purposive sample, which included healthcare professionals in the personal resource data base of the researcher's private practice. Initial sampling was followed by snowball sampling if potential participants agreed to act as mediators in the recruitment process. The Delphi technique was implemented with three sequential rounds, gathering data on the perceptions of the healthcare professionals on the clinical role of the advanced psychiatric nurse in sensory processing disorder. Three online questionnaires were sent via Survey Monkey. The first round included an open-ended question (sample size=18) to gather data on the opinions of health professionals with regard to the clinical role. Data round two (sample size=18) included a statement questionnaire based on the perceptions of the participants of round one and that had to be agreed/disagreed with using a 5-point Likert scale. The third and final data round was then sent (sample size=18) by using the same statement questionnaire used in the second round, together with the descriptive statistics and remarks gathered during round two, with the purpose of giving the participants the opportunity to review their responses from the previous round and to again agree or disagree according to the 5-point Likert scale. Quantitative data were analysed using descriptive statistics and the qualitative data were analysed with the use of thematic analysis.

Results: Analysis of the data produced the following main themes – (a) Specialized training of the APN in sensory processing disorder (b) Interventions carried out by the APN with regard to sensory processing disorder (c) Adequate support to the family with regard to sensory processing disorder (d) Referral of a child with sensory processing disorder.

Conclusion: The study indicated that the healthcare professionals who are experts in delivering healthcare to children with sensory processing disorder agree that the advanced psychiatric nurse with additional training in this condition has a clinical role to play in rendering healthcare to these

healthcare users. Recommendations are formulated for nursing practice, nursing education and further research.

Key words: sensory processing disorder, advanced psychiatric nurse, clinical role, diagnosis

OPSOMMING

Agtergrond: Sensoriese prosesseringsteuring is 'n neurologiese toestand wat 'n realiteit is in die lewe van baie kinders. Hierdie kinders vorm deel van die populasie wat gesondheidsorg ontvang vanaf gevorderde psigiatriese verpleegkundiges. Tans is daar geen formele onderrig in sensoriese prosesseringsteuring vir gevorderde psigiatriese verpleegkundiges nie en hulle het ook geen riglyne wat die kliniese rol van die gevorderde psigiatriese verpleegkundige beskryf nie. Dit kan gesien word as 'n leemte in die kliniese praktyk met betrekking tot diagnose, behandeling en navorsing.

Doelwitte: Die doel van hierdie studie was om die persepsies van professionele gesondheidswerkers van die kliniese rol van die gevorderde psigiatriese verpleegkundige in die behandeling van sensoriese prosesseringsteuring te verken en te beskryf ten einde 'n beskrywing van hierdie kliniese rol aan te bied.

Metode: Die studie het 'n verkennende en beskrywende ontwerp gebruik. 'n Paneel van kundiges wat gesondheidsorg verskaf aan kinders met sensoriese prosesseringsteuring is uitgesoek deur middel van doelgerigte steekproefneming om die aanvanklike deelnemers te selekteer. Dit is opgevolg deur die sneeubaltechniek wat behels het dat die deelnemers kon optree as tussengangers om verdere deelnemers te werf. Die implementering van die Delphi-tegniek het behels dat daar drie opeenvolgende data-insamelingsrondes was wat bestaan het uit aanlynvraelyste gestuur deur SurveyMonkey. Ronde 1 het bestaan uit een oop-einde vraag (steekproefgrootte $n=18$) wat die deelnemers aangemoedig het om hulle persepsies rondom die kliniese rol van die gevorderde psigiatriese verpleegkundige in sensoriese prosesseringsteuring te noem en te bespreek. Ronde 2 het bestaan uit 'n vraelys van stellings gebaseer op die persepsies van die deelnemers soos verskaf in Ronde 1. Dieselfde deelnemers is genader as vir die vorige ronde ($n=18$) en hulle moes saamstem of verskil met die stellings volgens 'n 5-punt Likertskaal en hulle antwoorde motiveer indien nodig. Ronde drie is ook aan dieselfde deelnemersdeelnemers gestuur ($n=18$) en het dieselfde vraelys van Ronde 2 ingesluit met die beskrywende data en kommentaar bygevoeg sodat die deelnemers kon saamstem of verskil (5-punt Likertskaal). Die stellings het die response van die vorige ronde in ag geneem. Die oorhoofse doel was om konsensus te bereik rondom die stellings ten einde 'n rolbeskrywing te kon saamstel. Kwantitatiewe data is ontleed met behulp van beskrywende data en kwalitatiewe data met tematiese ontleding.

Resultate: Data-analise het die volgende vier temas na vore gebring – (a) Gespesialiseerde onderrig van die gevorderde psigiatriese verpleegkundige in sensoriese prosesseringsteuring; (b) Intervensies deur gevorderde psigiatriese verpleegkundige in sensoriese prosesseringsteuring; (c) Voldoende ondersteuning van die familie met betrekking tot sensoriese prosesseringsteuring; (d) Verwysing van die kind met sensoriese prosesseringsteuring.

Gevolgtrekking: Die studie het bevind dat gesondheidswerkers wat kenners is in die lewering van gesondheidsorg aan kinders met sensoriese prosesseringsteuring saamstem oor die feit dat die gevorderde psigiatriese verpleegkundige 'n kliniese rol het om te vervul in die lewering van gesondheidsorg aan kinders met hierdie toestand. Aanbevelings is geformuleer vir die verpleegpraktyk, verpleegonderrig en vir verdere navorsing.

Sleutelwoorde: sensoriese prosesseringsteuring, gevorderde psigiatriese verpleegkundige, kliniese rol, diagnose

LIST OF ABBREVIATIONS

ANP	Advanced Nurse Practitioner
APN	Advanced Psychiatric Nurse
MCur	Magister Curationis
MPT	Multi-professional Team
NWU	North-West University
RAU	Randse Afrikaanse Universiteit / Rand Afrikaans University
SANC	South African Nursing Council
SPD	Sensory processing disorder
SPSS	Statistical Package for the Social Sciences
SI	Sensory integration
START	Strive Towards Achieving Results Together Program
OT	Occupational therapist
WHO	World Health Organisation

1 INTRODUCTION

The introduction discusses the background and the problem statement, with a brief overview of the relevant literature.

1.1 Background and problem statement

Sensory processing disorder (SPD) is a neurological condition where the information that is received by the senses is not used effectively by the brain (Kranowitz 2005:9). This condition is a reality in the lives of many children. They are left to cope with the challenge SPD presents on a daily basis. According to Kranowitz (2006:3), sensory processing is a normal process that forms part of a human's daily neurological functioning and this process of neurological functioning cannot be observed objectively. Therefore, the process of defining sensory processing on a more concrete and clinical level is still ongoing (Alterio 2007:1) and how we make sense out of our physical experiences on a sensory level is to a large extent still a mystery.

Historically, sensory integration (also referred to as sensory processing) theory and the treatment of conditions related to dysfunctions of the sensory integration system was first identified and developed by an occupational therapist, A. Jean Ayres (2005:3). Ayres laid the foundation for describing terminology specific to sensory integration and explaining what the basic theory is in people battling with disorders of sensory regulation and processing (Miller & Lane 2000:1). Miller and Lane (2000:1) focused their research on mostly clarifying terminology regarding sensory integration theory and practice. By defining the terminology, they aimed to illuminate meaning to create a joint understanding among health professionals with regard to education, future research and teaching of this particular condition.

The American Occupational Therapy Association (Miller *et al.* 2011) also compiled a position statement on sensory integration terminology. This position statement is still used as a guideline for diagnostic terminology.

Currently SPD is used as the diagnostic term (label) by the majority of health professionals when referring to individuals experiencing intricacies in sensory processing that affect their daily functioning (Byrne 2009:314). The diagnosis and treatment of SPD are mainly reserved for the study field of occupational therapy and is a specialization field at post-graduate level. The Mental Health Information Committee of the Children's Hospital of Eastern Ontario (CHEO 2009:2) mentioned in an article on SPD that knowledge of sensory processing disorders do not form part of the professional knowledge of many doctors (also see Anon. 2013:5). The reason doctors posit is that there is a lack of evidenced-based research to support this condition as a differential diagnosis. It is also the academic experience of the researcher, being an APN student, that specific education and training regarding

SPD is not incorporated in the current pre- and postgraduate nursing programmes. This is a matter of concern in the sense that there are advanced psychiatric nurses working in primary healthcare settings in both the public and private sector that may come into contact with patients presenting with signs and symptoms of this condition. The fact that SPD is not currently included in formal nursing education can present a “lost opportunity in diagnosis, treatment, and research” (Byrne 2009:314).

Whether SPD is mild or severe, it remains a mental health problem that is difficult to understand and treat. If this condition is neglected, it may negatively affect how a child develops psychologically and how the child matures, behaves, learns, communicates, plays and relates to other people. This can in the long run have a detrimental effect on the child’s inter-personal relationships (Kranowitz 2006:7). This, in turn, can lead to learning difficulties that may hamper the process of the affected individual developing to his or her best potential at physical, cognitive and emotional level.

Most of the available literature stresses the importance of the fact that sensory integration falls in the scope of post-graduate trained health professionals and that a multi-disciplinary team approach should be followed in successfully identifying and treating the condition (Reebye & Stalker 2007:194; Bullen 2013:3; Allington-Smith 2006:131). As the advanced psychiatric nurse (APN) plays an integral role in the multi-disciplinary team approach, the professional role of the APN with regard to SPD should be clarified.

Furthermore, a paper by Flisher *et al.* (2012:150) about child and adolescent mental health in South Africa focuses on service needs of the children and adolescents in the South African context with regard to mental health and psychiatric disorders. The paper refers to neuro-psychiatric syndromes that include cognitive impairment, developmental delay, attention and concentration problems, serious mental illness and common mental disorders like depression, anxiety and substance abuse (Rao *et al.* 2007 as cited by Flisher *et al.* 2012:150). These are all conditions on which the advanced psychiatric nurse is trained (Uys & Middleton 2014:310). Some of these conditions, like attention and concentration disorders, can be co-morbid conditions in relation to SPD (SPD Foundation 2016).

Currently, Primary Healthcare Clinics are the point of entry into the healthcare system for the majority of the population in South Africa (Xaba, Phiri & Peu 2012:2) and for other countries like America (Cawley, Hooker & Crowley 2012:43). Clinics are mainly managed and driven by registered nurses. Mother and child healthcare in South Africa are supported by the ‘Free Health Care Policy’ (Government Notice 657 1994). This policy provides for free healthcare for all mothers and all children aged six years and younger. Again, as registered nurses are the first line of treatment contact in the public healthcare sector of South Africa, it can be assumed that the majority of the child population’s health is attended to by the nurse practitioner, who then starts with the line of referral to

specialist services if available such as the advanced psychiatric nurse and other multi-professional team members (Mauro 2014:3).

In light of the Advanced Nurse Practitioner (ANP) rendering a comprehensive health care service at entry level health care, the ANP must be able to give support and implement a plan of treatment by using the available scientific information, such as the sensory integration frame of reference as currently used by the occupational therapy field of study (Mauro 2014:3).

According to Byrne (2009:318), the SPD Network in America has resources available for occupational therapists, physical therapists, physicians and teachers, but none are included for the nursing profession. Byrne has also stated that SPD is seldom included in everyday nursing and medical curricula. She has also referred to the fact that nurse practitioners already screen for developmental abnormalities in children and that they are able to diagnose, treat and refer for most of the disorders (Byrne 2009:318).

It is furthermore evident that the clinical role of the advanced psychiatric nurse is embedded in a comprehensive education in psychiatric illness, neurophysiology, psychopharmacology and stimulation programmes, for example the Strive Towards Achieving Results Together programme (START) (Shenton 2004), but SPD is not explicitly addressed. However, the academic education of the APN supports him or her with a sound knowledge base to advance on and to qualify for further training in sensory processing at a specialist level (Du Plessis & Koen 2014:4).

The clinical role of the APN entails promoting and maintaining the mental health of the client by implementing the nursing process (ANA 2006:3). Mendes, Da Cruz & Angelo (2014:318) have undertaken a critical literature analysis to conceptualize the clinical role of the advanced clinical nurse. They have found that the clinical role of the advanced clinical nurse is constantly evolving as advanced practices are characterized by continuously changing functions and designations. This stresses the importance of the advanced clinical nurse including the advanced psychiatric nurse being able and competent to develop professionally and to perform advanced psychiatric nursing care applicable to all mental health conditions and disorders, including SPD. However, studies have indicated that the stakeholders do not clearly understand the clinical role of the advanced clinical nurses, such as advanced psychiatric nurses (Kilpatrick *et al.* 2013:1525).

The researcher assumes that the stakeholders that Kilpatrick *et al.* (2013:1525) refer to are the multi-professional health team (MPT). The researcher tested the waters by consulting with some of the health professionals about the role of the APN in SPD. The discussions revealed that the professionals consulted were not sure of what the clinical role of the APN is when it comes to SPD. The professionals did not know what the current professional skills and competencies of APN's are and

how they can contribute to evidenced-based practice. Moore (2013:265) has engaged in research that focused on introducing the role of the advanced clinical nurse in a multi-facility healthcare system by highlighting the fact that the role of this nurse should be clearly defined and understood by nurse students and the MPT.

Temane, Poggenpoel, Myburg (2014:1) referred to advanced practice nursing as a new focus in nursing and that terminology in advanced nursing practice in relation to the professional nurse acting as an advanced practitioner is still in the process of being clarified by subcommittees in the SANC. The South African Nursing Council (SANC) presented a generic competency framework for the Advanced Nurse Practitioner (ANP) in May 2014. In this framework the professional competencies of the ANP is divided into five main domains with subdomains or core competencies to make the domains more specific. The headings for the domains includes the following topics: 1) Professional, ethical and legal practice; 2) Care provision and management; 3) Personal development and quality of care; 4) Management and leadership; and 5) Research. This framework clearly shows that the ANP has to adhere to a high standard of personal and professional competency to be able to practise in his or her field of speciality.

With this need for role clarification of the advanced nurse practitioner in mind, the researcher thought it most appropriate to investigate the professional opinions of the mental health team with regard to the perceived clinical role of the advanced psychiatric nurse in the identification and management of children with SPD.

1.2 Purpose and objectives

The purpose of the study was to explore and describe the perceptions of healthcare professionals, who are involved in healthcare to children diagnosed with SPD, of the clinical role of the APN in relation to SPD. The study aimed to provide the APN and other healthcare professionals with a description of what the clinical role of the APN is with regard to providing mental healthcare to children presenting with signs and symptoms of SPD.

The objectives included the following:

To explore and describe the perceptions of healthcare professionals who are involved in healthcare to children diagnosed with SPD of what the clinical role of the APN should be in this regard.

To provide a description of the clinical role of the APN in SPD.

1.3 Definition of key concepts

1.3.1 Sensory Processing Disorder

This is a condition of neurological origin and is identified when the incoming information to the brain, received via the senses, is not processed in an organized and accurate way (Kranowitz 2005:9). This results in inaccurate processing and judgement of sensory information with regard to smell, touch, movement, sound and taste (Mauro 2014:28). The child can furthermore experience difficulty with moving, regulating emotions, attention problems and adapting responses as needed (Kranowitz 2005:69).

This study focuses on the clinical role of the APN in rendering mental healthcare to children with SPD.

1.3.2 Healthcare professional

Healthcare professionals as referred to in the context of this study include educated individuals experienced in providing healthcare services to children diagnosed with SPD. It includes the following persons:

Paediatrician; paediatric psychiatrist; advanced practitioner nurse qualified in the field of community health, neonatal or psychiatric nursing; educational psychologist; occupational therapist; physiotherapist; speech therapist; social worker.

1.3.3 Advanced Psychiatric Nurse

A registered nurse licensed and registered with a national nursing council, in this case the South African Nursing Council, and educationally prepared at masters or doctorate level in the field of psychiatric and mental health nursing (ANA 2006:14). Currently, the terminology for advanced nurse practitioners in psychiatry is still being clarified by subcommittees in the South African Nursing Council (SANC). However, upon receiving the qualification they are registered as advanced professional nurses with the SANC as an additional qualification (Temane, Poggenpoel & Myburg, 2014:1). The advanced nurse practitioner is furthermore defined as an individual who focuses the provision of healthcare on primary care, health assessment, diagnosis and treatment (SANC 2012:1).

1.3.4 Clinical role of the Advanced Psychiatric Nurse

Mendes, Da Cruz & Angelo (2014:318) have referred to the clinical role of the APN as “the complex process of interaction between the nurse and the client.” Psychiatric/mental health nursing is a field of specialization and the American Nurses Association (ANA 2006:3; ANA 2012:8) defines the clinical

role of the APN as one of promoting and maintaining the mental health of the APN's clients by implementing the nursing process. This process enables the APN to assess, diagnose and treat signs and symptoms that indicate mental health illness and psychiatric disorders. In this research the focus is thus on the clinical role of the APN in assessing, diagnosing and treating children with SPD.

1.3.5 Primary healthcare setting

Primary healthcare is defined by Cawley, Hooker, & Crowley (2012:44) as an integrated health care service that is accessible to the community and that provides health care that focuses on the needs of patients and developing partnerships with those seeking health care. For the purpose of this study a primary health care setting is defined as any health care setting where psychiatric/mental health care, be it in the private or public health sector, is delivered by the APN.

