

SensorNet 52: July 2018
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Sensory Integration Education News

sensor**net**

SI learning from South Africa

We bring ISIC & WFOT to you

Find out all about the congresses hosted in Cape Town, South Africa

The Big Interview

Annamarie van Jaarsveld talks to SensorNet about SI in South Africa and ISIC

Feature Interview

Janine van der Linde tells us about her research on SI in low socio-economic populations in South Africa

ASI 2020 Vision

EASI update

Early Adopters of SI

The series continues with Dr. Sidney Chu

Research updates

References and abstracts for recent articles related to sensory processing and neuroscience



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Gina Daly

Letter from the Editor

We are delighted to welcome you to our summer edition of SensorNet. I'm currently writing this looking at the surrounding landscapes of Cape Town in South Africa, where I have been based for both the World Federation of Occupational Therapists' (WFOT) Congress and the first International Sensory Integration Congress (ISIC). With the historic landscapes of the Cape of Good Hope, Robben Island and Table Mountain – Cape Town really has it all. It's an ideal location to connect with professionals from around the globe who share a common interest in education and research.

For the SI community, ISIC marks a monumental moment. This event symbolises the growing evidence base, research, interest and practice of sensory integration on a global scale. ISIC provided an opportunity for us to link with our international colleagues from around the globe. Both congresses provided delegates with an experience to step outside the realms of their individual countries and roles and learn what is happening further afield – in research, education, and/or clinical practice.

The impact of socio-economic difficulties, accessing and working with diverse populations, occupational consciousness and occupational justice formulated powerful themes at WFOT. Similarly, ISIC built on some of these themes, reiterating how

to adopt SI assessments and interventions with low socio-economic populations. The accessibility of the EASI was a key discussion topic and the adoption of ICEASI standards in each region was hugely interesting.

The theme of this edition is “sharing new learning” from both congresses. We're sharing the highlights to give you a real flavour of what both congresses embodied. This edition features two interviews with South African Occupational Therapists - Annamarie van Jaarsveld and Janine Van Der Linde. Both are involved in the education and research of SI in South Africa and have been instrumental in developing SI theory and practice amongst the South African community.

We had the chance to catch up with Dr. Antoine Bailliard fresh from his presentation at WFOT, which focused on the hot topic of sensory processing in mental illness. This is an area continuing to build momentum and recognition. We have provided a short summary on some of the key presentations from both congresses for you to read at your leisure. This edition has all our usual features including the latest ASI 2020 vision updates, a continuation of the early adopters of SI series and a research update from one of our members – Helen Justice.

Keeping SensorNet practical and relatable to clinical practice is something we always strive achieve. Fittingly, we have a practice-based

article from Alison Harris - Consultant Occupational Therapist and Advanced Practitioner in Sensory Integration. She kindly shared a case study from her practice, where she used an SI approach to address core occupational performance difficulties with an adult.

Sensory Integration Education has had many exciting developments. SI module 2 has officially launched online since our previous edition. The first cohort have almost completed the course and feedback continues to be very positive. SI Module 1 online has also been running with the 5th cohort almost finished. While we want to cling on to the summer for as long as possible, we here in Sensory Integration Education are busy preparing for the Sensory Integration Education Autumn congress, which will be hosted at Aston University in Birmingham (Saturday 10th November). We always look forward to this event, as it is a chance for us to engage and meet our members, share our knowledge and develop new links. Looking forward to seeing you all there.

Warmest Regards,

Gina Daly 
Editor, SensorNet

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Chair's update

Rosalind Rogers the Chair of Sensory Integration Education (UK and Ireland).



Rosalind Rogers

Welcome to this edition of SensorNet

As a rule, I find that despite always thinking about it, I cannot commit the Chair's Letter to paper until the publication deadline is very close. Normally our wonderful Editor, Gina Daly, pursues me diplomatically by email for this letter. However, this year she was able to 'nudge' me about it face to face as we both had the privilege of representing Sensory Integration Network, UK & Ireland, at the first International Sensory Integration Congress (ISIC) in late May. ISIC was hosted and organised beautifully by the South African Institute of Sensory Integration (SAISI) and was held in Cape Town.

Our Board had asked Gina, as SensorNet's Editor, to go to South Africa, on your behalf for two reasons. Firstly, Gina would flag the presentations that were relevant to Sensory Integration, at the World Federation of Occupational Therapists' Congress also held in Cape Town which took place in the week leading up to ISIC. Secondly, Gina would attend ISIC and on behalf of our community, both

back home and around the world, highlight developments in SI research and practice. In addition, she would communicate the special atmosphere that is created when passionate clinicians, educators and researchers come together for two days.

I am sure if you read Gina's excellent, informative and inspiring daily Facebook updates from across both congresses,  she more than delivered!

While I personally met many new people in ISIC, I was struck by how many Sensory Integration Network members were there. I had rich conversations with UK and international delegates who were making their way through the Ulster/Sensory Integration Education postgraduate courses. I listened with great interest to life after SI4, after Master's and the progress of Masters' projects themselves. One international member commented that she enrolled two of her staff on the online SI1 module. She found that not only did they really enjoy it, but that she immediately noticed a difference in how insightful their clinical reports had become, once they passed it. I also heard about innovative service changes and

service developments to improve access to ASI intervention.