2. RESEARCH DESIGN

2.1 Research approach

An explorative and descriptive design was applied in the research study. The purpose of this study was to explore and describe the perceptions of a panel of health care experts with regard to the clinical role of the APN in giving care to a patient with SPD in order to describe the clinical role of the APN in SPD. The Delphi technique was used as the chosen methodology. The process included the use of several rounds of data collection, using both qualitative and quantitative methods. The Delphi design and technique of data gathering aims to reach consensus on a topic among a group of experts or where existing opinions are not clear (Du Plessis & Human 2007:17; Hanafin 2004:4). The Delphi technique was therefore appropriate in this research where it was necessary to obtain the perceptions of health care professionals as experts on the clinical role of the APN in SPD. In a Delphi study, the first round of data gathering is usually unstructured or semi-structured to facilitate 'free expression' of the ideas of the chosen panel of experts (Rowe *et al.* 1991 cited by Roberts-Davis & Read 2001:33). Free expression is facilitated by the fact that the panel members remain anonymous (Keeney, Hasson & McKenna 2011:32). Furthermore, the Delphi approach provides the safety that members cannot influence or manipulate one another's professional opinion. This approach is favourable because the research data had to be rich and descriptive, consensus was needed on the role of the APN in SPD and the opinion of experts was needed. According to Keeney *et al.* (2011:23), the technique of using a panel of experts to reach consensus on an issue is on the increase.

2.2 Research method

2.2.1 Study population, sampling and setting

The population included registered healthcare professionals in South Africa who are experienced and knowledgeable in providing healthcare services to children with SPD. This included paediatricians, paediatric psychiatrists, advanced nurse practitioner's in the field of community health; neonatal or psychiatric nursing, educational psychologists, occupational therapists, physiotherapists, speech therapists and social workers. All of the above health professionals except the nursing professionals had to be registered with the Health Professionals Council of South Africa and had to be involved in the healthcare of children diagnosed with SPD for at least three years. The nursing professionals had to be registered with the South African Nursing Council and had to have had experience in the field of providing healthcare to children diagnosed with SPD for at least three years.

Sampling of the population initially entailed purposive sampling, followed by a snowball sampling strategy, since the researcher was not able to locate all the professionals in the population (Brink, Van der Walt & Van Rensburg 2012:139; Wagner, Kawulich & Garner 2012:92). Snowball sampling implied that the initial participants were invited to assist the researcher in identifying further participants by inviting participants in their own network of professionals who are considered experts in SPD (Brink et al. 2012:142). The initial participants were identified from a contact list based on the researcher's private practice experience in consulting with health professionals who provide healthcare to children with SPD. The same participants were used for all the data gathering rounds. This method was the most applicable and financially feasible for the purpose of this study (Brink et al. 2012:139).

Table 1 contains the inclusion and exclusion criteria that were used to identify the sample.

Table 1 Inclusion and exclusion criteria

INCLUSION CRITERIA	EXCLUSION CRITERIA
A qualified healthcare professional with three years post-qualification experience in providing healthcare to children with SPD in South Africa: This includes the following fields: paediatricians, paediatric psychiatrists, advanced nurse practitioner's in the field of community health; neonatal or psychiatric nursing, educational psychologists, occupational therapists, physio-therapists, speech therapists and social	Healthcare professionals who are not currently registered with their regulating bodies for particular profession in South Africa. Healthcare professionals not working in the field of rendering healthcare to children with SPD. Healthcare professionals who do not have access to e-mail or the internet.

INCLUSION CRITERIA	EXCLUSION CRITERIA
workers. The participant must be willing to participate in the study. The participant must be fluent in the reading and writing of English	

2.2.2 Recruitment of participants

The researcher has been working in private mental healthcare for the past four years and has built a network of contacts with healthcare professionals in the field of SPD. The researcher applied purposive sampling (Brink et al. 2012:141) by compiling an initial participant contact list generated from her knowledge and networks of healthcare professionals who play a role in SPD treatment and who can be seen as experts in this field and who complies with the inclusion criteria (see Table 1).

Contact with the first line of participants selected was initiated by an electronic advertisement sent to them via e-mail to inform them about the nature of the study and to request a reply if they want to participate. Those who expressed interest in participating, received an information sheet via a Survey Monkey e-mail that included a comprehensive discussion on the nature of the study, what the role of the participants entails and what was expected of them (Keeney et al. 2011:22). An informed consent clause that had to be ticked if the participant wanted to take part in the study and gain access to the first round of data gathering was also incorporated after the information sheet. The initial participants were asked to act as mediators in identifying and inviting more participants that are known to them and comply with the selection criteria, but who are not known to the researcher. It was expected of these mediators to sign a confidentiality agreement to ensure the confidentiality of potential participants in the study.

Both the researcher and a HREC representative were available for any enquiries raised by potential participants regarding the research study. The participants who agreed to be mediators for the rest of the snowball sample then contacted other healthcare professionals who could be included in the sample. They used the inclusion and exclusion criteria as guideline and the advertisement previously sent to them. The researcher continued with sampling until data saturation was reached. Data saturation involved collecting data until the themes identified from data analysis become repetitive, indicating saturation (Creswell 2014:189).

Privacy and confidentiality to promote anonymity is discussed in section 12.3. The researcher did consider the slight possibility that there may be potential participants that do not have access to an e-

mail and therefore cannot participate in the study. This aspect is described as a shortcoming of the study.

2.2.3 Data collection and analysis

Diagram 1 provides an outline of the application of the Delphi technique with the explorative and descriptive design.

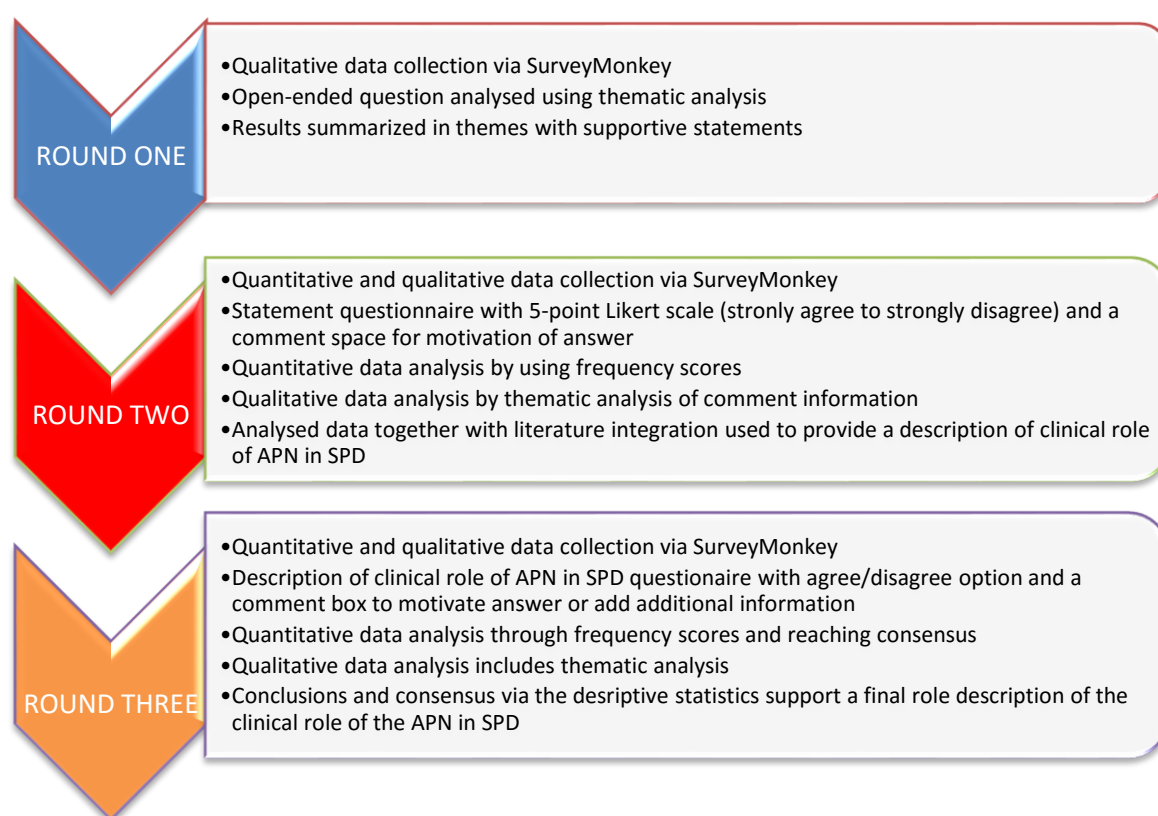


Diagram 1 *An outline of the explorative and descriptive design*

2.3 Context of the study

The research was not limited to one setting, as the potential participants were geographically widespread and an online approach was followed during data collection. The research took place in the participant's personal setting.

2.4 Materials

During Round 1 an open-ended questionnaire (see section 2.5.1) was sent to the participants via Survey Monkey to generate qualitative data. The intent with the first round was to analyse the data and generate statements regarding the clinical role of the APN in SPD. These statements were then

presented to the participants via Survey Monkey for them to agree or disagree on a 5-point Likert scale. For Round 3 the descriptive data that reflected the consensus from data analysis were included in the questionnaire and the comments of the participants of the previous round. The 5-point Likert scale was once again included for the participants to agree or disagree, with additional space to motivate their answer.

2.5 Data collection procedure

Data collection took place by implementing three data gathering rounds characteristic of the Delphi method. Each round was scheduled to be two to three weeks apart.

2.5.1 Round 1 data collection

The first round of data collection was less structured (Keeney et al., 2011:20; Du Plessis & Human, 2007:20) and was initiated by the researcher sending the participants an electronic open-ended question, using the Survey Monkey software program (SurveyMonkey Inc. 2015).

The research question formulated to initiate the first round was: “According to the American Nurses Association (ANA 2012), the clinical role of the advanced psychiatric nurse practitioner is defined as one of promoting and maintaining the mental health of the APN’s clients by implementing the nursing process. This process enables the APN to assess, diagnose and treat signs and symptoms that indicate mental health illness and psychiatric disorders. What do you think is the clinical role of the advanced psychiatric nurse in delivering mental healthcare to children with sensory processing disorder? Please provide a role description as complete and comprehensive as you can.” This question has been formulated to correlate with the purpose of this research.

A trial run was conducted to test the clarity and relevance of this question by inviting a nursing specialist who has knowledge about sensory processing disorder and practical experience in rendering health care to children to assess the clarity and relevance of the question. Data generated from this trial run was not included for data analysis, as this expert was not anonymous to the researcher and the data generated may have been biased.

After the trial run, data collection commenced. The participants had seven days to complete the open-ended question and the expectation was that it would not take more than 30 minutes to complete. After seven days all participants received a once-off e-mail reminding them to respond. Received responses were made anonymous by the researcher by selecting the relevant option of the Survey Monkey software program and this prevented the researcher from identifying the participants when receiving and analysing the data.

2.5.2 Round 2 data collection

The statements identified from Round 1 qualitative data analysis was listed under four main themes and presented to the participants for the second round to create a statement questionnaire with a 5-point Likert scale (strongly agree to strongly disagree) and space to comment on answers (Wagner et al. 2012:110). The original opinions of the participants were integrated into the statements so that the respondents could identify with their own ideas. The intention was that these statements would describe the role of the APN in SPD as expressed in the language used by the respondents. The questionnaire was then sent to at least two experts in advanced psychiatric nursing practice for validation. The validation was guided by the experts indicating whether they agree or disagree with regard to the relevance and clarity of the statements.

The statement questionnaire was then sent electronically to the same participants who responded to Round 1 (n=18). The software program Survey Monkey has a function that controlled this aspect, ensuring that participants remained anonymous. The focus of Round 2 was on gathering quantitative data on the consensus reached between experts on statements that describe the role of the APN in SPD, as derived from Round 1.

An additional space for comments ensured the generation of further qualitative data to support the numerical data with the purpose of adding to rich and thick descriptions that could be included in discussion of findings. The participants again had seven days to respond and the questionnaire was estimated not to take more than 20 minutes to complete.

2.5.3 Round 3 data collection

Descriptive data reflecting consensus after data analysis of Round 2 was included in the same questionnaire used in the previous round and sent to the participants to agree or disagree. By including the consensus data and comments of the previous rounds, the participants were given the opportunity to re-evaluate their previous responses and alter responses if needed.

2.6 Data analysis

2.6.1 Round 1 data analysis

Data gathered during Round 1 was analysed using thematic analysis (Wagner et al. 2012:110; Creswell 2014:234)) to generate themes and statements relating to the clinical role of the APN in SPD. Tesch's (Creswell 2014:198) eight steps were applied in coding the raw text data.

An independent co-coder experienced in qualitative research analysed the data and a consensus meeting was scheduled to reach consensus with regard to themes and sub-themes. Themes identified

was described by specific statements on the clinical role of the APN in SPD and presented as a statement questionnaire with a 5-point Likert scale, 1 reflecting strong agreement and 5 being a strong disagreement.

2.6.2 Round 2 data analysis

Data analysis for Round 2 included descriptive data with frequency distributions for the quantitative data and thematic analysis (Creswell 2014:198) for the qualitative data, again using Tesch's the eight steps (see Table 2). The researcher used a statistical software program (Wagner et al. 2012:199; Mouton 2001:74) known as the Statistical Package for the Social Science (SPSS) to analyse the quantitative data with the support of a statistical consultant. Consensus was determined by combining three measures: (Giannarou & Zervas 2014:73):

- the 51% responding to the category 'strongly agree', which is between the values 1 and 2 on a 5-point Likert scale,
- the interquartile range below 2.5 and
- the standard deviation below 1.5.

Table 2 Tesch's eight steps in the analysis process (Creswell 2014:198)

- 1) Read all data and get a sense of the whole.
- 2) Pick one document that is the most interesting and write thoughts in the margin.
- 3) Make a list of all the topics and cluster topics with the same theme into columns.
- 4) Review the data again with the list of topics and themes to guide the process of coding the topics and write the codes next to the segment that is applicable.
- 5) Decide on the wording that would best describe the topics and sort them into categories by clustering topics that are related.
- 6) Finalize the abbreviation for categories and sort these codes according to alphabetic order.
- 7) Organize the data material for each category in one place and proceed with a preliminary analysis.
- 8) Recode existing data if needed.

2.6.3 Round 3 data analysis

For Round 3 data analysis entailed quantifying the degree of consensus reached in the form of percentages of agreement or disagreement (Giannarou & Zervas 2014:73) and thematic analysis (Creswell 2014:198) for the motivation of answers, similar to the data analysis methods used in Round 2. The outcome of Round 3 analysis was expected to provide a full description of the clinical role of the APN in SPD, with an indication of consensus among the participants.

3. FINDINGS AND DISCUSSION

3.1 Results

3.1.1 Round 1

During Round 1, 39 potential participants were sent an e-mail invitation to participate in the study and only one of them signed a confidentiality agreement to act as a mediator for the snowball technique. Ultimately 18 participants agreed to the informed consent as included in the Survey Monkey program, thereby enrolling as a participant and gaining access to the open-ended question of Round 1. The data from the 18 participants from Round 1 was analysed by the researcher and a co-coder experienced in qualitative research, using thematic analysis (Table 2). The statements were compiled by using most of the original language and ideas of the participants so that the participants of Round 2 would easily identify with their responses. This would add to the validity of the statements. After a consensus meeting between the researcher and the co-coder, four principle themes with 5-6 statements (Table 3) reflecting on each theme, were finalized. The four main themes identified were:

A- Specialized training of the APN in sensory processing disorder

B- Interventions carried out by the APN with regard to sensory processing disorder

C- Adequate support to the family with regard to sensory processing disorder

D- Referral of a child with sensory processing disorder

Table 3 The four main themes with statements specific to each theme

Theme A: Specialized training of the APN in sensory processing disorder	
1)	The APN must be able to identify the basic components of sensory processing disorder
2)	It is vital for the APN to understand sensory processing disorder
3)	The APN needs additional training to recognize the signs and symptoms of sensory processing disorder as early as possible
4)	Sensory processing disorder is a specialized field and therefore additional training is required for APN's
5)	The APN needs to identify children who are at risk for sensory processing disorder

6)	The APN needs to be experienced in the field of sensory development and its assessment
Theme B: Interventions carried out by the APN with regard to sensory processing disorder	
7)	If the APN understands sensory processing disorder, he/she can alter the handling and treatment of the child
8)	The role of the APN includes assessment, nursing diagnosis and treatment of sensory processing disorder
9)	The APN must help to minimize the emotional trauma of children when exposed to the hospital environment
10)	The APN to implement sensory strategies in conjunction with the medical team
11)	The APN must provide a treatment programme to children and their families
12)	Adaptation of the environment that is within the control/abilities of the APN to support sensory organization
Theme C: Adequate support to the family with regard to sensory processing disorder	
13)	The APN needs to assist the family in receiving comprehensive services available to them
14)	The APN needs to adequately prepare the parents emotionally and physically with regard to possible surgical interventions
15)	The APN must provide parent counselling and information regarding sensory processing disorder
16)	Assist the family in carrying out the prescribed sensory interventions and home programmes
17)	The APN needs to support and train parents regarding sensory processing disorder
Theme D: Referral of a child with sensory processing disorder	
18)	The APN needs to refer the child to the occupational therapist for further management
19)	The APN needs to refer to an appropriate professional to treat the child and family
20)	The APN could facilitate communication between all the professionals working with the

A questionnaire was developed by the researcher and co-coder based on the qualitative data gathered during the first round that included a 5-point Likert scale. The questionnaire was then submitted to two independent advanced psychiatric nurse practitioners for evaluation and validation (Appendix E). This step ensured that the themes and statements was clear, relevant to advanced psychiatric nursing, a manageable number of statements, and easily understood.

3.1.2 Round 2

The questionnaire with statements reflecting the four themes (see Table 3) was sent back to the participants who enrolled in the study during Round 1 (n=18) in the form of a 5-point Likert scale ranging from ‘strongly agree’ to strongly disagree’. Only 13 (n=18) of the participants completed the questionnaire of Round 2 within the seven working days allocated. Statistical analysis of the data was performed by the statistical consultation service at the NWU (Potchefstroom Campus) using the Statistical Package for the Social Sciences (SPSS), which delivered descriptive statistics, frequency scores, percentage and mean for each statement. As per agreement with the statistician, categories 1 (strongly agree) and 2 (agree) were collapsed due to the fact that the difference between these two variables was unimportant. Therefore, where ‘1’ and ‘2’ on the Likert scale amounted to 51% and more, consensus on that statement was reached. In combination with the percentage of agreement, consensus was assessed by the interquartile range (IR) (2.5 or less) and the standard deviation (SD) (1.5 or below).

3.1.3 Round 3

After analysis of Round 2, controlled feedback to the participants was established by resending the same questionnaire as in Round 2 (Appendix G) with the inclusion of the descriptive statistics and comments for each statement for Round 3. The statements that indicated consensus and non-consensus during Round 2 were included so that the participants had the opportunity to re-rate their responses from Round 2 and to motivate their answer if needed. Participants were made aware of consensus among statements by colour coding the descriptive statistics (green = consensus and red = non-consensus). The comments reported earlier were also presented to invite them to reconsider their initial response by considering the information. Only 10 participants (n=18) responded to Round 3. The raw data of Round 3 was again sent to the statistician for quantitative data analysis identical to the descriptive data of Round 2. The descriptive data indicating consensus for Round 2 and 3 are presented in Table 4. The percentage agreement of 51% and above was chosen to be representative of

consensus among the participants for this study, supported by the fact that “consensus among group members is a fundamental aim of the Delphi process (Owen, Ley & Aitken 2008:421).” The comments/remarks of the respondents are included in the discussion of the results and literature integration.

Table 4 Statement consensus (Areas coloured in green indicate consensus and in red non-consensus)

Statement	% 1-2 Consensus 51% or more		IR Consensus 2.5 or less		SD Consensus 1.5 or lower		Median	
	Round 2	Round 3	Round 2	Round 3	Round 2	Round 3	Round 2	Round 3
1) The APN must be able to identify the basic components of sensory processing disorder	100.00	100.00	1.00	0.25	0.48	0.42	1.31	1.20
2) It is vital for the APN to understand sensory processing disorder	92.30	100.00	1.00	0.25	0.87	0.42	1.54	1.20
3) The APN needs additional training to recognize the signs and symptoms of sensory processing disorder as early as possible	92.30	100.00	1.00	0.00	0.65	0.32	1.38	1.10
4) Sensory processing disorder is a specialized field and therefore additional training is required for APN's	100.00	100.00	0.50	0.25	0.44	0.42	1.23	1.20
5) The APN needs to identify children who are at risk for sensory processing disorder	100.00	100.00	0.50	1.00	0.44	0.48	1.23	1.30

6) The APN needs to be experienced in the field of sensory development and its assessment	53.80	70.00	2.50	2.25	1.26	1.38	2.62	2.30
7) If the APN understand sensory processing disorder he/she can alter the handling and treatment of the child	84.6	70.00	1.00	2.25	1.26	1.42	1.92	2.70
8) The role of the APN include the assessment, nursing diagnosis and treatment of sensory processing disorder	15.40	40.00	2.00	2.25	1.44	1.29	4.08	3.90
9) The APN must help to minimise the emotional trauma of children when exposed to the hospital environment	100.00	100.00	0.00	0.25	0.28	0.42	1.08	1.20
10) The APN to implement sensory strategies in conjunction with the medical team	100.00	77.80	1.00	1.50	0.49	1.27	1.67	2.11
11) The APN must provide a treatment programme to children and their families	15.40	40.00	2.00	2.25	1.28	1.33	3.85	4.00
12) Adaptation of the environment that is within the control/abilities of the APN to support sensory	100.00	100.00	1.00	1.00	0.52	0.53	1.54	1.50

organisation								
13) The APN needs to assist the family in receiving comprehensive services available to them	100.00	100.00	0.50	0.25	0.44	0.42	1.23	1.20
14) The APN needs to adequately prepare the parents emotionally and physically with regard to possible surgical interventions	100.00	90.00	1.00	1.00	0.52	1.20	1.46	1.90
15) The APN must provide parent counselling and information regarding sensory processing disorder	46.20	66.70	2.00	3.00	1.28	1.32	2.85	3.33
16) Assist the family in carrying out the prescribed sensory interventions and home programmes	69.20	90.00	2.00	1.00	1.26	0.97	2.38	2.60
17) The APN needs to support and train parents regarding sensory processing disorders	30.80	40.00	2.00	2.25	1.17	1.29	3.23	3.90
18) The APN needs to refer the child to the occupational therapist for further management	100.00	100.00	0.00	0.00	0.28	0.32	1.08	1.10
19) The APN needs to refer to an appropriate	100.00	100.00	0.00	0.25	0.39	0.42	1.17	1.20

professional to treat the child and family								
20) The APN could facilitate communication between all the professionals working with the child	91.70	100.00	1.00	1.00	0.67	0.48	1.50	1.30

3.2 Discussion of results

Themes and sub-themes are discussed, referring to the consensus reached, remarks and comments by the participants, and to relevant literature. Results from the different rounds of the Delphi are referred to as R 2 (Round 2) and R 3 (Round 3).

Theme A: Specialized training of advanced psychiatric nurses in sensory processing disorder

The top ranking statements that the experts agreed with regarding the APN having specialized training in SPD seem to be that the APN must be able to identify the basic components of SPD (R 2= 100% and R 3=100%); that sensory processing disorder is a specialized field and therefore additional training is required (R 2=100% and R3=100%); and that the APN should identify children who are at risk for SPD (R 2=100% and R 3=100%). This reflects a strong agreement by the participants that the APN must receive additional training in SPD to be able to identify children who are at risk for SPD by being able to identify the basic components of this disorder.

The APN understanding SPD (R 2=92.3% and R 3=100%) and needing additional training in SPD to be able to recognize the signs and symptoms as early as possible (R 2=92.3% and R 3=100%) were also seen as statements that should be included in the theme of the APN having specialized training in SPD. This is in line with literature, for example Champagne and Stromberg (2004:7) argue that to establish a sensory-based programme, the clinical staff should be trained to a level that reflects an understanding of sensory-based approaches.

According to Kranowitz (2005:215), screening for developmental deficiencies is not a complicated procedure and that it can be performed by any Occupational Therapist (OT) or qualified professional. Developmental problems can present in the following categories: cognitive, physical, speech and language, psychosocial, self-help, or adaptive functioning (Kranowitz 2005:215). If signs of deficiency in the development areas are evident, then the child should undergo a formal evaluation. Depending on the type of problem, an assessment will be performed by a health professional qualified in the area of concern, for example, problems with sensory integration are assessed by an OT (Kranowitz 2005:215). Advanced nursing practice requires of the advanced nurse practitioner to depend on scientific tools that support them in conducting a systematic patient history and performing a full physical examination (Jones & Cheek 2003:122; Courtenay, Stenner & Carey 2010:1052) that may include a neurological assessment (Roberts-Davis & Read 2001:40; McElhinney 2010:3178). As SPD is a neurological condition and the APN is educated to perform a neurological assessment, it is clear that the APN with specialized training in SPD will be able to identify the signs and symptoms of this condition and to develop and understanding based on the antecedent of having the specific advanced skills.

Kranowitz (2005:219) further refers to the fact that the OT treating sensory processing disorders must be specialized in paediatrics, with additional postgraduate training in the theory and treatment with regard to sensory integration. Currently, training in sensory integration is presented by the South African Institute for Sensory Integration (SASI) and health professions that can apply for the five-year course are occupational therapists, physiotherapists, and speech therapists. Once completed, the professionals can register as certified Ayres Sensory Integration Therapists and are subsequently listed on the official website of SASI (www.instsi.co.za).

The STAR institute for SPD based in America and founded by Dr Lucy Jane Miller (OT) offers over 70 online courses to health professionals via the internet at the SPDUniversity.org. These courses cover theory with regard to SPD, which includes diagnosis and treatment. The assessment courses are just available to 'professional audiences'. Again they only refer to the occupational therapist, speech therapist, and the physiotherapist. Courses that are open to the nurse practitioner to attend online cover the SPD fundamentals, which include:

Definitions and interventions of SPD

Strategies designed for school, clinic and home

Postural disorder, dyspraxia, and sensory discrimination programmes

Principles of the STAR Treatment Model

These courses can be seen as a scientific support base and point of entry for the APN to build advanced knowledge and training in SPD as expected by the panel of experts in this study. Literature supports the belief of the participants that early diagnosis and treatment of children presenting with SPD is important and if left undiagnosed or untreated, the condition can have a negative impact on the developing brain of the child and the behaviour system (Byrne 2009:315; Mauro 2014:19).

A further statement was that the APN should be experienced in the field of sensory development and its assessment. (R 2=53.8% and R 3=70%). Although the consensus of the participants of Round 2 was low (53.8%), consensus of the participants for Round 3 amounted to 70% which was a strong indication that the panel of healthcare experts agree that the specialized training of the APN should include the competency of assessing for sensory development. Several of the participants commented on this in round 2:

The person needs to be able to identify not to intervene (round 2).

I don't think the APN should be able to assess for SPD, rather identify the factors and then refer for assessment with an SI trained OT (round 2).

Not formal assessment, through checklists and information gathered they must have enough knowledge to be able to refer (round 2).

Only possible if further training is received (round 3).

I agree that not included in formal assessment of SPD (round 3).

The APN who specialised in Child psychiatry and received special training in SI could treat SPD (round 3).

Only refer, not to assess or treat (round 3).

Agree APN has to be able to identify, not treat (thus careful interpreting 'experienced in the field of SI') (round 3).

A paper by Byrne (2009:314), written to support the role of the nurse practitioner with regard to children with SPD, stresses the fact that the nurse is in a unique position to "fill the knowledge gaps in assessment, treatment, education and research" with regard to rendering healthcare to children with SPD. Nursing literature further supports the clinical role of the advanced nurse practitioner (ANP) in the domain of being able to perform an evaluation or assessment by relying on 'tools' that include observation, enquiry, attentiveness and monitoring (Jones & Cheek 2003:122; Courtenay et al. 2010:1052). Assessment by the ANP also includes taking a systematic patient history, which is then followed by a full physical examination (Jones, Robson, Whitfield & Gray 2010:809; Courtenay et al. 2010:1051). The ANP also has the knowledge and skill to perform cardiopulmonary and neurological assessments (Roberts-Davis & Read 2001:40; McElhinney 2010:3178).

Theme B: Interventions carried out by the APN with regard to sensory processing disorder

Three statements that were strongly agreed with was that the APN must help to minimize the emotional trauma of children when exposed to the hospital environment (R 2=100% and R3=100%); the APN should implement sensory strategies in conjunction with the medical team (R 2=100% and R 3=77.8%); and the adaptation of the environment that is within the control/abilities of the APN to support sensory organization (R 2=100% and R 3=100%).

These statements are supported by existing literature of nurses undertaking interventions to manage symptoms as they present (Lofmark, Smide & Wikblad 2006:724). These interventions may include scanning for physiological and behavioural changes (Aitken, Curreyb, Mardhallc & Elliot 2008:73).

Children with SPD can present with disruptive behaviour that could have a direct link to the compromised sensory system, for example if the child's tactile sense (touch) is 'defensive', then a light touch can be uncomfortable or scary to the child, even if they anticipate being touched (Kranowitz 2005:85). If the APN working in the hospital or clinic environment is trained in SPD, it will be possible to identify behavioural changes due to SPD and alter the healthcare environment and handling of the child to minimize emotional trauma by implementing sensory approaches in the hospital (Champagne & Stromberg 2004:5). APN's are also able to work closely with clinical providers (Hanrahan, Wu, Kelly, Aiken & Blank 2011:9; Aitken et al 2008:68; Lammon, Stanton & Blakney 2010:259) and would therefore be able to implement sensory strategies provided by the medical team.

If the APN understands sensory processing disorder he/she can alter the handling and treatment of the child, reached consensus as an intervention by the APN in SPD (R 2=84.6% and R 3=70%). The advanced nurse practitioner is trained in neurological assessment (Roberts-Davis & Read 2001:40; McElhinney 2010:3178), which serves as a foundation to support further training in the diagnosis and treatment of SPD.

Interestingly, the role of the APN that includes assessment, nursing diagnosis and treatment of sensory processing disorder (R 2=15.4% and R 3=40%) and the APN being able to provide a treatment programme to children and their families (R 2=15.4% and R 3=40%), resulted in strong non-consensus on the percentage level. The following comments by participants supported their disagreement:

Not the treatment of SPD. It should be referred to the specialist e.g. SI OT (round 2).

I am indicating 'neutral' here because I feel that there must be a point at which an OT is consulted so that the roles in these cases are not too blurred. And perhaps an OT can come into the picture at the assessment level (round 2).

SPD has to be assessed by a qualified OT, who can make recommendations to APN on handling techniques (round 2).

Treatment specific to the field of nursing, not SPD treatment i.e. can't prescribe and manage sensory integration therapy, only assist with carryover of home programmes etc. (round 2).

Only assisting in implementing strategies when child has seen SI OT (round 2).

Only if extra training is received (round 2).

The APN needs to receive training to qualify in sensory integration before any treatment can occur. Otherwise her role is to refer to someone who is qualified to deal with this (round 3).

Not the treatment thereof only assisting to implement home programme (round 3).

If APN has child psychiatry qualification and experienced and trained in SI. Clarity needed on the level of therapy an APN may deliver (round 3).

Roles/scope of practice need to be clarified. SI is not purely an OT field, OT just coined it. With the applicable training a SPECIALIST nurse can provide this treatment as well (round 3).

Literature that differs from these findings reveals that the ANP can engage in the process of assessment/evaluation and that this is part of the clinical role of the ANP. Roberts-Davis and Read (2001:40) conducted a study to clarify the role of the nurse practitioner indicating that the ANP can formulate a nursing diagnosis that are based on the integration and interpretation of clinical (signs and symptoms) and other findings (e.g. laboratory results/X-rays). Another attribute of the ANP's clinical role is that they can engage in the process of planning after formulating a diagnosis. This process of planning may include referring to other professionals (Mantzoukas & Watkinson 2007:30), planning nursing care that is unique to the patient (Aitken et al. 2008:75), establishing priorities (Lofmark, Smide & Wikblad 2006:726) and selection and prescription of medicines and treatments to patients for conditions that are specified according to an agreed protocol (Jones et al. 2010:805; Courtenay & Carey 2008:404; Mullally 2001:337).

The treatment regime planned by the ANP may include interventions that are focused on managing the symptoms of the condition (O'Conner, Peters & Walsh 2008:351) by performing clinical or outpatient procedures (Mullally 2001:337). This may include education (Grindel 2005:209) or helping patients to function in society (Davies 1993:631). Another intervention reflecting on professionalism on behalf of the ANP is that all care given to patients must be recorded (Mullally 2001:337). Taking the integration of literature into consideration it is therefore clear that the clinical role of the APN in SPD should include the attributes of being able to assess, diagnose and plan treatment for a child presenting with this condition, while the results of this study illuminate the need for awareness among healthcare professionals on the role of the APN.

Theme C: Adequate support to the family regarding sensory processing disorder

There was consensus for the APN to provide adequate support to the family with regard to SPD and to access the comprehensive services available to them (R 2=100% and R 3=100%) and the APN adequately

preparing the parents emotionally and physically with regard to possible surgical interventions (R 2=100% and R 3=90%).

Following the systems approach (Withrow 2007:5), the ANP is in the position to support the family by involving them in making decisions with regard to the best care (Davies 1993:629; Aitken et al. 2008:75). Establishing a trusting relationship with both the patient and the family (Davies 1993:633) and showing compassion (Davies 1993:629), can enhance the APN's role of rendering psychosocial care to the patient and his family (O'Connor, Peters & Walsh 2008:352).

Assisting the family to carry out prescribed sensory interventions and home programmes also attracted agreement from the experts (R 2=69.2% and R 3=90%). However, the following comments by participants reflected concern:

Refer on (round 2).

I would be concerned about the OT role and the APN role (round 2).

Interventions must be prescribed by the SI qualified OT and APN can assist the family (round 2).

Only under supervision of an SI OT (round 3).

If the program has been designed by a qualified SI therapist (round 3).

Must have regular consultation with the SI OT (round 3).

Guided by OT intervention plan- APN could assist in ensuring that it is implemented (round 3).

Assisting the family in implementing sensory interventions and home programmes is in line with the ANP's clinical role function of habilitating patients and their families so that they can be functional in society and empowered in the dimension of self-care (Davies 1993:631). It is further stated by Aitken et al. (2008:73) that the nurse practitioner should 'engage in activities' that will increase the level of practice and improve the outcome of healthcare rendered. However, some of the participants voiced concern with regard to what the role of the OT versus the role of the APN is when it comes to assisting the family in carrying out sensory interventions and home programmes.

Research undertaken by Duner (2013:246) aimed at examining professional collaboration and boundaries among inter-professional care planning teams by studying two different care teams. The outcome of the study revealed that the professional teams did strive to deliver an integrated service to reach 'holistic assessments'. However, there are certain preconditions (Duner 2013:252). Duner's overall conclusion (2013:252) was that the roles of all professionals with regard to assessing needs and planning of care

should be clarified. With regard to the implementing strategies to improve care outcome (Mendes et al. 2014:323), the ANP should review practice on a critical level (Aitken et al. 2008:69) and introduce changes gradually (Davies 1993:663).