The people I met characterised the essence of so very many people in our SI Community. Having engaged with many members over the last four years as Chair, I have overwhelmingly been met with passion for the value of SI, *commitment* to clinically developing one's 'craft', *thirst* for objective evidence, and respect for different perspectives and professions. This has all been driven by a *professional integrity* to do the very best for one's client, family, and service. So, I am capturing my reflection in the following behaviours:

- Passion for SI shines through our members' clinical practice.
- Commitment to professional development, such as the SI Advanced Practitioner pathway, and other specialist CPD
- Thirst for being informed about objective evidence that is then applied in practice
- Respect for different experiences and professions is apparent in one's behaviours, communication, and a confidence in knowing who one is, while appreciating what others can bring.

Many of you may read my reflection and feel it describes similar behaviours to those seen in both yourself and those around you during your own SI learning journey. It may prompt you to think about how you use/ will be able to use your SI knowledge and skills in your own unique professional and personal contexts. If so, you will agree with me and the vast majority of our members that the SIN/ Ulster modular pathway really does offer truly *transformational* knowledge.

Our role as an Organisation is to *support* your journey. We will not always get our communications right first time, but our *intent* is to do exactly that. Attending ISIC in Cape Town allowed me to appreciate exactly what words to use to reflect my thoughts and feelings about this support. I capture them below.

- We absolutely make no apology, in fact we *celebrate* that we are providing education for OTs, PTs and SLTs, and the sooner we can provide transformational SI knowledge to Psychologists, Teachers, and Specialist Nurses the better.
- We *embrace* the feedback that the underpinning neuroscience is both reassuring to find so strongly positioned in SI1 *and that* it also presents a learning challenge. We are not complacent - we continually work to improve how we present and teach it. Our view is that your clients need you to argue for why SI may be the right intervention of choice *using*

informed objective arguments grounded in sound, current neuroscience theory. You also need this neuroscience knowledge to interpret emerging research and apply clinically, if relevant.

- We share the concerns of others that some who work within an SI frame of reference may be perceived as 'emotionally devotional' to those that have had the privilege to work with Dr. Jean Ayres and that SI critics may see us as "followers". Instead, we strive to be a professional, inclusive community of practitioners, researchers, and educators, where leaders who have helped shape our current understanding are respectfully valued. We are an organisation which leads in university-level postgraduate education and training. Such education and training has to be created by the best specialists in the field working in partnership with professional educators and curriculum designers.
- It is essential that we are lean and efficient with our organisation's staffing and processes. We seek to continue to increase our online education, making transformational learning available to many more people. But, as I wrote in my last SensorNet letter, we have listened to you. We are committed for *as long as demand is there, to run all modules face-to-face once a year.* The face-to-face content will be supported by online learning material to work through as well – referred to as

'blended' learning. From a timing perspective, we will aim to run the face to face /blended learning option one year after the online module has first run.

- We strive to invest profits into research in order to produce objective evidence. We have been investing in grants for Masters-level projects. We are actively seeking and awarding grant applications for PhDs. We have started to differentiate Sensory Integration Education (SIE) as the Education arm of Sensory Integration Network. We then hope to have Sensory Integration Research as the visible place for this research work.

So, I think of people like those delegates in Cape Town whenever I am having a challenging day! Doing so encourages me to keep promoting education in SI knowledge and skills because it helps change people's lives. This is what inspires me. This is what drives me to lead our organisation, which strives to serve the CPD needs of our growing SI community of practitioners, researchers, and educators.

Thank you to SAISI and their wonderful leadership and organisation and for creating for that productive reflective space.

Best wishes



Rosalind Rogers
Chair of Board of Directors

A Snap Shot in Time: ISIC 2018



Summary from the first International Congress for Sensory Integration



ISIC 2018
Cape Town
South Africa



For those of you unable to travel and attend ISIC this year, we have provided a brief summary of the highlights from the two day event in Cape Town. We hope you can be transported in time as you read up on the latest SI developments from around the world.

Annamarie van Jaarsveld opened the congress with a presentation entitled “Ayres sensory integration from around the world”, which provided a birds eye view on the state of Sensory Integration in the ISIC 2018 presenting countries and provided a global perspective on Ayres Sensory Integration

The strengths and challenges from some of the 24 countries represented at the congress were reflected upon. Some of the strengths from the UK and Irish content included an increasing demand for ASI services, development of research and practice across diverse populations, the growing demand for ASI training both face to face and online, and the increasing number of trained OT’s, PT’s and SLT’s in both the public and private health sectors.

Elisabeth Soechting from Austria presented on the “Quality of effectiveness in Ayres Sensory Integration”, which delved into how to rate the quality of a study

and how to grade the strength of a body of evidence. Elisabeth discussed using the PEDRO scale as an effective tool for rating the quality of studies. This scale categorises studies into excellent, good, fair, and poor. The quality of studies was discussed in relation to SI with the SchAAF’ et al. (2014) RCT study on children with autism being classified as “very good” on the PEDRO scale. Pfeiffer et al. (2011) pilot RCT with children with autism was classified as “good”. Iwanga et al. (2014) which undertook a pilot study using a pre-post test group comparison with autism was rated within the fair category. General recommendations for future effectiveness research in the area of SI included: completing research with other diagnoses outside of autism, developing evidence for ASI amongst other MDT members, identifying ways to objectively demonstrate the broad spectrum of outcomes and when writing an article – referring to the rating rubrics to include all the

requested information to ensure a high quality article is produced.