The APN providing parent counselling and information regarding SPD was not regarded as applicable to the role of the APN providing support to the family in Round 2, but in Round 3 the responses reached consensus (R 2=46.2% and R 3=66.7% with a mean of 56.4%). Comments in this regard are the following:

I would be concerned about the OT role versus APN role (round 2).

Role of the SI trained OT (round 2).

But not in such a way that the parents does not go to an OT because they feel that they received all the help they could get from the APN (round 2).

Only if suitable qualified (round 3).

Must be in consultation and accompanied with referral to SI OT (round 3).

Can give basic info regarding SPD and refer to SI trained OT (round 3).

Participants felt that the support to and training of parents regarding SPD should not be included in the support role of the APN (R 2=30.8% and R 3=40%). Motivated responses were:

Refer to a specialist (round 2).

Trained OT's function (round 2).

Only to be done by someone qualified in sensory processing disorder (round 3).

Within the scoping work of nursing practice and with referral to SI OT (round 3).

Refer to SI qualified OT (round 3).

I think it will be useful to share with the participants the specific academic knowledge the APN would have especially regarding SPD and SI treatment. Then to follow with what clinical skills and additional training the APN has in this regard. I do agree that the APN most probably see this patient in the community setting, but if her training is unclear, it is also difficult to comment on what her scope should be. I need more info on the APN training in this regard (round 3).

According to the participants, the interactions of providing counselling to the parents and information regarding SPD and providing support by training parents in this condition is not applicable to the clinical role of the APN in SPD. Some of the clinical competencies that the ANP has is to be an information manager and educator (Tornabeni & Miller 2008:610; Grindel 2005:209). The ANP's scientific knowledge and competencies are grounded in evidenced-based practice (Mendes et al., 2014:324) this include the gathering of 'researched-based' information that guide clinical practice (Tornabeni & Miller 2008:610; Lammon et al. 2010:259) and that will inform the APN to present supportive information regarding SPD.

Another clinical competency of the ANP is to provide counselling for the patient and family (Jones & Cheek 2003:124; Grindel 2005:209; O'Conner et al. 2008:351; Tornabeni & Miller 2008:610). It is also the responsibility of the ANP to be accurate and reliable (Lofmark et al. 2006:724) and to identify any limitations in their practice (Miles, Clutterbuck, Seito, Sebegu & Riley 2007:558). The ANP has the ability to inform her practice according to evidenced-based practice (Mendes et al. 2014:324) and by doing so, the psychiatric nurse practitioner will be able to provide counselling and support to the parents.

Theme D: Referral of a child with sensory processing disorder

The highest ranking statements was the need to refer the child to the occupational therapist for further treatment (R 2=100% and R 3=100%) and the APN to refer to an appropriate professional to treat the child and family (R 2=100% and R 3=100%). The APN facilitating communication between all professionals working with the child reached consensus (R 2=91.7% and R 3=100%). This suggests that the participants are in favour of the APN facilitating the process of communication between professionals working with the child.

The ANP's professional commitment makes him or her able to function as part of a healthcare team (Aitken et al. 2008:73; Mendes et al. 2014:324). It is important for the APN to be aware of the limitations of his/her practice (Miles et al. 2007:558) and to refer to other health professionals according to a needs assessment (Mantzoukas & Watkinson 2007:30; Pulcini, Jelic, Gul & Lake 2010:35). The APN should collaborate with the healthcare team (Mendes et al. 2014:324) by being an effective member (Aitken et al. 2008:69; Lammon et al. 2010:259) with regard to flexibility and having equal status with the other members of the health team (Vanaki & Memarian 2009:289). The ANP is also able to be an 'integrator and facilitator' for the health team as indicated by Davies (1993:631) and this can be achieved by effective communication and collaboration with other members (Grindel 2005:209; Tornabeni & Miller 2008:611; Courtenay et al. 2010:1052).

4. ETHICAL CONSIDERATIONS

The researcher gained ethical clearance from the Research Ethics Committee of the North-West University. Fair selection of the participants was established by the including inclusion and exclusion criteria that guided the selection process. An informed consent page was included and had to be agreed to before the participants could proceed to the online questionnaire of the first round of data gathering. The participants were given the right to privacy by giving them the opportunity to complete the online questionnaires anonymously and their personal information was blinded by the Monkey Survey program. All agreements with the participants were honoured by the researcher and the participants were made aware that they could withdraw from the study at any given time without consequences.

5. RIGOUR

Trustworthiness was promoted by following the constructs of Guba as referred to by Shenton (2004:64). By using these constructs, the researcher ensured that the aspects of truth value, applicability, consistency and neutrality was achieved by applying the following strategies:

Credibility: This was promoted by the fact that the researcher was part of the research and not apart from it. The measure of data saturation as previously discussed was also applied to promote the credibility of the results (Creswell 2014:189). The researcher's prolonged engagement with the data over rounds of data collection ensured that data saturation was feasible (Brink et al. 2012:172).

Transferability: This was ensured by keeping all the versions of the data in their original form and by providing thick descriptions of analysed data (Wagner et al. 2012:243). Brink *et al.* (2012:173) also refer to using the method of data saturation to support transferability.

Dependability: Stability of data over time (Brink et al. 2012:172) will be characterized by the fact that other researchers can repeat the study with the same participants and more or less obtain the same results. This is made possible since the researcher gave an exact description of how the data were collected, analysed and interpreted (Macleod 2008:93).

Confirmability: The data collected must support the findings, interpretations and recommendations. This can be achieved by using co-coders (Creswell 2014:202) during the different rounds of data collection. Clarification of the researcher's own bias was also effective. The researcher consulted with her supervisor on a regular basis and this ensured that peer review was established through ongoing auditing.

Validity was promoted by inviting experts in nursing to validate the questionnaires of round one and two before sending them to the participants. Validity was further established by the fact that the participants had the opportunity to re-evaluate their responses of the first round and to agree or disagree with

summarized statements and to motivate those answers. Furthermore, the findings of this study were compared to results of other studies as part of a literature integration. The researcher applied scientific integrity by not committing plagiarism and by documenting the findings in an accurate manner. This study will be presented for publication with the hope that it will evoke discussion among multi-disciplinary team members (Macleod 2008:93).

6. LIMITATIONS OF THE STUDY

The small sample size (n=18) and the fact that the majority of the health professionals who participated in the study was Occupational therapists (n=15) is a strong indicator that the results cannot be generalized to the rest of the healthcare professionals in South Africa. The return rate for Round 1 (n=18) amounted to 100% and according to Keeney *et al.* (2011:64), there are no set guidelines that apply to response rates for a Delphi study. The reason for the low response rate of 72% (13 responses) for Round 2 (n=18) and 55.6% (10 responses) for Round 3 (n=18) is not clear and the author can only conclude that the participants lost interest in the study or that they did not find the time to complete the questionnaire as taking part in the study was voluntary. The snowball technique did not prove to be an effective method for this study as only one potential participant responded that was not on the initial list of the researcher and that person did not agree to participate.

After data analysis Round 1, it was evident that the participants were not aware of what the professional practice of the APN entails. The researcher used a role description for the advanced psychiatric nurse provided by the American Nurses Association to guide the panel of healthcare experts into responding to the open-ended question of Round 1. The reason for including a description provided by an international body and not one locally is because at the time of reviewing literature on a role description for the advanced psychiatric nurse to include, none is provided by the South African Nursing Council (SANC) till date. However, SANC do acknowledge the advanced psychiatric nurse as an advanced nurse practitioner (ANP) and there is a generic competency framework available since May 2014. This framework currently guides the professional practice of the ANP and the researcher considered the fact that the participants would have been more descriptive in their responses if the competency framework was presented in the first round to guide them in providing their perceptions on the clinical role of the APN in SPD. It could be that the panel was of opinion that the role description provided for the APN in America was not applicable to the APN in South Africa. Therefore it is possible that they did not fully consider that the APN is able to assess, diagnose and treat mental health conditions.

7. CONCLUSIONS AND RECOMMENDATIONS

This study illuminated four main themes with reflective statements that are of importance to the clinical role of the APN in SPD. This panel of experts reported their perceptions on what they believe the clinical

role of the APN in SPD is. The main themes that were synthesized out of data gathered during round one were; specialized training of the APN in SPD, interventions by the APN in SPD, support of the family with regard to SPD, and referral of a child with SPD. With regard to the APN having specialized training in SPD the group believed that the APN needs additional training in recognising the signs and symptoms of SPD as early as possible. It is also included that specialized training will ensure that the APN understands SPD by being able to identify the basic components of SPD and by having this knowledge the APN will be able to identify children who are at risk for SPD. However, the experts concluded that skill of being experienced in the field of sensory development and assessment thereof is not to be included.

The second theme presented as the interventions by APN's in SPD revealed consensus and included the APN being able to alter handling and treatment of the child with SPD. This will then refer to minimizing emotional trauma of children when exposed to the hospital environment, adapting the environment that is within the control/abilities of the APN to support sensory organization and implementing sensory strategies in conjunction with the medical team. The panel did not agree on the statements of the APN being able to assess, diagnose and plan or provide treatment for children and their families when it involves SPD.

Participants agreed that the APN's role includes assisting the family to access comprehensive services that are available to them and to prepare the parents emotionally and physically for possible surgical interventions related to SPD. Assisting the family in carrying out prescribed sensory interventions and home programmes is included in support. Counselling and providing information regarding SPD to the family seemed to be in conflict with the role of the occupational therapist, as is the factor of supporting and training parents regarding SPD.

The strong agreement on the APN's need to refer the child with SPD could not be discarded. It was the opinion of the participants that the APN should refer the child to the occupational therapist for further management. This referral also includes appropriate professionals other than the OT and to facilitate communication between these professionals involved in working with the child.

Table 5 includes a summary of the themes and statements and consensus reached and relevant literature that supports the findings. Based on consensus and literature integration the researcher could make recommendations with regard to what the clinical role of the APN is in SPD.

Table 5 Summary of the themes and statements with literature integration and recommendations for the clinical role of the APN in SPD

Themes/Statements	Consensus Yes or No	Literature integration references	Recommendations of researcher in the case of non- consensus
Theme A: Specialised training of advanced psychiatric nurses in sensory processing disorder			
1) The APN must be able to identify the basic components of sensory processing disorder	Yes	Kranowitz (2005), Jones & Cheek (2003), Courtenay et al. (2010), Roberts-Davis & Read (2001), McElhinney (2010).	
2) It is vital for the APN to understand sensory processing disorder	Yes	Champagne & Stromberg (2004).	
3) The APN needs additional training to recognise the signs and symptoms of sensory processing disorder as early as possible	Yes	Kranowitz (2005)	
4) Sensory processing disorder is a specialised field and therefore additional training is required for APN's	Yes	Kranowitz (2005), Byrne (2009).	
5) The APN need to identify children who are at risk for sensory processing disorder	Yes	Roberts-Davis & Read (2001), Byrne (2009).	
6) The APN need to be experienced in the field of sensory development and	Yes	Roberts-Davis & Read (2001), Jones & Cheek (2003), Byrne (2009),	

Themes/Statements	Consensus Yes or No	Literature integration references	Recommendations of researcher in the case of non- consensus
assessment thereof		Courtenay et al. (2010), McElhinney (2010).	
Theme B: Interventions carried out by the APN with regard to sensory processing disorder			
7) If the APN understand sensory processing disorder he/she can alter the handling and treatment of the child	Yes	Kranowitz (2005), Lofmark et al. (2006).	
8) The role of the APN includes the assessment, nursing diagnosis and treatment of sensory processing disorder	No	Mullally (2001), Lofmark et al. (2006), Mantzoukas & Watkinson (2007), Aitken et al. (2008), Courtenay & Carey (2008), Jones et al. (2010)	On the hand of literature it is clear that the APN should be able to assess and diagnose SPD in order to develop a treatment plan.
9) The APN must help to minimise the emotional trauma of children when exposed to the hospital environment	Yes	Champagne & Stromberg (2004).	
10) The APN to implement sensory strategies in conjunction with the medical team	Yes	Aitken et al. (2008), Lammon et al. (2010), Hanrahan et al. (2011).	
11) The APN must provide a treatment programme to children and their families	No	Davies (1993), Mullally (2001), Grindel (2005), Coutenay & Carey (2008), O'Connor et al. (2008),	Literature support the role of the APN to provide treatment, thus this need to be included,

Themes/Statements	Consensus Yes or No	Literature integration references	Recommendations of researcher in the case of non- consensus
		Jones et al. (2010).	taking into consideration that in-depth training should be provided, and the different members of the multi-professional team should be sensitised to this role.
12) Adaptation of the environment that is within the control/abilities of the APN to support sensory organisation	Yes	Kranowitz (2005), Lofmark et al. (2006).	
Theme C: Adequate support to the family with regard to sensory processing disorder			
13) The APN needs to assist the family in receiving comprehensive services available to them.	Yes	Davies (1993), Aitken et al. (2008).	
14) The APN needs to adequately prepare the parents emotionally and physically with regard to possible surgical interventions	Yes	Withrow (2007), O'Connor et al. (2008).	
15) The APN must provide parent counselling and information regarding sensory processing disorder	No	Jones & Cheek (2003), Grindel (2005), Lofmark et al. (2006), O'Connor et al. (2008), Torbaneni & Miller (2008), Lammon et al. (2010), Mendes et al. (2014).	According to the literature the APN needs to provide counselling and information for SPD. Counselling and providing information is part of the current role of

Themes/Statements	Consensus Yes or No	Literature integration references	Recommendations of researcher in the case of non- consensus
			the APN, and members of the multi-professional team should thus be made aware of this role.
16) Assist the family in carrying out the prescribed sensory interventions and home programmes	Yes	Davies (1993), Aitken et al. (2008).	
17) The APN needs to support and train parents regarding sensory processing disorder	No	Davies (1993), Aitken et al. (2008).	Based on the relevant literature, the support and training of parents in SPD is to be part of the clinical role of APN. This aspect thus need further discussion among the members of the multi-professional team.
Theme D: Referral of a Child with sensory processing disorder			
18) The APN needs to refer the child to the occupational therapist for further management	Yes	Kranowitz (2005), Miles et al. (2007).	
19) The APN needs to refer to an appropriate professional to treat the child and family	Yes	Mantzoukas & Watkinson (2007), Pulcini et al. (2010).	
20) The APN could facilitate communication between all the professionals working	Yes	Davies (1993), Grindel (2005), Aitken et al. (2008), Tornabeni & Miller (2008), Courtenay et al. (2010),	

Themes/Statements	Consensus Yes or No	Literature integration references	Recommendations of researcher in the case of non- consensus
with the child		Mendes et al. (2014).	

When reflecting on the literature presented to support the study findings, it is clear that the APN should be capable of performing a clinical role in SPD that is based on advanced nursing competencies. The following table (Table 6) is a comparison between the findings of the study regarding the clinical role of the APN in SPD and the competencies presented by the South African Nursing Council as set aside in Domain 2 of the Generic Competency Framework (SANC 2014). From table 6 it is clear that the findings of the study can be embedded into the Generic Competency Framework as provided by SANC to currently regulate the advanced nursing practice of the APN.

Table 6 Comparison of the results of the study with Domain 2 of the Generic competency framework for the advanced practitioner nurse as provided by SANC (2014).

Generic Competency Framework-SANC Domain 2: Care and provision and management Subdomain/Core competency:	A description of the clinical role of the advanced psychiatric nurse in sensory processing disorder based on the findings of this study according to the themes and reflective statements Theme A: Specialized training of the APN in SPD Theme B: Interventions by the APN for SPD Theme C: Adequate support of the family with regard to SPD Theme D: Referral of a child with SPD S = Statements
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2.1 Health Promotion Health promotion is aimed at the assessment of educational needs specific to the area of speciality that includes the planning, development and implementing of needs-based programmes to promote well-being. Follow-up systems should be developed to ensure that healthcare users receive the appropriate services.	Theme C S15: The APN must provide parent counselling and information regarding sensory processing disorders. S17: The APN needs to support and train parents regarding sensory processing disorders.
2.2 Assessment This includes a systematic Health and Nursing assessment of both objective and subjective data specific to the speciality practice area. The ordering and interpretation of diagnostic tests according to scope of practice for advanced nursing practice to formulate a nursing diagnosis that will guide the care plan. The information gathered should be documented and shared in a timely manner in line with Nursing Practice Standards and institutional policies.	Theme A S1: The APN must be able to identify the basic components of SPD. S2: It is vital for the APN to understand SPD. S5: The APN needs to identify children who are at risk for SPD. S6: The APN needs to be experienced in the field of sensory development and the assessment thereof. Theme B S8: The role of the APN includes the assessment, nursing diagnosis and treatment of SPD. The participants strongly disagreed with this statement but need to be included in the clinical role of the advanced nurse practitioner (Mullally 2001; Roberts-Davis 2001; Lofmark et al. 2006; Mantzoukas & Watkinson 2007; Aitken et al. 2008; Courtenay & Carey 2008; Jones et al. 2010; McElhinney 2010).
2.3 Planning The formulation of a comprehensive care plan that is specific to the individual by applying critical	Theme B S7: If the APN understands SPD he/she can alter handling and treatment

thinking and reasoning skills that are grounded in advanced nursing knowledge, which include other disciplines. Collaborating with the health team when setting priorities and when revising the care plan. Again, documentation of the process of planning for healthcare is of key importance.	S8: The role of the APN includes the assessment, nursing diagnosis and treatment of SPD. The participants strongly disagreed with this statement but should be included in the clinical role of the advanced nurse practitioner (Mullally 2001; Roberts-Davis 2001; Lofmark et al. 2006; Mantzoukas & Watkinson 2007; Aitken et al. 2008; Courtenay & Carey 2008; Jones et al. 2010; McElhinney 2010). S11: The APN must provide a treatment programme to children and their families. Treatment of SPD is seen by the experts as the role of the occupational therapist trained in sensory integration, however, the function of planning and providing treatment is included in the practice of advanced nursing (Davies 1993; Mullally 2001; Grindel 2005; O'Connor et al. 2008; Courtenay & Carey 2008; Jones et al. 2010).
2.4 Implementation Implementing advanced procedures, treatments and interventions based on the care plan and best practice standards and documenting these interventions in a timely manner.	Theme B S7: If the APN understands SPD he/she can alter the handling and treatment of the child. S9: The APN must help to minimize the emotional trauma of children when exposed to the hospital. S10: The APN to implement sensory strategies in conjunction with the medical team. S12: Adaptation of the environment that is within the control/abilities of the APN to support sensory organization. Theme C S13: The APN needs to assist the family in receiving comprehensive services available to them. S14: The APN needs to adequately prepare the

	parents emotionally and physically with regard to possible surgical interventions. S15: APN must also provide parent counselling and information regarding SPD. Although it is the perception of the participants that this function is not to be included, nursing literature do see this as part of the role (Jones & Cheek 2003; Grindel 2005; Lofmark et al. 2006; O'Connor et al. 2008; Torbaneni & Miller 2008; Mendes et al. 2014). S16: Assist the family in carrying out the prescribed sensory interventions and home programmes. S17: The APN needs to support and train parents regarding SPD. This competency not part of the APN's clinical role according to the participants, but nursing literature includes this aspect (Davies 1993; Aitken et al. 2008). Theme D S18: The APN needs to refer the child to the occupational therapist for further management. S19: The APN needs to refer to an appropriate professional to treat the child and family. S20: The APN could facilitate communication between all the professionals working with the child.
2.5 Evaluation Monitoring and documenting progress of expected outcomes by evaluating them in collaboration with the healthcare user, families or caregivers and the health team and then using the evaluation data to alter the care plan if needed. If there is a gap identified in healthcare provided by other team members, support should be offered to those	Theme D S20: The APN could facilitate communication between all the professionals working with the child.

members.	
2.6 Therapeutic Communication and Relationships Therapeutic relationships to be initiated and developed until necessary to terminate by using advanced communication and interpersonal skills. Keeping relationship boundaries with the healthcare user in place by being respectful and unbiased. Provide clear, consistent and accurate information by using communication skills. Facilitating access to information and referring to most appropriate person if needed. Maintain open communication with the healthcare team by sharing information regarding the views of the healthcare user and their family in a confidential manner.	Theme B S9: The APN must help to minimize the emotional trauma of children when exposed to the hospital. S12: Adaptation of the environment that is within the control/abilities of the APN to support sensory organization. Theme C S14: The APN needs to adequately prepare the parents emotionally and physically with regard to possible surgical interventions. S15: APN must also provide parent counselling and information regarding SPD, although it is the perception of the participants that this function is not to be included, nursing literature do see this as part of the role (Jones & Cheek 2003; Grindel 2005; Lofmark et al. 2006; O'Connor et al. 2008; Torbaneni & Miller 2008; Lammon et al. 2010; Mendes et al. 2014). S17: The APN needs to support and train parents regarding SPD. This competency is not seen as part of the APN's clinical role by the participants, however nursing literature refer to the ANP as being an information manager and educator (Torbaneni & Miller 2008:610; Grindel 2005:209). Theme D S18: The APN needs to refer the child to the occupational therapist for further management. S19: The APN needs to refer to an appropriate professional to treat the child and family

	S20: The APN could facilitate communication between all the professionals working with the child.
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8. RECOMMENDATIONS

Supported by the findings of this study, the following recommendations seem appropriate to nursing practice, research and education.

8.1 Nursing practice

The clinical role of the advanced psychiatric nurse in sensory processing disorder is still a grey area when a role description is taken into consideration. The consensus reached in this study on specific competencies does reflect on the clinical role description for advanced nursing practice in SPD.

Therefore, the APN can start to define professional practice boundaries by integrating the statements as agreed on and begin by attending an advanced training course in SPD, which will empower the APN to:

Identify basic components of SPD

Understand SPD

Recognize signs and symptoms of SPD as early as possible

Identify children who are at risk for SPD

Alter handling and treatment of the child with SPD

Minimize emotional trauma of the child when exposed to the hospital environment

Implement sensory strategies in conjunction with the medical team

Adapt the environment that is within control/abilities to support sensory integration

Assist the family in receiving comprehensive services available to them

Prepare parents emotionally and physically for possible surgical interventions

Assist the family in carrying out prescribed sensory interventions and home programmes

Refer the child to an occupational therapist qualified in Sensory Integration

Refer the child to an appropriate health professional as needed

Facilitate communication between all health professionals working with the child

Advanced psychiatric nurses with specialized training in SPD can act as supervisors or consultants to other nurse practitioners in this regard.

In-service training workshops can be conducted by the specially trained APN to the nursing personnel of hospitals and clinics to inform them on SPD and the management of this condition within the hospital and primary healthcare environment.

8.2 Nursing research

Future research on refining the clinical role of the advanced psychiatric nurse in sensory processing is needed. Research can be done with advanced psychiatric nurses in private practice to explore their current knowledge about SPD and their need for advanced training in this field of expertise.

8.3 Nursing education

This study recommends the development of an advanced training programme in sensory processing disorder and the management thereof for advanced psychiatric nurses. Advanced psychiatric nurses are trained in childhood illnesses regarding mental health and rely on this knowledge base to assess, diagnose and treat psychiatric conditions. Although SPD is not included in the DSM V, it is suggested that theoretical information on SPD and the treatment thereof is included in the advanced psychiatric nursing curricula.

9. CONCLUSION

The results of the study revealed that the health professionals who are experts in sensory integration disorder hold the belief that the advanced psychiatric nurse must receive advanced/specialized training to render mental healthcare to the child with SPD. The clinical role of the APN with advanced training in SPD entails that he/she posit an understanding of this condition with regard to the basic concepts thereof. The role further prescribe the identification of signs and symptoms of SPD as early as possible and if needed, the referral of the child to the most appropriate health professional. Adequate support to the family will also be a possibility, meaning the APN can assist the family in receiving comprehensive services, supporting them emotionally and physically for surgical interventions and assisting them with prescribed home programmes.

The APN being competent to assess, diagnose and treat SPD and to counsel the parents regarding this condition was not favoured by the participants. The reason being that they view these aspects as part of the role of the occupational therapist trained in sensory integration. However, nursing literature reveals that the competency of assessment, diagnosis and planning a treatment plan that includes counselling and providing health education is at the core of being able to practise nursing at an advanced level. As SPD is not included in nursing curricula, there is a need for the APN to take the responsibility to further his/her professional practice by committing to further education.

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Author's contributions

M Lang conducted the research and wrote the manuscript based on a dissertation for a master's degree in psychiatric nursing science. E du Plessis acted as the supervisor.

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CHAPTER 3 CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS OF THE STUDY

3.1 Introduction

The final chapter of the study discusses the conclusions, limitations and recommendations. The conclusions provide a support base for reaching the purpose of the study. The recommendations are written to contribute to the practice, education and research of nursing. Limitations can be considered by researchers in future studies.

First, the conclusions were derived from integrating literature with the qualitative and quantitative results. Text references are included for the integration of literature with the principle themes and to support statements for each theme where needed. The authors that are cited in the literature integration received full recognition.

Second, the recommendations are discussed under the headings of nursing practice, nursing education and nursing research.

Lastly, the limitations of the study are considered together with the challenges that the researcher encountered while conducting the research. An evaluation of the study follows with a conclusion to end this chapter.

3.2 Study Conclusions

The discussion of the results of the study makes it evident that the purpose of the study has been reached. Conclusions could be formulated through taking the following information into account:

- Literature on sensory processing disorder and on the role clarification of the APN
- Conclusions from data generated from Rounds 1, 2 and 3 of the Delphi technique
- Synthesis of the empirical results and literature integration (Rounds 2 and 3)

3.2.1 Conclusions from literature

Literature regarding sensory processing disorder and the clinical role of the advanced psychiatric nurse (APN) in sensory processing disorder (SPD) was searched with different keywords as provided in section 1.11.1. The literature search was commenced at the beginning

of the study to provide a background with regard to SPD and to identify the need for role clarification of the APN in SPD. In the literature review conducted in Chapter 1 the literature was repeated for the literature integration to support the themes and statements for Rounds 2 and 3. The conclusions stressed in the literature validate the conclusions drawn from the findings of the study with regarding to the clinical role of the APN in SPD.

3.2.1.1 Conclusions regarding sensory processing disorder and the role of the APN

Sensory processing disorder (SPD) is a neurological condition that affects the process of how the brain interprets information generated by the senses of the human body (Kranowitz, 2005:9). These senses include the visual, auditory, olfactory, taste, tactile, vestibular, and proprioceptive senses. A child can have an inability to process simultaneous information as received (Ayers, 2005:3). This inability can lead to children presenting with a clinical picture of being over-stimulated or under-responsive to sensory input (Byrne, 2009:316). If this condition is left untreated it can negatively affect how a child develops psychologically and how the child matures, behaves, learns, communicates, plays and relates to other people. In the long run this will ultimately result in poor personal relationships (Kranowitz, 2006:7).

The diagnosis of SPD is mainly reserved for the study field of occupational therapy and is also a specialization field at post-graduate level for health professionals. Most of the literature found stresses the importance of following a multi-disciplinary approach when treating an individual with SPD (Reebye & Stalker, 2007:194; Bullen, 2013:3; Allington-Smith, 2006:131). Currently, SPD is not included in formal nursing education and this can be seen as a “lost opportunity in diagnosis, treatment and research (Byrne, 2009:314).” As primary healthcare clinics, driven and managed by registered nurses, are the main point of entry into the healthcare system for the majority of the population in South Africa (Xaba *et al.*, 2012:2), the conclusion can be drawn that children with possible signs and symptoms of SPD are receiving healthcare from these nursing staff. Therefore, if the APN working in the community healthcare setting is not trained in SPD and its assessment, the condition will not be diagnosed and treated.

The clinical role of advanced nurses is grounded in advanced practices and applying new functions and designations (Mendes *et al.*, 2014:318) Therefore, the APN should be competent to perform advanced psychiatric nursing care applicable to all mental health conditions and disorders, including SPD. There is a concern that other members of the multi-disciplinary team do not have a clear understanding of the clinical role of the specialist nurse (Kilpatrick *et al.*, 2013:1525) as advanced nursing is a relatively new focus area in the South African nursing context (Temani *et al.*, 2014:1). Clarifying the clinical role of the APN by taking the perceptions

of all healthcare professionals qualified in SPD into consideration can be a step closer to introducing the academic/practice partnership role of the APN as described by Moore (2013:265).

3.2.1.2 Conclusions regarding role theory and role clarification of the APN

Role theory can be identified as the cornerstone in the process of clarifying and describing the role of the APN. The reason is that role theory is a dramaturgical metaphor (Solomon *et al.*, 1985:102) that implies that you play a certain role according to the context. Masango-Mtetwa (2002:97) refers to role theory as a “collection of concepts” that predicts how a role player will operate in a given situation. She also compiled a theoretical framework to support her research of role clarification, which included the role theory concepts of status, role and role performance. The APN is associated with the status of having expert knowledge, advanced decision-making skills and clinical competencies (Fung *et al.*, 2014:699; Puskar, 1996:2). As the role is a “cluster of social cues that guide and direct an individual’s behaviour in a given setting” (Solomon *et al.*, 1985:102), the conclusion is that the clinical role of the APN in SPD will be guided by having expert knowledge, advanced decision-making skills and clinical competencies. Role performance is embedded in being able to perform behavioural competencies specific to a situation (Masango-Mtetwa, 2002:100) and for the APN this entails being competent in the assessment, diagnosis and treatment of SPD.

The development and clarification of the role of the APN is a historical process that was pioneered by Hildegard E. Peplau of the United States in the 1960’s (Driscoll *et al.*, 2005:141). Role clarification is the process of mastering knowledge or specific information for a specific role, followed by setting boundaries that are specific and clear for the execution of that role (Meleis, 2010:40). Advanced nursing practice is an ‘umbrella term’ (Broom *et al.*, 2008:131) used by the nursing profession to differentiate between basic nurses and those trained to be more advanced. The APN is functioning on a higher level therefore needs a clear understanding of what practice entails (Lowe *et al.*, 2011:679) and the conclusion is that there is currently no specific role clarification for the APN in South Africa that can guide their specific practice. To date, the South African Nursing Council only provides a generic competency framework (SANC, 2014) for the advanced nurse practitioner (ANP) that directs practice for them. This Generic Competency Framework (SANC, 2014) was employed as a support base to describe the clinical role of the APN in SPD.

3.2.2 Conclusions from Data Round One: Qualitative Data

Drawing conclusions from the qualitative data of the first round was possible after data analysis. This supported the research plan to reach the purpose of the study, namely to explore and describe the perceptions of healthcare professionals with regard to the clinical role of the APN in SPD.

The majority of the participants (n=15) that took part in the study were occupational therapists qualified in sensory integration (SI). The remaining three participants represented the nursing, physiotherapy and educational psychology professions. The conclusion is therefore that the profession that classified themselves as experts in SPD is mostly the occupational therapists with advanced training in SI. Therefore, the perceptions gathered from the occupational therapists are highly valued, as this is the profession that is most involved with the assessment, diagnosis and treatment of SPD.

The open-ended question prompted the participants (n=18) to provide a clinical role description of the APN in SPD. A standard definition derived from the American Nurses Association (ANA, 2012) was included to support the participants with a framework in providing a role description. Although this information was included, there were some participants who responded that they have no insight into the role of the APN. As the participants who took part in the study were healthcare professionals in South Africa, the fact that they could not provide a role description show that they do not acknowledge the role description of the ANA and would have had more faith in a role description from the South African Nursing Council (SANC).

As yet, SANC (May 2014) only provides general guidelines for the advanced nurse practitioner (ANP) in the form of a generic competency framework and this is applicable to all advanced nurse practitioners. It is not specific to an advanced psychiatric nurse practitioner. Therefore, the researcher thought it best to include a professional role description from an association that guides advanced nursing practice in South Africa.

However, the participants reported enough qualitative data to analyse, which resulted in the generation of four principle themes with 5/6 statements descriptive of those themes. The main concern of the participants was that the APN must receive additional training in sensory integration therapy, which addresses SPD. It was therefore the conclusion that if the APN receives additional training in SPD, he or she will be able to understand SPD and identify the basic concepts of SPD.

3.2.3 Conclusions derived from data round two and three: and synthesis of literature and empirical results including the qualitative and quantitative results

The conclusions from Rounds 2 and 3 include the process of literature integration and synthesis of the literature with the empirical results. These conclusions are mainly embedded in role clarification theory, literature on APN and SPD, and reaching consensus among the participants.

The statement questionnaires sent for Rounds 2 and 3 presented quantitative and qualitative data that were useful to the focus of reaching consensus. The APN having specialized training in SPD was important to the panel of experts and some of them were not in favour of the APN performing certain interventions that overlapped with what they perceived to be the role of the OT qualified in SI. This protection of role boundaries (Casher *et al.*, 2012:5) can be linked to different factors, ranging from not having insight in the APN practice and role to not being willing to engage in the process of inter-professional collaboration. Consensus was reached on 16 of the 20 statements. For those statements on which no consensus was reached, the participants had the opinion that the APN should not perform that role even if they have additional training. Despite the disagreement of participants on those statements, the researcher included those role competencies in the role description and supported the decision with literature integration (see Table 3). This aspect could be the result of the participants not having insight into what advanced nursing practice entails.

When formulating recommendations on how to integrate the clinical role of the APN in SPD with the main requirement of having additional training, the perceptions of the participants had to be considered because they are experts in SPD. The belief of the participants centres mostly on the APN not having additional training in SPD. This is seen as a necessity for the APN to be able to engage in a clinical role regarding SPD.

The generic competency framework (SANC, 2014) proved to be an effective tool in providing guidance and support to the findings of the study. By comparing the role description of the APN in this study with the framework, the researcher was able to include specific clinical competencies that were not seen as part of the role of the APN with regard to rendering healthcare to children with SPD.

The conclusions specific to each theme and statements are discussed by drawing on the results of Round 1, 2 and 3.

3.2.3.1 Conclusions regarding the specialized training of the APN in sensory processing disorder

As explained earlier, the panel of experts clearly stated that the APN should undertake special training to render healthcare to a child with SPD. It is therefore the conclusion that the APN with specialized training in sensory integration and specific SPD should include the following in his/her clinical role:

- Identify the basic components of SPD
- Have an understanding of SPD
- Early recognition of signs and symptoms of SPD
- Identify children who is at high risk for developing SPD
- Display experience in sensory development and assessment thereof

According to Byrne (2009:318), the psychiatric/mental health nurse practitioner will provide healthcare to children with SPD, which stresses the importance of the APN being able to diagnose this condition by recognizing the signs and symptoms and then compiling an appropriate treatment plan. Byrne (2009:318) further states that the APN must 'learn' about SPD by seeking formal and informal education, including programmes based in 'allied disciplines'.

3.2.3.2 Conclusions regarding the interventions carried out by the APN with regard to sensory processing disorder

The clinical role of the APN in SPD should include interventions that are specific to this disorder. Based on the synthesis of the study findings and integration of literature, the conclusion is that the following interventions by the APN with advanced training in SPD should be included:

- Alter the handling of the child with SPD
- Assess, formulate a nursing diagnosis and treat SPD
- Minimize the emotional trauma of children when exposed to the hospital environment
- Implement sensory strategies in conjunction with the medical team

- Provide a treatment programme for children and their families
- Adaptation of the environment that is within the control/abilities of the APN

Although the participants did not agree on including the assessment, diagnosis and treatment of SPD in the clinical role of the APN regarding this condition, the researcher included this process in the role description due to the fact that the process of assessment, formulating a nursing diagnosis and developing a treatment plan is integral steps that are grounded in the scientific nursing process (Lofmark *et al.*, 2006:724; Aitken *et al.*, 2008:73; Champagne & Stromberg, 2004:5; Roberts-Davis & Read, 2001:40; Jones *et al.*, 2010:805; Courtenay & Carey, 2008:404; Mullally, 2001:337; O'Conner *et al.*, 2008:351).