Professor Claudia Omairi from Brazil presented her findings from an RCT she conducted on the efficacy of ASI with Autism. Davor Duic from Croatia presented about his inspirational clinical work in which he uses an animal assisted ASI approach in therapy. The video footage of his clinical practice in Croatia was inspiring and filled the room with joy. Davor demonstrated a high level of skill by following through on the fidelity to ASI but also incorporating animals into this treatment modality. Paulo Fernandes from Spain spoke about ASI education around the world and the differences and similarities between the various countries and regions. The development and implementation of ICEASI will assist in bringing more uniformity to the training and education of ASI across the globe.

Isabelle Beaudry Bellefeuille, an Occupational Therapist from Spain presented her research

on defecation specific behaviour and sensory integration. Isabelle discussed her research in the area of sensory issues in children with functional defecation disorders, which include constipation, incontinence, and refusing to use the toilet that all of which are not linked. It has a high prevalence worldwide and it is often as a result of an interaction between physiological, social and behaviour processes.

Isabelle's research began with a gastrointestinal neurologist who was seeing children with feeding issues and acknowledged the impact of sensory issues on participation and daily life activities. He was concerned about the participation in toileting routines and atypical defecation routines in many of his young patients and the limited success that current treatment modalities were having with these children. Isabelle was urged to assess these patients, where a clear pattern of sensory over reactivity became evident and they started documenting these sensory processing issues. The relationship between sensory integration difficulties and functional defecation disorders has not been explored within the literature so an assessment tool was devised as a starting point. Isabelle discussed the development of the Toileting Habits and Behaviour Questionnaire (THBQ) This questionnaire was designed to detect typical versus atypical toileting habits and identify the habits related to sensory issues in children with functional defecation disorders. A pilot study was then

conducted using the THBQ to review the newly developed tool, which included children with functional constipation who had not responded to medical management and a control group of typically developing children. The Short Sensory Profile was also used as it was already in Spanish and it was found that there was significantly more sensory over reactivity in children with functional constipation in comparison to the typically developing children. The THBQ



showed there was a higher frequency of these habits, which were hypothesized to be linked to sensory over reactivity. Hyperreactivity to tactile information was found to be highly linked to toileting refusal. These findings set the stage for further research, advocates for better defined functional defecation concerns and examines the impact of sensory issues on healthy toileting and defecation habits.

Dr. Diane Parham spoke about the use of questionnaires as assessment tools with an

emphasis on the development of the new SPM-2 which is a family of questionnaires. The SPM is derived from the Ayres Sensory Integration theoretical approach. The SPM-2 items will have continuity across the lifespan and the items will address sensory modulation, perception, postural control, praxis and social participation. There will be separate infant (4-9 months) and toddler (10-30 months) questionnaires as significant change occurs so rapidly during these stages. Within the infant and toddler assessment there will be a caregiver self-report about their own sensory processing characteristics. This will assist the caregiver in becoming aware of how their own characteristics impact their infant. There will be a preschool (2-5 years) caregiver and teacher report and a school age child (5-12 years) caregiver and teacher report. These will include school environment forms. The adolescent form will cover the age range of 12-21 years. There will also be an adult form which will go up to 90 years of age but it may include 16-21 year olds if they are no longer in school. If a young person aged 16-21 years old is still in school then it is advised to use the adolescent form. The SPM-2 is designed to support team work and collaboration and to provide an insight into what is happening within multiple environments. The wording for the scoring will change slightly in this new version to typical, moderate and severe sensory processing difficulties. We look forward to its release.

Janine van der Linde, an



Occupational Therapist from South Africa, spoke about her research on SI in low socio-economic environments. We had a chance to interview Janine to discuss her research and much more in terms of SI practice in South Africa. Don't forget to check out her interview featured in this edition.

Dr. Eynat Gal from Israel presented on the relationship between praxis and demographic characteristics. Eynat has authored a combination 60 research articles and book chapters. This study explored the validity and reliability of the EASI praxis subtests and also explored the relationship between praxis and daily living skills and leisure. 282 typically developing children aged between 6-12 years took part in the study. The EASI praxis subtests were administered along with the Perceived Efficacy and Goal setting System (PEGS) and a demographic questionnaire completed by parents. Results showed that there was high internal consistency and inter rater reliability of the EASI praxis tests. The total EASI praxis score was positively correlated with education and activities of daily living but not with the leisure subtests of the PEGS.

Professor Roseann Schaaf presented a keynote speech on Data Driven Decision Making in ASI. She spoke at length about how she has used Data Driven Decision Making in ASI research. Ayres Sensory Integration treatment was described by Professor Roseann Schaaf as active, individually tailored, made up of sensory motor activities, contextualised in play, at the just right challenge for the individual, which promotes performance and participation. ASI is a sensory motor intervention that targets the underlying mechanisms which affects performance and participation. ASI involves sensory enriched experiences that result in adapted responses. It focuses on the foundational aspects but measures what is happening at the activity and performance level. ASI includes sensory perception, sensory reactivity, praxis and vestibular functions.

- **When doing intervention research you must be able to identify the active ingredients in your intervention**
- **It is a complex approach that requires advanced training**
- **We are impacting the plasticity of the brain**

Professor Roseann Schaaf presented a workshop on Data Driven Decision Making and Goal Attainment Scaling with Dr. Zoe Mailloux on day two. There was something for everyone in terms of workshops with a choice of an “Adults and mental health” workshop presented by Kath Smith,

Occupational Therapist, based in the UK and Reasoning in ASI” by Dr. Susanne Smith Roley.

The EASI normative testing will be commencing in the various regions in August/September 2018, under the direction of Dr. Zoe Mailloux, all working towards the goal of the EASI availability for 2020. We heard from various regional leads who are assisting in rolling out the normative testing in their countries. A more detailed ASI 2020 vision update is included in this edition, so make sure you have a read to find out exactly where this project is up to.

The closing ISIC keynote presentation by Susanne Smith Roley reflected on “Ayres Sensory Integration: Past and future”. With extensive work and research already completed in ASI, our future is looking bright with many new researchers and therapists continuing to fly the flag and rise to the challenge across the globe, by spreading the work of Dr Jean Ayres. Society is changing – technology is resulting in children not engaging in as many sensory motor play experiences. ASI is in demand now more than ever. As a result of this, we need to provide a strong evidence base behind our practice in order to respond to this need. We all left Cape Town with hope in our hearts and ready to continue our clinical practice, research, and education to ensure that Ayres Sensory Integration lives on.

Feature interview: Annamarie van Jaarsveld

Annamarie van Jaarsveld's contribution to the development of SI within South Africa has been ground-breaking. SensorNet spoke with Annamarie for this edition in which she talks about her central role in facilitating and hosting the first international SI Congress (ISIC 2018) with SAISI.



Annamarie van Jaarsveld

SN: Tell us about your career to date and what your current role is

Annamarie: I have been an OT since 1978. When I qualified I worked mainly in child psychiatry and paediatrics. In 1994, I accepted the post at the University of the Free State where I am still currently a lecturer. I am involved in the undergraduate Occupational Therapy course where I lecture in the paediatric and psychiatry fields. I am also very involved in the 4th year management module. I established a private practice at the OT department within the University in 2000. That practice is still in existence and the 4th year OT students are doing clinical fieldwork there. I don't see children myself anymore but I am very involved in consultation with therapists who are working in the practice. I have remained involved in clinical practice throughout my academic career. I don't think I would be where I am today in terms of knowledge and experience if I didn't remain involved in clinical practice. I am grateful for the opportunities I had at the university to be able to continue with both. I am very proud to say that we

were the first university to present introductory SI training as part of the OT undergraduate programme where we focus on developing the students understanding of the basics of Sensory Integration and sensory processing in terms of modulation so that they are able identify children that are not modulated and are able to apply basic strategies from ASI to be able to make life easier for children that experience problems with modulation. We also look at SI in psychiatry where we expose the students to the role of SI in mental health as this is becoming a more prominent and important area of practice now within the SI field.

SN: May was a busy month in South Africa with both WFOT & ISIC hosted in Cape Town. Tell us how this originated?

Annamarie: This all started about 3 years ago when the group involved in establishing the International Collaboration for Education in Ayres Sensory Integration suggested that we should host an international SI congress in South Africa that coincides with WFOT. Three years ago at ESIC in Birmingham, we started finalising the details for

the South African Institute for Sensory Integration (SAISI) to host the congress in South Africa. We initially thought about hosting ISIC separately at a different time of the year to WFOT but then we thought about negotiating with WFOT for a stream of SI and then to launch ISIC at the same time. We were in contact with the organising committee of WFOT for quite a time. In the end, it was decided that a stream of just SI was not possible. They wanted to keep the same themes as they were over the years. In the end, we decided to go ahead with the congress after WFOT. We did not want to lose the opportunity and honour to present the first ISIC in South Africa so we decided on hosting it directly after WFOT.

SN: How was this year's congress theme decided?

Annamarie: When this congress originated from the now International Council for Education in ASI (ICEASI), we decided that our purpose would not only be to set standards for education and promote the unrestricted and complete exchange of knowledge among

the member associations but it would also be research and taking that out to the people. The best way to do this other than publish is to have congresses. The congress was established through the ICEASI and we had our first official ICEASI meeting on the Sunday of the congress. To decide on a theme, the Scientific Committee of SAISI were looking at the work of Schaaf et al. entitled “State of the Science: A Roadmap for Research in Sensory Integration”. We used that as a reference point when deciding about the themes of ISIC 2018. That’s how we decided on the themes of Practice, Advocacy, Education and Research. We are using this first congress to explore where the international focus of work on ASI is at the moment.

SN: ISIC 2018 had a very diverse scientific programme – how was this decided?

Annamarie: We decided to not put out a call for abstracts. We knew we couldn’t have a 3 or 4 day congress with WFOT being held prior to this. Given this, we knew we would have a small congress but at least it would be launched. We decided to invite presenters from different countries who at that stage were involved with ICEASI. We also decided to invite four key speakers who were scholars of Dr. Jean Ayres. These speakers, Dr. Zoe Mailloux, Dr. Susanne Smith Roley, Prof Roseann Schaaf and Prof Diane Parham, are very well recognised and established through their ground-breaking work in ASI. We decided to invite other speakers from countries who were really involved with ICEASI and to hear about the focus of their work/research.

SN: You opened the first international SI congress – can you summarise this for our readers?

Annamarie: Through this speech I wanted to give a global view of the countries presenting at this congress. I asked each presenter to compile two PowerPoint slides indicating the strengths and challenges of SI in their countries and included it in my presentation. I spoke in more depth about what is going on in South Africa in terms of SI. Through using this format for the opening presentation, SAISI felt it was a good way to introduce the different countries to each other and opened up the opportunity to network and connect. That is one of the core purpose of ICEASI is to support one another through an all-inclusive network.

SN: You spoke about the current state of SI in South Africa in which you addressed the strengths and challenges. Tell us some more about this.