3.2.3.3 Conclusions regarding adequate support to the family with regard to sensory processing disorder

As the child with SPD is part of the family system, therefore a systems approach (Withrow, 2007:5) should be adopted by the APN in her clinical role of providing support to the family. Adequate support for the family of the child with SPD should include:

- Helping the family to access those comprehensive services available to them
- Adequately preparing the parents emotionally and physically with regard to possible surgical interventions
- Providing parent counselling and information regarding SPD
- Assisting the family in carrying out the prescribed sensory interventions and home programmes
- Supporting and training of parents regarding SPD

According to the comments by the respondents, they are concerned with the APN counselling and providing information to the family and the APN providing support by training parents with regard to SPD. They see these functions as part of the role of the SI OT. As previously discussed, the APN's systematic steps of the nursing process and according to literature counselling (Jones & Cheek, 2003:124; Grindel, 2005:209; O'Connor *et al.*, 2008:351) is an important function of the APN. Intertwined in counselling is the competency of the APN to be an

information manager and to educate the healthcare user/s (Tornabeni & Miller, 2008:610; Grindel, 2005:209).

3.2.3.4 Conclusions regarding the referral of a child with sensory processing disorder

Consensus by the participants was established for all three statements regarding the referral of a child with SPD. The conclusion is therefore to include the following aspects in the clinical role of the APN in SPD:

- Referral of the child to an occupational therapist for further management
- Referral of the child to an appropriate professional to treat the child and the family
- Facilitation of communication between all professionals working with the child

It is important for the APN to be aware of the limitations in his/her practice (Miles *et al.*, 2007:558) and to refer when needed (Mantzoukas & Watkinson, 2007:30; Pulcini *et al.*, 2010:35). The APN should also be part of the healthcare team (Aitken *et al.*, 2008:73) by collaborating with other healthcare members (Mendes *et al.*, 2014:324) and acting as a facilitator in the team (Davies, 1993:631) by using effective communication (Grindel, 2005:209; Tornabeni & Miller, 2008:611; Courtenay *et al.*, 2010:1052).

3.2.4 Overall conclusion

Based on consensus reached by the participants with regard to what to include in the clinical role of the APN in SPD, it can be concluded that the APN needs additional training in SPD. The APN with specialized training in SPD should also be competent in identifying the basic components of SPD and the signs and symptoms of this condition. Furthermore, the APN should be experienced in sensory development and its assessment. Conclusions with regard to interventions by the APN mainly entail altering handling of the child with SPD and to minimize the emotional trauma of a child when exposed to the hospital environment. This include adapting the environment as far as it is within the control/ability of the APN to support sensory organization. Despite the respondents' belief that assessment, diagnosis and treatment should not be included in the APN's clinical role in SPD, the researcher included these steps in the clinical role because it forms part of the scientific nursing process and this is supported by relevant nursing literature. The APN adequately supporting the family includes helping the family to accessing comprehensive services, offering counselling and information and training regarding SPD and assisting the family to carry out sensory interventions and home programmes. As the APN is part of the healthcare team, the need for referral to the most

appropriate professional is important. Collaboration with and facilitating communication among health professionals working with the child could also be part of the clinical role in SPD.

Table 3.1 offers a role description that reflect on the themes and statements (the literature integration was excluded) of the clinical role of the APN in SPD as embedded in the generic competency framework of the advanced nurse practitioner as regulated by SANC.

Table 3-1 Summary of the clinical role description of the APN in SPD

Care provision and management of the child with SPD by the APN	
Domain / Core competencies:	
Health promotion	• The APN must provide parent counselling and information regarding sensory processing disorder • The APN needs to support and train parents regarding sensory processing disorders
Assessment This includes a systematic health and nursing assessment of both objective and subjective data specific to the speciality practice area. It also includes ordering and interpretation of diagnostic tests according to scope of practice for advanced nursing practice to formulate a nursing diagnosis that will guide the care plan. The information gathered should be documented and shared in a timely manner in line with nursing practice standards and institutional policies.	• The APN must be able to identify the basic components of SPD. • It is vital for the APN to understand SPD. • The APN needs to identify children who are at risk for SPD. • The APN needs to be experienced in the field of sensory development and its assessment.
Planning The formulation of a comprehensive care plan that is specific to the individual by applying critical thinking	• If the APN understands SPD, he/she can alter handling and treatment • The APN must provide a treatment programme to children and their families.

Care provision and management of the child with SPD by the APN	
and reasoning skills that are grounded in advanced nursing knowledge, which includes other disciplines. Collaborating with the health team when setting priorities and when revising the care plan. Documentation of the process of planning for healthcare is of key importance.	
Implementation Implementing advanced procedures, treatments and interventions based on the care plan and best practice standards and documenting these interventions in a timely manner.	• The APN must help to minimize the emotional trauma of children when exposed to the hospital. • The APN to implement sensory strategies in conjunction with the medical team. • Adaptation of the environment that is within the control/ability of the APN to support sensory organization. • The APN needs to assist the family in accessing comprehensive services available to them. • The APN needs to adequately prepare the parents emotionally and physically with regard to possible surgical interventions. • APN must provide parent counselling and information regarding SPD. • The APN needs to assist the family in carrying out the prescribed sensory interventions and home programmes. • The APN needs to support and train parents regarding SPD. • The APN needs to refer the child to the occupational therapist for further management. • The APN needs to refer the patient to an appropriate

Care provision and management of the child with SPD by the APN	
	professional to treat the child and family. • The APN could facilitate communication between all the professionals working with the child.
Evaluation Monitoring and documenting progress of expected outcomes by evaluating them in collaboration with the healthcare user, families or caregivers and the health team, and then using the evaluation data to alter the care plan if needed. If a gap is identified in the healthcare provided by other team members, support should be offered to those members.	• The APN could facilitate communication between all the professionals working with the child.
Therapeutic Communication and Relationships Therapeutic relationships should be initiated and developed until they should be terminated by using advanced communication and interpersonal skills. Keeping relationship boundaries with the healthcare user in place by being respectful and unbiased. Providing clear, consistent and accurate information by using communication skills. Facilitating access to information and referring to most appropriate person if needed. Maintaining open communication with the healthcare team by sharing information regarding the views of the healthcare user and their family in a confidential manner.	• The APN must help to minimize the emotional trauma of children when exposed to the hospital. • Adaptation of the environment that is within the control/abilities of the APN to support sensory organization. • The APN needs to adequately prepare the parents emotionally and physically with regard to possible surgical interventions. • APN must also provide parent counselling and information regarding SPD. • The APN needs to support and train parents regarding SPD. • The APN needs to refer the child to the occupational therapist for further management. • The APN needs to refer to an appropriate professional to treat the child and family

Care provision and management of the child with SPD by the APN	
	The APN could facilitate communication between all the professionals working with the child.

3.3 Recommendations

In the process of formulating recommendations, consensus among participants was taken into consideration as well as the conclusions build around the themes and statements that were identified during the first round of the study. Relevant literature was also taken into account and integrated to support the recommendations. Recommendations are developed for nursing practice, nursing education and nursing research.

3.3.1 Recommendations for advanced psychiatric nursing practice

The clinical role of the advanced psychiatric nurse in sensory processing disorder is still a grey area when it comes to a role description. The consensus reached in this study on specific competencies does reflect on the clinical role description for advanced nursing practice in SPD. Therefore, the APN can start to define professional practice boundaries by integrating the statements as agreed on and by attending an advanced training course in SPD which will empower the APN to:

- Identify basic components of SPD
- Understand SPD
- Recognize signs and symptoms of SPD as early as possible
- Identify children who are at risk for SPD
- Alter handling and treatment of the child with SPD
- Minimize emotional trauma of the child when exposed to the hospital environment
- Implement sensory strategies in conjunction with the medical team
- Adapt the environment that is within control/abilities to support sensory integration
- Assist the family in accessing comprehensive services available to them

- Prepare parents emotionally and physically for possible surgical interventions
- Assist the family in carrying out prescribed sensory interventions and home programmes
- Refer the child to an occupational therapist qualified in sensory integration
- Refer the child to an appropriate health professional as needed
- Facilitate communication between all health professionals working with the child

Advanced psychiatric nurses with specialized training in SPD can act as supervisors or consultants to other nurse practitioners in this regard.

The specially trained APN can offer in-service training workshops to the nursing personnel of hospitals and clinics to inform them on SPD and the management of this condition within the hospital environment.

3.3.2 Recommendations for nursing research

Future research on refining the clinical role of the advanced psychiatric nurse in sensory processing is needed. Research can be done with advanced psychiatric nurses in private practice to explore their current knowledge about SPD and their need to attend advanced training in this field of expertise.

3.3.3 Recommendations for nursing education

The study recommends the development of an advanced training programme in sensory processing disorder and its management for advanced psychiatric nurses. Advanced psychiatric nurses are trained in childhood illnesses regarding mental health and rely on this knowledge base to assess, diagnose and treat psychiatric conditions. Although SPD is not included in the DSM V, it is suggested that theoretical information on SPD and its treatment is included in the advanced psychiatric nursing curricula.

3.4 Limitations of the Study

The small sample size (n=18) and the fact that the majority of the health professionals who participated in the study were occupational therapists (n=15) is a strong indicator that the results cannot be generalized to the rest of the healthcare professionals in South Africa. The return rate of 18 responses for Round 1 (n=18) amounts to 100% and according to Keeney *et al.* (2011:64),

there are no set guidelines that apply to response rates for a Delphi study. The reasons for the low response rate of 72% (13 responses) for Round 2 (n=18) and 55.6% (10 responses) for Round 3 (n=18) is not clear, and the author can only conclude that the participants lost interest in the study or that they did not find the time to complete the questionnaire as taking part in the study was voluntary.

After data analysis Round 1, it was evident that the participants were not aware of what the professional practice of the APN entails. The researcher used a role description for the advanced psychiatric nurse provided by the American Nurses Association to guide the panel of healthcare experts to respond to the open-ended question of Round 1. The reason for including a description provided by an international body and not a local one is that at the time of reviewing literature on a role description for the advanced psychiatric nurse to include, none had been provided by the South African Nursing Council (SANC). However, SANC does acknowledge the advanced psychiatric nurse as an advanced nurse practitioner (ANP) and there has been a generic competency framework available since May 2014. This framework currently guides the professional practice of the ANP and the researcher considered the fact that the participants would have been more descriptive in their responses if the competency framework was presented in the first round to guide them in providing their perceptions on the clinical role of the APN in SPD. It could be that the panel was of opinion that the role description provided for the APN in America was not applicable to the APN in South Africa. Perhaps they did not take into consideration that the APN is able to assess, diagnose and treat mental health conditions.

3.5 Challenges Experienced and Practical Recommendations

3.5.1 Challenges experienced by the researcher

- The explorative, descriptive design using the Delphi-technique that consisted of multiple rounds posed to be time consuming because the rounds were set 2-3 weeks apart. Analysing the data obtained in time for the next scheduled Round was also a challenge.
- The research study was also expensive because the researcher had to upgrade to the golden package of Survey Monkey to get access to the survey program that included the function 'Page logic,' which enables you to skip respondents from certain pages to specific destination pages further ahead in the survey.

- The researcher did not want to influence the participant's perceptions and therefore kept communication restricted to e-mailing. It is the opinion of the researcher that this aspect could have added to the participants not being committed to completing all three rounds of the survey.
- The analysis of the qualitative and quantitative data was a challenge for the researcher, but with the support and guidance of the supervisor, co-coder and statistician, meaningful findings and recommendations could be developed.

3.5.2 Practical recommendations from lessons learned from the research

- Ensure that there is enough time to complete all the rounds of the Delphi technique
- Encourage the participants to complete all the rounds by sending them frequent reminders to respond
- A more personal approach can be followed during the recruitment phase of the study. It can help the participants to commit if they know the face or voice of the researcher.

3.6 Personal Reflection of the Researcher

Completing my masters degree in psychiatric nursing is surely one of the biggest challenges that I have faced in my academic career. Not only did my research journey change the way I think about everything scientific, but also gave me the biggest respect for all researchers from around the world. Engaging in the research process is so much more than just being able to conduct a research plan set out on a piece of paper, it is also about being aware of how your own prejudice and bias as a researcher can influence this process.

I was so privileged to have a supervisor (Prof Emmerentia du Plessis) who guided me with her expert knowledge and research skills to conduct this study. As she is also an advanced psychiatric nurse practitioner, we connected so well on our level of interests and on a spiritual level.

Studying the literature and research regarding role clarification made me aware of how important it is to operate as a health professional within a specific role and that setting boundaries for each role as prescribed by a given situation will be an ongoing process as long as there is new health conditions that are being included in the diagnostic system. As sensory processing disorder is one of those new conditions in the field of nursing and it is treated mostly

by the profession of occupational therapy, conducting research in clarifying the role of the APN in SPD by taking the perceptions of other healthcare professionals into consideration, left me with an overall feeling of empowerment and satisfaction, for this can be a step closer to interdisciplinary collaboration and creating awareness on what the practice of advanced nursing entails.

The findings of the study made me realize that there is still much work to be done in promoting the clinical role of the APN and that the only way that nursing professionals can achieve this is by believing in themselves and their professional competencies. This also includes taking risks and stepping out of your comfort zone by presenting yourself as an effective and competent member of the healthcare team.

3.7 Evaluation and Conclusion

An overview of the study was provided in Chapter 1 by describing the background to the study that guided the researcher in formulating the research problem, research question and the purpose and objectives of the study. Discussion of the paradigmatic perspective included meta-theoretical assumptions, theoretical assumptions and methodological assumptions. Then the research design and method were described, which included the population, sample, setting, conducting a trail run, collection of data and data analysis. Measures to facilitate rigour were described together with the ethical considerations. Lastly, a literature review is included and the significance of the study and a chapter outline of the report.

Chapter 2 includes the manuscript “Sensory processing disorder: perceptions on the clinical role of the advanced psychiatric nurse”, which will be submitted to *Heath SA Gesondheid* as required by the instructions for the authors. In this section the results and findings of the three data gathering rounds are explained in full.

Chapter 3 focused on the discussion of the conclusions, limitations and recommendations of the research. It also offers a personal reflection on conducting the research. With regard to reaching the purpose and objectives of the study, the conclusion is that the objectives of exploring and describing the perceptions of health professionals on the clinical role of the APN in SPD and that a role description could be provided are met, since the results delivered meaningful information that could ultimately be used by the researcher to provide a role description.

The dissemination of the results will take place as described in Chapter 1 after the dissertation is successfully evaluated. The researcher will send the participants a copy of the article format

via e-mail with the intention to inform them of the end results of the study and to provide them with a role description of the clinical role of the APN in SPD.

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LIST OF APPENDICES

Appendix A: Ethical approval from the research committee at the North-West University (Potchefstroom)



NORTH-WEST UNIVERSITY
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Institutional Research Ethics Regulatory Committee

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2016/06/15

ETHICS APPROVAL CERTIFICATE OF STUDY

Based on approval by Health Research Ethics Committee (HREC) on 15/06/2016, the North-West University Institutional Research Ethics Regulatory Committee (NWU-IRERC) hereby approves your study as indicated below. This implies that the NWU-IRERC grants its permission that provided the special conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

Study title: Sensory processing disorder: Perceptions on the clinical role of the advanced psychiatric nurse.

Study Leader/Supervisor: Prof E du Plessis

Student: M Lang

Ethics number:

N W U - 0 0 0 0 6 - 1 6 - A 1

Institution Study Number Year Status
Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation

Application Type: Single Study

Commencement date: 2016-06-15

Risk: Minimal

Continuation of the study is dependent on receipt of the annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation up to a maximum period of three years.

Special conditions of the approval (if applicable):

- Translation of the informed consent document to the languages applicable to the study participants should be submitted to the HREC (if applicable).
- Any research at governmental or private institutions, permission must still be obtained from relevant authorities and provided to the HREC. Ethics approval is required BEFORE approval can be obtained from these authorities.

General conditions:

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, please note the following:

- The study leader (principle investigator) must report in the prescribed format to the NWU-IRERC via HREC:
 - annually (or as otherwise requested) on the monitoring of the study, and upon completion of the study
 - without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study.
- Annually a number of studies may be randomly selected for an external audit.
- The approval applies strictly to the proposal as stipulated in the application form. Would any changes to the proposal be deemed necessary during the course of the study, the study leader must apply for approval of these amendments at the HREC, prior to implementation. Would there be deviation from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited.
- The date of approval indicates the first date that the study may be started.
- In the interest of ethical responsibility the NWU-IRERC and HREC retains the right to:
 - request access to any information or data at any time during the course or after completion of the study;
 - to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process.
 - withdraw or postpone approval if:
 - any unethical principles or practices of the study are revealed or suspected,
 - it becomes apparent that any relevant information was withheld from the HREC or that information has been false or misrepresented,
 - the required amendments, annual (or otherwise stipulated) report and reporting of adverse events or incidents was not done in a timely manner and accurately,
 - new institutional rules, national legislation or international conventions deem it necessary.
- HREC can be contacted for further information or any report templates via Ethics-HRECApply@nwu.ac.za or 018 299 1200.

The IRERC would like to remain at your service as scientist and researcher, and wishes you well with your study. Please do not hesitate to contact the IRERC or HREC for any further enquiries or requests for assistance.

Yours sincerely

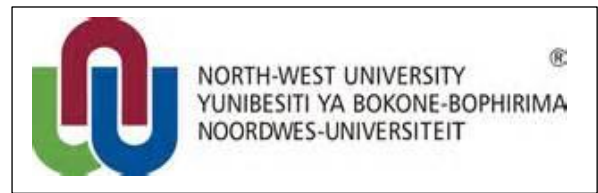
Prof LA
Du Plessis

Digitally signed by
Prof LA Du Plessis
Date: 2016.06.24
11:30:27 +02'00'

Prof Linda du Plessis

Chair NWU Institutional Research Ethics Regulatory Committee (IRERC)

Appendix B: The electronic advertisement



As a Healthcare Professional You Can Help Me To Clarify The Clinical Role Of The Advanced Psychiatric Nurse In South Africa Regarding Sensory Processing Disorder (SPD)

Currently there is a need to clarify the clinical role of the Advanced Psychiatric Nurse (APN) in South Africa regarding SPD. This research study is for health professionals in South Africa.

Research is always voluntary!

Would the study be a good fit for me?

This study might be a good fit for you if:

- You are a health professional registered with the HPCSA or SANC
- Have post-graduate qualifications in the field of providing Mental health care to patients
- You have at least three years post-graduate experience in providing health care to children with SPD

What would happen if I took part in the study?

If you decide to take part in the research study, you will:

- Receive a Survey Monkey link via e-mail containing detailed information regarding the nature of the study and what your role entails as a participant
- Three online questionnaires through Survey Monkey scheduled 2-3 weeks apart
- Questionnaires will take more or less 30 minutes to complete

There are no direct benefit included for you as a participant, but the following indirect benefits may apply:

- To improve the healthcare of the nursing profession on specialist level
- Better nursing health care to patients

To take part in this research study or for more information, please contact Madelein Lang at 0727077162 or e-mail me at empirestables@lantic.net

Appendix C: Information sheet (including informed consent)

The following information will be added to the introduction page on SurveyMonkey and will serve as the informed consent document.

Information Sheet

Title of the research project: Sensory Processing Disorder: Perceptions on the clinical role of the advanced psychiatric nurse

Principal investigator: Mrs. Madelein Lang

Address:

INSINQ research focus area. School of Nursing Science, NWU, Potchefstroom Campus, Private Bag X6001, Potchefstroom, 2520 (c/o Prof Emmerentia du Plessis)

Contact number: 0727077162

Introduction

I am Madelein Lang, a specialist nurse, currently working in private nursing practise in the field of mental health and rehabilitation. I am doing research on clarifying the clinical role of the Advanced Psychiatric Nurse (APN) in South Africa with regard to Sensory Processing Disorder (SPD). I will be providing you with information regarding this study and invite you to take part in this research. The decision of participating in the study is not immediate and you can talk to anyone of choice about this study. The consent form may include words or information that is unclear to you. You are free to ask me questions as we proceed with the information or during a later stage before you complete the electronic survey that will indicate your consent to participate in this study.

Purpose of the research

Sensory Processing Disorder (SPD) is a neurological condition involving the processing and regulation of sensory information. This condition is a reality in the daily lives of many children having to cope with it. Currently the primary health care clinics are the point of entry into the healthcare system for the majority of the population of South Africa. It is also likely that healthcare will be provided by primary care nurse specialists and advanced nurse practitioners who are already screening for developmental abnormalities in children and that they are able to diagnose, treat and refer for most of the disorders.

To date the diagnosis of SPD is not yet included in the DSM V and therefore theoretical literature are also not included in the educational training of nurse specialists and advanced nurse practitioners. The researcher being a master's student in psychiatric nursing, posit a keen interest in the condition of SPD in children and she holds the belief that the APN can make a contribution to the scientific knowledge base of SPD. However, before this can be the case the researcher identified the need to clarify the clinical role of the APN in South Africa regarding SPD by asking you to contribute to this role clarification by providing your professional opinion with regard to what you think this role is. In doing so a clarification of the clinical role of the APN in South Africa regarding SPD can be provided and that in return will guide the APN's professional standards and competencies as a specialist in psychiatric nursing care.

Type of research Intervention

Your participation in this study will include three separate rounds of data gathering using the software computer program of Survey monkey. It will involve you taking part in an online questionnaire where you will be given the opportunity to provide your professional opinion. After data analysis of the first round data, a second questionnaire will be mailed consisting out of statements that you can agree or disagree with and an option of motivating your answer. The data of the second round will then be analysed in order to compile a third questionnaire. The third round of data gathering will consist out of a summary of what the role clarification is and you will again have a choice to agree or disagree with an open space to motivate your answer. You can complete the questionnaire in your own time and personal setting. The time frame to complete each questionnaire would be more or less thirty 30 minutes and you will have 7 days to respond to Survey Monkey. After 7 days you will receive a one-off e-mail reminding you to respond.

Participant Selection

You have been invited to participate in this study because I am of opinion that your experience with regard to SPD can contribute to the research topic of clarifying the clinical role of the APN in South Africa regarding SPD.

Voluntary Participation

Participation in this research is voluntary and you have the free choice to take part in the study or not. You are also free to withdraw at any stage of the research or not to answer a question or statement provided in the questionnaires.

Procedures

I am asking you to help me clarify the clinical role of the APN in SPD. I am inviting you to participate in my research study. If you accept, you will be asked to complete an online questionnaire provided by Madelein Lang (researcher) and the questionnaire will be send back to Madelein Lang so that the data can be analysed for the further data gathering rounds.

If you do not want to answer any of the questions on the questionnaire you may leave them unanswered and move on to the next question or statement. The information that will be recorded will be anonymous and confidential and when analysing the data with co-coders, identifying data will be blinded by Survey Monkey. No one else, except Prof Emmerentia du Plessis and Madelein Lang, an independent co-coder and a statistician will have access to your anonymous questionnaires.

Duration

The research is scheduled to take place over a period of 8 months. The data gathering will consist out of three rounds scheduled 2-3 weeks apart and each round will consist out of you completing an online questionnaire that you can complete on any of your computer devices that is linked to your e-mail address within one week after date of receiving. A completion date and time will be provided by Survey monkey. For this study to be successful it is of utmost importance that you commit to completing all three rounds of data gathering.

Risks

It will be expected of you to share your professional opinion with regard to what the clinical role of the APN in South Africa should be in SPD. Some of the information that you wish to share can make you uncomfortable if answered sincerely. Thus the choice of providing an answer or deciding not to give an answer will be yours and you do not have to provide a reason for not completing a question.

Benefits

There will be no direct benefit for you participating in this study, but you helping to clarify the clinical role of the APN in South Africa regarding SPD can be helpful in the process of defining the clinical role of the APN with regard to SPD in the nursing profession.

Reimbursements

You will receive no incentive for taking part in the study.

Confidentiality

I will not share any questionnaire data with anyone outside the research team and I will secure my computer with a password only known by me. When sharing your questionnaire with a member of the research team for data analysis, the questionnaire will be given a number so that you will not be linked to the questionnaire. All hard copies of the study documentation will be kept safe at my office and locked up in a cupboard with a key, where I, Madelein Lang will be the safe keeper of that key. I will also be the only one to regulate access to the study documentation. The data will be stored for a period of 7 years, after which it will be destroyed.

Sharing of Results

All of the information that you provide us with during the study will not be shared with anyone outside the research team. The results of the study will be shared with you via e-mail so that you and other healthcare professionals can benefit from the research.

Right to Refuse or Withdraw

Taking part in this study will be voluntary and if you wish to withdraw at any stage of the process for whatever reason, you are free to do so without fear of being negatively affected as a healthcare professional.

Who to Contact

If there is still uncertainty or questions that need to be clarified, you may ask them now or at a later stage. If you want to enquire on more information, you may contact any of the following persons:

Madelein Lang

Researcher

Cell phone: 0727077162

E-mail: empirestables@lantic.net

Mrs Carolien van Zyl

Health Research Ethics Committee

Tel: 018 299 1206

E-mail: carolien.vanzyl@nwu.ac.za

Prof Emmerentia du Plessis

Supervisor

Tel: 018 299 1876

E-mail: Emmerentia.duplessis@nwu.ac.za

Declaration by participant

By completing the online questionnaire, I agree to take part in a research study entitled:

Sensory Processing Disorder: perceptions on the clinical role of the Advanced psychiatric nurse.

I declare that:

- I have read this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions telephonically or electronically and all my questions have been adequately answered.
- I understand that taking part in the study is **voluntary** and I have not been pressurised in any way.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the researcher feels it in my best interests, or if I do not follow the study plan, as agreed to.

Do you agree with the above terms? By clicking Yes, you consent that you are willing to participate in this study and you will gain access to the open-ended question for the first round. By clicking No, you will not gain access to the online open-ended question and you will be disqualified as a participant.

Appendix D: Confidentiality agreement for the co-coders, statistician and Mediators

Confidentiality agreement for research team, mediator and co-coder



NORTH-WEST UNIVERSITY
YUNIBESITHI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

CONFIDENTIALITY UNDERTAKING

entered into between:

I, the undersigned

Prof / Dr / Mr / Ms _____

Identity Number: _____

Address: _____

hereby undertake in favor of the **NORTH-WEST UNIVERSITY**, a public higher education institution established in terms of the Higher Education Act No. 101 of 1997

Address: Office of the Institutional Registrar, Building C1, 53 Borchard Street, Potchefstroom, 2520

(hereinafter the “NWU”)

1 Interpretation and definitions

1.1 In this undertaking, unless inconsistent with, or otherwise indicated by the context:

1.1.1 “Confidential Information” shall include all information that is confidential in its nature or marked as confidential and shall include any existing and new information obtained by me after the Commencement Date, including but not be limited in its interpretation to, research data, information concerning research participants, all secret knowledge, technical information and specifications, manufacturing techniques, designs, diagrams, instruction manuals, blueprints, electronic artwork, samples, devices, demonstrations, formulae, know-how, intellectual property, information concerning materials, marketing and business information generally, financial information that may include remuneration detail, pay slips, information relating to human capital and employment contract, employment conditions, ledgers, income and expenditures and other materials of whatever description in which the NWU has an interest in being kept confidential; and

1.1.2 “Commencement Date” means the date of signature of this undertaking by myself.

1.2 The headings of clauses are intended for convenience only and shall not affect the interpretation of this undertaking.

2 Preamble

2.1 In performing certain duties requested by the NWU, I will have access to certain Confidential Information provided by the NWU in order to perform the said duties and I agree that it must be kept confidential.

2.2 The NWU has agreed to disclose certain of this Confidential Information and other information to me subject to me agreeing to the terms of confidentiality set out herein.

3 Title to the Confidential Information

I hereby acknowledge that all right, title and interest in and to the Confidential Information vests in the NWU and that I will have no claim of any nature in and to the Confidential Information.

4 Period of confidentiality

The provisions of this undertaking shall begin on the Commencement Date and remain in force indefinitely.

5 Non-disclosure and undertakings

I undertake:

5.1 to maintain the confidentiality of any Confidential Information to which I shall be allowed access by the NWU, whether before or after the Commencement Date of this undertaking. I will not divulge or permit to be divulged to any person any aspect of such Confidential Information otherwise than may be allowed in terms of this undertaking;

5.2 to take all such steps as may be necessary to prevent the Confidential Information falling into the hands of an unauthorised third party;

5.3 not to make use of any of the Confidential Information in the development, manufacture, marketing and/or sale of any goods;

5.4 not to use any research data for publication purposes;

5.5 not to use or disclose or attempt to use or disclose the Confidential Information for any purpose other than performing research purposes only and includes questionnaires, interviews with participants, data gathering, data analysis and personal information of participants/research subjects;

5.6 not to use or attempt to use the Confidential Information in any manner which will cause or be likely to cause injury or loss to a research participant or the NWU; and

5.7 that all documentation furnished to me by the NWU pursuant to this undertaking will remain the property of the NWU and upon the request of the NWU will be returned to the NWU. I shall not make copies of any such documentation without the prior written consent of the NWU.

6 Exception

The above undertakings by myself shall not apply to Confidential Information which I am compelled to disclose in terms of a court order.

7 Jurisdiction

This undertaking shall be governed by South African law be subject to the jurisdiction of South African courts in respect of any dispute flowing from this undertaking.

8 Whole agreement

8.1 This document constitutes the whole of this undertaking to the exclusion of all else.

8.2 No amendment, alteration, addition, variation or consensual cancellation of this undertaking will be valid unless in writing and signed by me and the NWU.

Dated at Potchefstroom this _____ 20____

Witnesses:

1

2
(Signatures of witnesses)

.....
(Signature)

Appendix E: Validation questionnaire for nursing expert

CONTENT VALIDATION OF THE:

QUESTIONNAIRE TO VALIDATE STATEMENTS REGARDING PERCEPTIONS ON THE CLINICAL ROLE OF THE ADVANCED PSYCHIATRIC NURSE IN SENSORY PROCESSING DISORDER

The purpose of this questionnaire is to validate statements regarding the perceptions of healthcare professionals on the clinical role of the advanced psychiatric nurse in sensory processing disorder (SPD). The questionnaire was developed based on responses of a panel of experts during the first round of the study. The selected panel responded to an open-ended question about their perceptions on the clinical role of the advanced psychiatric nurse in sensory processing disorder.

The qualitative data of the first round were analysed into statements reflecting the perceptions of the panel of experts on what the clinical role of the advanced psychiatric nurse in SPD is.

Instructions

1. Please rate the content relevance of the items reflecting in the questionnaire using the 4 point rating scale where 1 = not relevant at all and 4 = very relevant. Type the relevant number in the space provided that reflects your judgement on the relevance of the item.
2. Rate the content clarity by typing 'Y' if the items are clear and 'N' if the items are unclear.
3. Please list the numbers of the items that in your opinion best reflect each theme.
4. The Likert scale will include five (5) response options from "strongly agree to strongly disagree".

Questionnaire to validate statements regarding sensory processing disorder: perceptions on the clinical role of the advanced psychiatric nurse.

	Please indicate your agreement/disagreement: (1 = Strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree)	1	2	3	4	5	Not sure	Comments
21	Example: <i>The APN must have extensive knowledge with regard to sensory processing disorders.</i>				x			

A Specialised training of advanced psychiatric nurses in sensory processing disorder

1	The APN must be able to identify the basic components of sensory processing disorders.							
2	It is vital for the APN to understand sensory processing disorders.							
3	The APN need additional training to recognise the signs and symptoms of sensory processing disorders as early as possible.							
4	Sensory processing disorder is a specialised field and therefore additional training is required for APN's.							
5	Importance of early identification of children who are at risk.							
6	The APN need to be experienced in the field of sensory development and assessment.							

B Interventions carried out by the APN with regard to sensory processing disorder

7	If the APN understand sensory processing disorders he/she can alter the handling and treatment of the child.							
8	The role of the APN include the assessment, diagnose and treatment of sensory processing disorder.							
9	The APN must help to minimise the emotional trauma of children when exposed to a hospital environment.							
10	Implementation of sensory strategies in conjunction with the medical team.							
11	The APN must provide a treatment programme to children and their families.							
12	Adaptation of the environment to support sensory organisation form part of the role of the APN.							

C Adequate support to the family with regard to sensory processing disorder

13	The APN need to assist the family in receiving comprehensive services available to them.							
14	The APN need to adequately prepare the parents emotionally and physically with regard to possible surgical interventions.							
15	The APN must provide parent counselling and information regarding sensory processing disorder.							
16	Assisting the family in carrying out the prescribed sensory interventions and home programmes.							
17	The APN need to support and train parents regarding sensory processing disorders.							

D Referral of a child with sensory processing disorder

18	The APN need to refer the child to the occupational therapist for further management.							
19	Referral to an appropriate professional to treat the child and family.							
20	The APN must facilitate communication between all the professionals working with the child.							

Questionnaire for content validation of statements on the clinical role of the APN in SPD

Theme A – Specialised training of advanced psychiatric nurses in sensory processing disorder

		Relevance				Clarity				
1	The APN must be able to identify the basic components of sensory processing disorders.	1	2	3	4		Y		N	
2	It is vital for the APN to understand sensory processing disorders.	1	2	3	4		Y		N	
3	The APN need additional training to recognise the signs and symptoms of sensory processing disorders as early as possible.	1	2	3	4		Y		N	
4	Sensory processing disorder is a specialised field and therefore additional training is required for APN's.	1	2	3	4		Y		N	
5	Importance of early identification of children who are at risk.	1	2	3	4		Y		N	
6	The APN need to be experienced in the field of sensory development and assessment.	1	2	3	4		Y		N	

Suggestions for making statements clear. Please indicate by number.

--

In my opinion the statements that best reflect the theme are: Please indicate the number

--

Theme B – Interventions carried out by the APN with regard to sensory processing disorder

		Relevance				Clarity			
7	If the APN understand sensory processing disorders he/she can alter the handling and treatment of the child.	1	2	3	4		Y		N
8	The role of the APN include the assessment, diagnose and treatment of sensory processing disorder	1	2	3	4		Y		N
9	The APN must help to minimise the emotional trauma of children when exposed to a hospital environment.	1	2	3	4		Y		N
10	Implementation of sensory strategies in conjunction with the medical team.	1	2	3	4		Y		N
11	The APN must provide a treatment programme to children and their families.	1	2	3	4		Y		N
12	Adaptation of the environment to support sensory organisation form part of the role of the APN.	1	2	3	4		Y		N

Suggestions for making statements clear. Please indicate by number.