Annamarie: SAISI was established in 1980 where training in SI was started immediately. We had experts from the US assist us in establishing a professional training platform. At that stage we were still using the Southern California Sensory Integration Tests (SCSIT) (Ayres, 1980)– the predecessor of the Sensory Integration and Praxis Tests (SIPT) (Ayres, 1989) for training purposes because the SIPT was just too costly to use in South Africa and not very user friendly in terms of scoring. We continued with the SCIST until 2006, when we negotiated with WPS with support from Dr Susanne Smith Roley, where they agreed to provide the SIPT products to

us at a South African realistic rate which was then more viable for us. We presented conversion courses for two and half years, converting from the SCSIT to the SIPT and then we started using the SIPT full time. We have invited experts from USA throughout as a quality assurance measure for our training. We have since 2006 had Zoe Mailloux, Sue Trautman, Susanne Smith Roley, Teresa May Benson, and Shelley Lane presenting courses and workshops and we have continued involvement of international experts in our training at least once a year or every second year. Susanne Smith Roley was instrumental in organising international relations with South Africa.

A strength here in South Africa, is a well-established training platform where SAISI kept their courses aligned with international standards. We have so many passionate therapists who are involved in the area of SI. SAISI is a non-profit organisation. We are not paid for what we do, being involved on the board, in terms of taking ASI forward and developing new standards is purely from a space of passion. 

Our biggest challenge is our diversity and population. We are a developing country with 20% of the population first world and the rest of the population being third world. Because of the cost of SI, 80% of children will never be able to afford SI. We have been discussing this issue for many years about how to reach more children and how to make services more easily accessible. Some of the OT’s working in the government section and in rural areas have

trained at their own expense and are delivering services but it is minimal and is only reaching a small number children. It is mainly children involved with Non-Governmental Organisations (NGOs) where there is facilities for children in the community and there could be an OT involved who can deliver SI services. However, there are only a small percentage of children reached in this manner. That continues to remain a very big challenge for us. The initiative of the “Back to Urth playgrounds” was introduced by the Department of Occupational Therapy at the University of the Free State was started in 2015. It is based on designing play park equipment that is sustainable and low cost and which allows for rich sensory experiences especially in terms of vestibular, tactile and proprioceptive input. I am currently very involved in this project, guiding and leading from a space of innovation and passion and I am also grateful for SAISI’s support of this project.

I presented this project at WFOT. At WFOT, I also spoke about the research we have completed with children aged between 6-7 year olds. After a play park have been completed educators are trained to use the playground equipment optimally. They gain knowledge on the purpose of each piece of equipment and how it is designed to stimulate occupational performance components that are supported by the sensory systems and sensory integration. We wanted to know what the impact were on the children playing on these play parks and therefore a

research project was completed in 2017 on “The effect of a sensory-motor stimulation programme presented at a low cost, sustainable playground on the development of Grade R and 1 learners” (6-7 year olds). A sensory rich programme, aiming at developing sensory-motor performance components, were presented by educators for only 9 weeks between March and April 2017 (once or twice, dependent on school programme). We had a control school who did not have a playground and the teachers were not trained in implementing these sensory rich programmes and the results from that research is really very promising. We used the BOT-2 and the Adapted Clinical Observations from Jean Ayres for the pre- and post-tests. Results on these tests indicated from a positive trend to statistical significant differences in sensory based developmental factors in the children of the experimental school. An expert educationalist was part of the research team and she did a school readiness test pre- and post-intervention and it was on this assessment that the most dramatic change was recorded. Statistical significant differences were found on 14 of the 21 test items. The school readiness test is much more focused on functional performance whereas as our OT assessments were looking at motor performance and clinical observations. There are currently many schools on a waiting list to build a “Back to Urth playground” but currently we can only do one at a time. I am finishing off my PhD so I will be able to spend more time on this project from the second half of this

year. That is where my energy will go post PhD.

SN: What did your PhD focus on?

Annamarie: I designed a professional Master’s curriculum for sensory integration training within the South African Context using educational design research as a methodology to design a professional master’s degrees in SI for OT’s. Our higher education system has added new qualifications in 2013, of which a professional master degree is one, as we didn’t have a professional master’s degree prior to this. But this degree is specifically focused on service delivery on a specialised level and it is not an academic degree. We are excited about this as South Africa have never had qualifications such as this. I saw the opportunity and decided to design a Master’s degree and it would be the first of its kind in South Africa within the OT field.

SN: In summary, what were your highlights from the congresses?

Annamarie: In terms of WFOT, it was fantastic to listen to all the SI presentations as there was an extensive representation. The ISIC congress focused on more in-depth knowledge as the presentations were that bit longer than WFOT. Spending time with international colleagues who I value and I really look up to and who have meant a lot to me in my career was the most important highlight for me at both congresses.

We would like to extend our gratitude to Annamarie for taking the time to speak to SensorNet. We look forward to following her research and “Back to Urth” project.

ASI 2020 Vision update

Dr. Zoe Mailloux provided a detailed update on goal number 2: Developing an International Test, now named “The Evaluation in Ayres Sensory Integration” (EASI) at the recent International Sensory Integration Congress (ISIC).

The Evaluation in Ayres Sensory Integration® is a set of tests that will measure all the core constructs of Ayres Sensory Integration (i.e., sensory perception, ocular, postural, & bilateral integration, praxis, and sensory reactivity). The tests will be “open access” meaning that appropriately trained professionals (most likely through verified training programmes) will be able to obtain the files needed for making the test sheets, test forms, test manual and other necessary materials for administering and scoring the tests. The EASI is designed to assess children aged 3-12 years and it is hoped that normative data from approximately 100 countries will be collected.

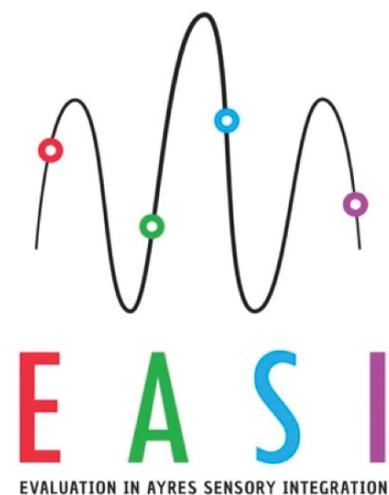
This project is led by the EASI coordinating team, Gina Geppert Coleman, Laura Ruzzano, Sue Troutman, Annie Baltizar Mori, Aja Roley, Shay McAtee and Jenna Koabra. Each region has a regional lead who will coordinate the information-gathering from their area; Kath Smith is the UK and Ireland regional lead.



The next main focus of this project is on the international normative data collection. It is hoped that testers will be enrolled in the training module soon with a start date for testing now projected for September to October 2018. However, the data collection period may be extended into 2019, if necessary. This data collection involves assessing a set number of typically developing children aged 3-12 years from each of the regions. To submit your interest in helping with the EASI, please complete the form at the following link: [👉](#)

If you are unable to commit time to become an international normative data collection tester there are other ways you

can contribute to this project. Volunteers are needed to help with tasks such as organization and communication, data entry and overall team support. Why not join in and make the world an easier place where children are more fully understood!



World Federation of OT Congress 2018



WFOT SI content summary

Education day workshops:

Erna Imperatore Blanche and Gustavo Reinoso:
“Administration and Interpretation of the Structured Observations of Sensory Integration (SOSI) and their Application in Contemporary Sensory Integration Intervention”

The purpose of this workshop was to

- ◆ Present the research that has focused on soft neurological signs.
- ◆ Differentiate between the different types of clinical observations and the settings in which they are used.
- ◆ Emphasise that clinical observations are one type of assessment but must link to other observations that we make. Observations are incredibly important in the assessment process and they are the package that puts everything together. We need to understand the link between our observations and the theory.
- ◆ Explore how we use the data we collect in a systematic manner.
- ◆ Explore how do we interpret what we find.
- ◆ Presentation of the preliminary data from a research project involving 307 Chilean children, in which the clinical observations were standardised.
- ◆ Currently developing a protocol linked to vestibular functions, proprioception, seeking proprioception and linked to either vestibular or proprioceptive functions.
- ◆ Structured observations can discriminate between controls and clinical populations (depending on age, some are more important than others).
- ◆ Administration of the items needs to be standardised.
- ◆ Interpretation of the results needs to be based on the results obtained from one uniform sample in the USA which is currently in process.



Education day workshops:

Tania Stegan-Hanson (OTD, OTR/L, BCP, C/NDT CEIM):
“Getting & Keeping Children on Track in Feeding”



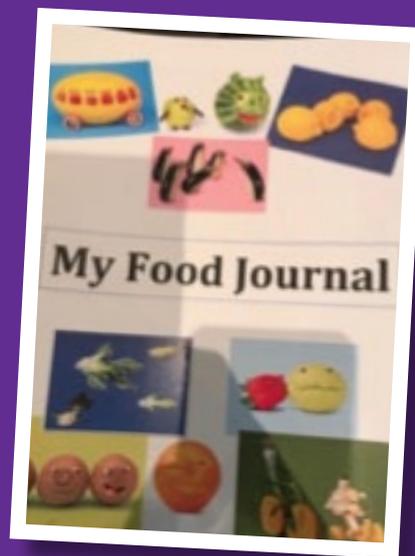
This workshop focused on the treatment of food aversions (a problem commonly seen in children with developmental disabilities) as well as comprehensive treatment planning and family-centred activities for the introduction of new foods with the goal of successful mealtime participation. Delegates were provided with a unique insight

into Tania’s specialised work in the area of feeding. The treatment strategies she uses to address various feeding difficulties were presented through the lens of four different case studies, which made it a practice based workshop. Video footage of the assessment through to the intervention and outcomes allowed delegates to see how

various principles can be applied. The complexity of feeding was broken down into various components – mealtime partnership, nutritional challenges, oral motor coordination, physical coordination, sensory comfort and experiences, fear and trust, gastrointestinal comfort and experience.

Some interesting tips:

- ◆ Have a calm environment for trying new foods such as the use of classical music to set the tone.
- ◆ Use massage around the face working always in the direction of the mouth in order to enhance awareness.
- ◆ Parent education on feeding and the importance of the environmental set-up and behaviour.
- ◆ Sensory based play using food – touching the food as part of an overall activity e.g child moving on the scooter board from one side of the room to the other to put the piece of apple in the pot.



Delegates were each provided with a useful “food journal”, which is a child friendly resource used in conjunction with parents to assist in tracking the trial of new foods, food preferences and components of the sensory experience of feeding. ‘Just take a bite: Easy, Effective Answers to food Aversions and Eating Challenges’, which Tania Stgen-Hanson co-authored with Lori Ernspenger, is a very useful and valuable resource for therapists working in this area.