In my opinion the statements that best reflect the theme are: Please indicate the number

Theme C – Adequate support to the family with regard to sensory processing disorder

		Relevance	Clarity			
13	The APN need to assist the family in receiving comprehensive services available to them.	1 2 3 4		Y		N
14	The APN need to adequately prepare the parents emotionally and physically with regard to possible surgical interventions.	1 2 3 4		Y		N
15	The APN must provide parent counselling and information regarding sensory processing disorder.	1 2 3 4		Y		N
16	Assisting the family in carrying out the prescribed sensory interventions and home programmes.	1 2 3 4		Y		N
17	The APN need to support and train parents regarding sensory processing disorders.	1 2 3 4		Y		N

Suggestions for making statements clear. Please indicate by number.

In my opinion the statements that best reflect the theme are: Please indicate the number

Theme D – Referral of a child with sensory processing disorder

		Relevance	Clarity			
18	The APN need to refer the child to the occupational therapist for further management.	1 2 3 4		Y		N
19	Referral to an appropriate professional to treat the child and family.	1 2 3 4		Y		N
20	The APN must facilitate communication between all the professionals working with the child.	1 2 3 4		Y		N

Suggestions for making statements clear. Please indicate by number.

--

In my opinion the statements that best reflect the theme are: Please indicate the number.

--

Thank you for your time and effort – it is much appreciated!

Appendix F: Questionnaire of round 2

SENSORY PROCESSING DISORDER: PERCEPTIONS ON THE CLINICAL ROLE OF THE ADVANCED PSYCHIATRIC NURSE Round two

Welcome to My Survey

You are kindly invited to take part in the second round of the above mentioned study. Your feedback is important. Just to refresh your mind the open-ended question of the questionnaire that you completed for the first round is included for you to reflect on.

The open-ended question for round one was as follows: "According to the American Nurses Association (ANA: 2012), the clinical role of the advanced psychiatric nurse practitioner is defined as one of promoting and maintaining the mental health of the APN's clients by implementing the nursing process. This process enables the APN to assess, diagnose and treat signs and symptoms that indicate mental health illness and psychiatric disorders. What do you think is the clinical role of the advanced psychiatric nurse in delivering mental health care to children with sensory processing disorder? Please provide a role description as complete and comprehensive as you can."

After data analysis of the information obtained during the first round, four themes were identified as the following:

- A - Specialised training of the advanced psychiatric nurses in sensory processing disorder
- B - Interventions carried out by the APN with regard to sensory processing disorder
- C - Adequate support to the family with regard to sensory processing disorder
- D - Referral of a child with sensory processing disorder

Each theme have three to five supportive statements that reflect on the clinical role of the APN in SPD. The statements was obtained from the feedback provided by the participants of round one. The purpose of this questionnaire is to validate the statements regarding the clinical role of the APN in SPD.

Your participation will include completing the questionnaire anonymously by indicating your agreement/disagreement with statements. A space is provided if you feel the need to motivate your answer or make additional comments. Completing the questionnaire will take approximately 30 minutes and you have 7 working days to respond after which you will receive a once-off e-mail to remind you to complete the questionnaire. Your inputs are valuable and the data gathered from the questionnaire will be analysed in order to formulate a dense and descriptive definition regarding the clinical role of the APN in SPD.

Please click next to proceed to the questionnaire

SENSORY PROCESSING DISORDER: PERCEPTIONS ON THE CLINICAL ROLE OF THE ADVANCED PSYCHIATRIC NURSE Round two

THEME A : SPECIALISED TRAINING OF ADVANCED PSYCHIATRIC NURSES IN

1

SENSORY PROCESSING DISORDER

Please indicate your agreement/disagreement:

(1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree)

1. The APN must be able to identify the basic components of sensory processing disorder

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

☐	☐	☐	☐	☐	☐
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other (please specify)

--

2. It is vital for the APN to understand sensory processing disorder

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

☐	☐	☐	☐	☐	☐
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other (please specify)

--

3. The APN need additional training to recognise the signs and symptoms of sensory processing disorder as early as possible

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

☐	☐	☐	☐	☐	☐
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other (please specify)

--

4. Sensory processing disorder is a specialised field and therefore additional training is required for APN's

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

☐	☐	☐	☐	☐	☐
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other (please specify)

--

5. The APN need to identify children who are at risk for sensory processing disorder

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

☐	☐	☐	☐	☐	☐
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other (please specify)

--

6. The APN need to be experienced in the field of sensory development and assessment thereof

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

☐	☐	☐	☐	☐	☐
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other (please specify)

--

**SENSORY PROCESSING DISORDER: PERCEPTIONS ON THE CLINICAL ROLE OF THE
ADVANCED PSYCHIATRIC NURSE
Round two**

**THEME B : INTERVENTIONS CARRIED OUT BY THE APN WITH REGARD TO
SENSORY PROCESSING DISORDER**

7. If the APN understand sensory processing disorder he/she can alter the handling and treatment of the child

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

☐	☐	☐	☐	☐	☐
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other (please specify)

--

8. The role of the APN include the assessment, nursing diagnosis and treatment of sensory processing disorder

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

☐	☐	☐	☐	☐	☐
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other (please specify)

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9. The APN must help to minimise the emotional trauma of children when exposed to the hospital environment

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

☐	☐	☐	☐	☐	☐
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other (please specify)

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10. The APN to implement sensory strategies in conjunction with the medical team

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

☐	☐	☐	☐	☐	☐
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other (please specify)

--

11. The APN must provide a treatment programme to children and their families

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

☐	☐	☐	☐	☐	☐
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other (please specify)

--

12. Adaptation of the environment that is within the control/abilities of the APN to support sensory organisation

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

☐	☐	☐	☐	☐	☐
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other (please specify)

--

**SENSORY PROCESSING DISORDER: PERCEPTIONS ON THE CLINICAL ROLE OF THE
ADVANCED PSYCHIATRIC NURSE
Round two**

**THEME C : ADEQUATE SUPPORT TO THE FAMILY WITH REGARD TO SENSORY
PROCESSING DISORDER**

13. The APN need to assist the family in receiving comprehensive services available to them

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

☐	☐	☐	☐	☐	☐
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other (please specify)

--

14. The APN need to adequately prepare the parents emotionally and physically with regard to possible surgical interventions

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

☐	☐	☐	☐	☐	☐
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other (please specify)

--

15. The APN must provide parent counselling and information regarding sensory processing disorder

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

16. Assist the family in carrying out the prescribed sensory interventions and home programmes

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

17. The APN need to support and train parents regarding sensory processing disorders

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

**SENSORY PROCESSING DISORDER: PERCEPTIONS ON THE CLINICAL ROLE OF THE
ADVANCED PSYCHIATRIC NURSE
Round two**

THEME D : REFERRAL AF A CHILD WITH SENSORY PROCESSING DISORDER

18. The APN need to refer the child to the occupational therapist for further management

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

19. The APN need to refer to an appropriate professional to treat the child and family

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

20. The APN could facilitate communication between all the professionals working with the child

1.strongly agree

2.agree

3.neutral

4.disagree

5.strongly disagree

not sure

☐	☐	☐	☐	☐	☐
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other (please specify)

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Thank you for taking the time to complete the questionnaire for the second round. The third and last round of the survey will be send to you within the following two to three weeks.

Appendix G: Questionnaire of round 3

SENSORY PROCESSING DISORDER: PERCEPTIONS ON THE CLINICAL ROLE OF THE ADVANCED PSYCHIATRIC NURSE Round Three

Welcome to My Survey

You are kindly invited to take part in the third and which is also the last round of the above mentioned study. Your feedback is important. Just to refresh your mind the open-ended question of the questionnaire that you completed for the first round is included for you to reflect on.

The open-ended question for round one was as follows: "According to the American Nurses Association (ANA: 2012), the clinical role of the advanced psychiatric nurse practitioner is defined as one of promoting and maintaining the mental health of the APN's clients by implementing the nursing process. This process enables the APN to assess, diagnose and treat signs and symptoms that indicate mental health illness and psychiatric disorders. What do you think is the clinical role of the advanced psychiatric nurse in delivering mental health care to children with sensory processing disorder? Please provide a role description as complete and comprehensive as you can."

After data analysis of the information obtained during the first round, four themes were identified as the following:

- A - Specialised training of the advanced psychiatric nurses in sensory processing disorder
- B - Interventions carried out by the APN with regard to sensory processing disorder
- C - Adequate support to the family with regard to sensory processing disorder
- D - Referral of a child with sensory processing disorder

Each theme had three to five supportive statements that reflected on the clinical role of the APN in SPD. The statements was obtained from the feedback provided by the participants of round one. The purpose of this questionnaire was to validate the statements regarding the clinical role of the APN in SPD. The analysis of the data for round two was quantitative and the descriptive data are included for each question as well as the comment remarks for you to reflect on and to compare and re-evaluate your opinion regarding the statements.

Your participation will include completing the same questionnaire as for the previous round anonymously by indicating your agreement/disagreement with statements. Please give a rationale for any changes in your opinion from the previous round and/or any other comments. Completing the questionnaire will take approximately 30 minutes and you have 7 working days to respond after which you will receive a once-off e-mail to remind you to complete the questionnaire. Your inputs are valuable and the data gathered from the questionnaire will be analysed in order to formulate a dense and descriptive definition regarding the clinical role of the APN in SPD. As soon as this role description is available it will be sent to you via e-mail. You need not respond on it with any feedback it is only for your personal reflection and as part of the research study plan to disseminate the study results.

Please click next to proceed to the questionnaire

**SENSORY PROCESSING DISORDER: PERCEPTIONS ON THE CLINICAL ROLE OF THE
ADVANCED PSYCHIATRIC NURSE
Round Three**

Questionnaire: Round three

Information regarding the completion of questionnaire:

1. The descriptive statistics response data collected during round 2 of the study will be included and indicated as the following:

Mean= M

Interquartile range= IR (has to be 1 or less to indicate consensus)

Standard Deviation= SD (has to be 1.5 or lower to indicate consensus)

Percentage Agreement= PA (has to be more than 51% to indicate consensus)

Take note: Frequency scores in green indicate consensus and red indicate no consensus

2. The comments as provided by the participants of the previous rounds is also included as applicable.

3. Please indicate your agreement/disagreement:

(1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree)

4. Please give a rationale for any changes in your opinion from the previous round and/or any other comments.

**THEME A: SPECIALISED TRAINING OF ADVANCED
PSYCHIATRIC NURSES IN SENSORY PROCESSING DISORDER**

1. The APN must be able to identify the basic components of sensory processing disorder

M= 1.31 SD= 0.480 IR= 1.00 PA= 100%

Comments:

None

1.strongly agree

2.agree

3.neutral

4.disagree

5.strongly disagree

not sure

Other (please specify)

2. It is vital for the APN to understand sensory processing disorder

M= 1.54 SD= 0.877 IR= 1.00 PA= 92.3%

Comments:

Respondent #2: This is so difficult to understand but it would definitely help!

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

3. The APN need additional training to recognise the signs and symptoms of sensory processing disorder as early as possible

M= 1.38 SD= 0.650 IR= 1.00 PA= 92.3%

Comments:

None

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

4. Sensory processing disorder is a specialised field and therefore additional training is required for APN's

M= 1.23 SD= 0.439 IR= 0.50 PA= 100%

Comments:

Respondent #10: But only in recognising signs and symptoms, NOT treatment thereof

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

5. The APN need to identify children who are at risk for sensory processing disorder

M= 1.23 SD= 0.439 IR= 0.50 PA= 100%

Comments:

None

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

6. The APN need to be experienced in the field of sensory development and assessment thereof

M= 2.62 SD= 1.261 IR= 2.50 PA= 53.8%

Comments:

Respondent #6: The person needs to be able to identify not intervene independantly

Respondent #9: I don't think APN should be able to assess for SPD, rather identify the factors and then refer for assessment with an SI trained OT

Respondent #10: Not formal assessment, through checklists and information gathered they must have enough knowledge to be able to refer

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

**SENSORY PROCESSING DISORDER: PERCEPTIONS ON THE CLINICAL ROLE OF THE
ADVANCED PSYCHIATRIC NURSE
Round Three**

**THEME B : INTERVENTIONS CARRIED OUT BY THE APN WITH REGARD TO
SENSORY PROCESSING DISORDER**

**7. If the APN understand sensory processing disorder he/she can alter the handling and
treatment of the child**

M= 1.92 SD= 1.256 IR= 1.00 PA= 84.6%

Comments:

Respondent #10: Treatment ONLY by SI trained OT's

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

8. The role of the APN include the assessment, nursing diagnosis and treatment of sensory processing disorder

M= 4.08 SD= 1.441 IR= 2.00 PA= 15.4%

Comments:

Respondent # 2: Not the treatment of SPD. It should be referred to the specialist e.g. SI OT

Respondent #5: I am indicating 'neutral' here because I feel that there must be a point at which an OT is consulted so that the roles in these cases are not too blurred. And perhaps an OT can come into the picture at an assessment level?

Respondent #6: SPD has to be assessed by a qualified OT, who can make recommendations to APN on handling techniques

Respondent #8: Treatment specific to the field of nursing, not SPD treatment i.e. can't prescribe and manage sensory integration therapy; only assist with carry over of home programmes etc.

Respondent #10: Only assisting in implementing strategies when child has seen SI Occupational therapist

Respondent #11: Only if extra training received

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

9. The APN must help to minimise the emotional trauma of children when exposed to the hospital environment

M= 1.08 SD= 0.277 IR= 0.00 PA= 100%

Comments:

None

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

10. The APN to implement sensory strategies in conjunction with the medical team

M= 1.67 SD= 0.492 IR= 1.00 PA= 100%

Comments:

Respondent #9: But only under supervision of an SI trained OT

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

11. The APN must provide a treatment programme to children and their families

M= 3.85 SD= 1.281 IR= 2.00 PA= 15.4%

Comments:

Respondent #5: Again here I wonder where the roles between the two professions are defined?

Respondent #6: Treatment of SPD has to be prescribed by qualified OT, APN can consult with regards to her scope of practice.

Respondent #8: If specific to SPD treatment, must be related to the field of nursing otherwise must refer to SI trained OT.

Respondent #9: This should be done by an SI trained OT, the nurse can implement suggestions as prescribed by the OT within the hospital setting.

Respondent #10: NOT on own in case of SI, in conjunction with SI Therapist.

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

Other (please specify)

12. Adaptation of the environment that is within the control/abilities of the APN to support sensory organisation

M= 1.54 SD= 0.519 IR= 1.00 PA= 100%

Comments:

None

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

Other (please specify)

**SENSORY PROCESSING DISORDER: PERCEPTIONS ON THE CLINICAL ROLE OF THE
ADVANCED PSYCHIATRIC NURSE
Round Three**

**THEME C : ADEQUATE SUPPORT TO THE FAMILY WITH REGARD TO SENSORY
PROCESSING DISORDER**

13. The APN need to assist the family in receiving comprehensive services available to them

M= 1.23 SD= 0.439 IR= 0.50 PA= 100%

Comments:

Respondent #6: The APN is most likely first contact point and key to team intervention

1.strongly agree 2.agree 3.neutral 4.disagree 5.strongly disagree not sure

Other (please specify)

14. The APN need to adequately prepare the parents emotionally and physically with regard to possible surgical interventions

M= 1.46 SD= 0.519 IR= 1.00 PA= 100%

Comments:

Respondent # 2: What surgical intervention would there be for SPD?

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

15. The APN must provide parent counselling and information regarding sensory processing disorder

M= 2.85 SD= 1.281 IR= 2.00 PA= 46.2%

Comments:

Respondent #2: And then refer to a specialist.

Respondent #5: I would be concerned about the OT role versus APN role.

Respondent #6: Role of SI trained OT.

Respondent #10: But not in such a way that the parents does not go to an OT because they feel that they received all the help they could get from the APN.

Respondent #11: Only if suitably qualified in SPD.

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

16. Assist the family in carrying out the prescribed sensory interventions and home programmes

M= 2.38 SD= 1.261 IR= 2.00 PA= 69.2%

Comments:

Respondent #2: Refer on.

Respondent #5: I would be concerned about the OT role and the APN role.

Respondent #11: Only if suitable qualified in SPD.

Respondent #12: Interventions must be prescribed by SI qualified OT and APN can then assist the family .

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

17. The APN need to support and train parents regarding sensory processing disorders

M= 3.23 SD= 1.166 IR= 2.00 PA= 30.8%

Comments:

Respondent #2: Refer to a specialist.

Respondent #6: Trained OT's function.

Respondent #11: Only if suitably qualified in SPD.

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

**SENSORY PROCESSING DISORDER: PERCEPTIONS ON THE CLINICAL ROLE OF THE
ADVANCED PSYCHIATRIC NURSE
Round Three**

THEME D : REFERRAL AF A CHILD WITH SENSORY PROCESSING DISORDER

18. The APN need to refer the child to the occupational therapist for further management

M= 1.08 SD= 0.277 IR= 0.00 PA= 100%

Comments:

Respondent #6: In terms of SPD intervention, not physical or medical care.

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

19. The APN need to refer to an appropriate professional to treat the child and family

M= 1.17 SD= 0.389 IR= 0.00 PA= 100%

Comments:

Respondent #6: Depending on the need.

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

20. The APN could facilitate communication between all the professionals working with the child

M= 1.50 SD= 0.674 IR= 1.00 PA= 91.7%

Comments:

Respondent #6: As mentioned, APN most likely first point of contact.

1.strongly agree	2.agree	3.neutral	4.disagree	5.strongly disagree	not sure
☐	☐	☐	☐	☐	☐

Other (please specify)

Thank you for taking the time to complete the questionnaire for the third round. The description of the clinical role of the APN in SPD will be sent to you via e-mail.