Summaries of presentations from the WFOT “sensory stream” chaired by Annamarie van Jaarsveld

Stefanie Kruger (Faculty of Health Science, University of Pretoria): “A pilot study to identify sensory integrative dysfunction in children with bilateral cochlear implants in South Africa”



Background

- ◆ The cochlear and vestibular systems are closely interlinked
- ◆ Many of the interventions in children with cochlear implants are on audition and speech
- ◆ Vestibular bilateral integration deficits were identified in children with cochlear implants from the USA (Koester et al, 2014)
- ◆ An additional study in Iran recommended that vestibular evaluations and interventions should be prioritised for children with cochlear implants (Ebbrahim et al, 2016)

- ◆ Occupational Therapists are not typically considered part of the cochlear implant team
- ◆ The aim was to determine the pattern of sensory integrative dysfunction in children with bilateral cochlear implants in South Africa

Methods

- ◆ Quantitative study with a descriptive comparative design

- ◆ South African children aged between 5-8 years with bilateral cochlear implants without any other known diagnosis
- ◆ SIPT instrument used
- ◆ Numerical data was gathered from de-identified SIPT reports (9 SIPT reports)
- ◆ Descriptive statistics were used to analyse SIPT data from South Africa
- ◆ Inferential statistics were used to compare South African results with USA results

Results

- ◆ When analysing the grouping of scores associated with the BIS pattern of sensory integration dysfunction the SIPT subtests of “standing and walking balance” and “oral praxis” proved to be the most problematic
- ◆ Kinaesthesia, sequencing praxis, post rotary nystagmus and bilateral motor co-ordination fell within the at risk group for these children
- ◆ All children scored below the standard deviation for praxis on verbal command

Discussion

- ◆ Children in South Africa with bilateral cochlear implants present with the BIS pattern of Sensory Integrative Dysfunction.
- ◆ There was no significant statistical difference between results from the South African cohort vs USA cohort: Bilateral Integration and Sequencing pattern present in both groups.
- ◆ These findings contribute to the body of knowledge to inform and empower Occupational Therapists to design effective intervention plans for children with cochlear implants, particularly in relation to vestibular-related sensory integrative deficits.
- ◆ Occupational Therapists have a crucial role to play within the Cochlear Implant team
- ◆ Creation of awareness for holistic assessments which include a thorough evaluation of sensory perception and motor performance, including vestibular related function

Anat Drori-Asayag: “Sensory profile of young children with Behavioural Insomnia and Feeding”

Background

- ◆ To investigate the sensory profile of children with behavioural insomnia and children with a feeding disorder in comparison with healthy controls
- ◆ Hypothesis: Sensory processing difficulties are more common in children with sleep and/or a feeding disorder compared with children without such difficulties

Methods

- ◆ 3 groups of children (7-36 months old)
- ◆ Behavioural Insomnia (International Classification of Sleep Disorders)
- ◆ Feeding Disorder (Chatoor criteria)
- ◆ Controls (Attended the well-care clinics for routine periodic medical examinations)
- ◆ Excluded: Children with chronic medical conditions and children with congenital abnormalities / developmental delays

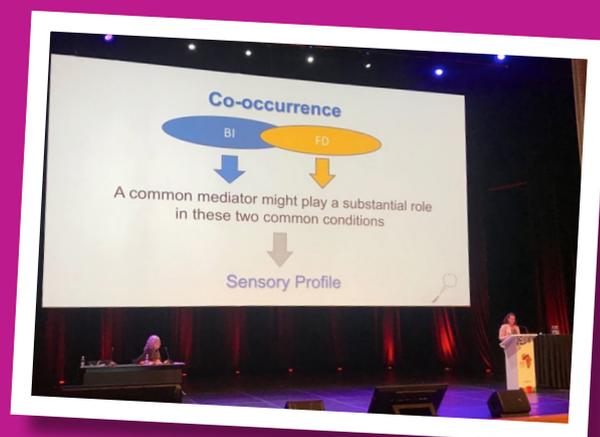
- ◆ Parents were required to complete 2 questionnaires (Demographic and socioeconomic status & the Infant/Toddler Sensory Profile)

Discussion

- ◆ Children with Behavioural Insomnia scored with difficulties relating to oral processing. They demonstrated a low sensory threshold which includes sensation avoiding
- ◆ Children with a feeding disorder scored with difficulties relating to oral processing and auditory processing. They also scored within the low sensory threshold which includes sensory avoiding and sensory sensitivity. This group also scored with low sensory registration

- ◆ Young children with either Behavioural Insomnia or Feeding Disorder were reported to show significantly more sensory difficulties compared with controls

- ◆ These differences may particularly explain the coexistence of the two disorders and might be the cause of their development
- ◆ Parental sensory questionnaires are of great value as a possible target for intervention (in both sleep and feeding disorders)



Nicolette Soler: “Prevalence of sensory and emotional regulation symptoms in Australian Children with tic disorders”

Background

- ◆ Treatment options for children with tic disorders usually involve pharmacological, comprehensive behavioural intervention and/or exposure and response prevention interventions
- ◆ Sensorimotor treatment is often used with neurodevelopmental conditions but not for tic disorders
- ◆ Primary aim of this study was to determine the prevalence of sensory symptoms. It also explored the correlation of emotional regulation with sensory difficulties in children with tic disorders

Methods

- ◆ 163 participants were recruited
- ◆ 103 had tic disorders and 60 were healthy controls
- ◆ The Short Sensory Profile 2, the Sensory Processing Measure and Behaviour Rating Inventory of Executive Function Second Edition (BRIEF 2) were used as assessment measures in this study

Discussion

- ◆ Children with more tic disorders presented more pronounced sensory difficulties as flagged by the two sensory assessment measures used in this study

- ◆ There is a high correlation between sensory and emotional symptoms in children with tics
- ◆ Patients with a tic disorder have increased sensory symptoms
- ◆ Multi-disciplinary team intervention is required for this client group
- ◆ Addressing both emotional and sensory sensitivities is an important consideration



Kerry Evetts (M.OT, UKZN): “Clinical utility of three sensory modulation instruments for children with Autism Spectrum Disorders in South Africa: A practitioners perspective”

Background

- ◆ Assessment tools used by OT’s in SA are developed and normed in first world countries. These results are not always representative of the children in South Africa (Smith et al. 2016; Radameyer & Jacklin, 2013; van Jaarsveld, Mailloux & Herzberg, 2012).
- ◆ This study aimed to establish the practitioners' perceive on the clinical utility of three sensory modulation measures to ascertain the acceptability, accessibility, practicability and appropriateness for use with South African children with ASD.

Three assessment measures were selected:

1. The Sensory Experiences Questionnaire version 2.1 (Baranek et al., 1999)
2. Sensory Processing Measure Home Form (Parham & Ecker, 2007)
3. Sensory Profile (Dunn, 1999)

Methods

- ◆ Cross sectional, descriptive survey design
- ◆ Participants – OT’s who were members of SAISI
- ◆ Completed SASIC Level 3
- ◆ ASD experience
- ◆ Final sample size= 31

The tools were scrutinised for the following:

- ◆ Appropriateness
- ◆ Accessibility
- ◆ Practicability
- ◆ Acceptability

Discussion

The following has been recommended in utilising self-report sensory modulation measures in children with ASD in South Africa

- ◆ Translation into the caregivers' home language
- ◆ Explanations/culturally appropriate terminology used to enhance understanding
- ◆ Measure may be used to guide an interview but not as a valid assessment tool
- ◆ Development of a South African specific non standardised sensory screening measure which can be readily reproducible in several local languages is recommended
- ◆ SPM had the highest clinical utility and is recommended for use in the assessment of children with ASD in South Africa with recommended changes



Megan C Chang (PhD, OTR/L, San Jose State University, CA, USA)
“Relationships between Sleep Quality and Sensory Processing in US community Dwelling Older Adults”

Background

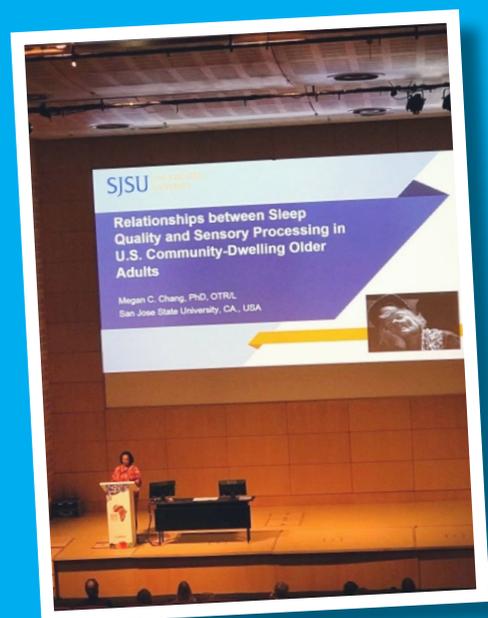
- ◆ Sensory processing difficulties are known to relate to poor function in children but there is limited evidence available for older adults.
- ◆ Older adults notice sensory input significantly less than young and middle aged adults.

Methods

- ◆ Survey study
- ◆ Participants – community dwelling adults aged 60 years and over living in US
- ◆ Assessments- used Adult Sensory Processing Scale (ASPS; Blanche, Parham, Chnag & Mallinson 2014) and Pittsburgh Sleep Quality index (PSQI; Buysee, Reynolds, Monk, Berman, & Kupfer, 1988)
- ◆ 45% of participants (n=106) had PSQI global scores above 5, indicating that they were considered poor sleepers.

Discussion

- ◆ Preliminary results showed that some sensory processing patterns are significantly correlated with sleep quality.
- ◆ Older adults who are over-responsive to auditory and vestibular input or under responsive to proprioceptive-vestibular input, OT can help address daytime activities and sleep routines in order to reduce daytime dysfunction.
- ◆ When compared to adult norms, older adults have significantly higher scores in all sensory factors, except for proprioceptive seeking. Results suggest that norms for sensory processing in older adults need to be developed and there may be sensory preference changes in older adults.
- ◆ It is important for therapists to address the sensory needs of clients during sleep consultation for community dwelling older adults, particularly in auditory processing and proprioceptive-vestibular input that affects postural-motor abilities.
- ◆ Further research is needed to explore interaction effects of culture, sensory processing preferences and quality of sleep.



Rachel Snodgrass (MOT, OTR/L; Joanne Estes, PhD, OTR/L; Marisa Grimes, Amanda McClellan, Alison Miller, and Sarah Rudolph): “Trauma, Sensory Processing and the impact of Occupational Therapy”



Method

- ◆ Retrospective chart review of the Adverse Childhood Experience (ACE) and Adolescent/Adult Sensory profile (AASP)
- ◆ Prospective staff survey on the perceptions of impact on skills and behaviours

Discussion

- ◆ Consistent with findings of Cornell (2015) and Kaiser et al. (2010), but inconsistent with prior correlational evidence
- ◆ 72% of youth exhibited abnormal sensory systems
- ◆ 91.2% of youth had an ACE score >3, as compared to 14% in the general population

- ◆ Sensory-based OT is beneficial: Clinical significance despite statistical insignificance.
- ◆ Limitations: design, sample size, restricted data and assessment tools. Difficult to research due to ethical concerns.
- ◆ Continued research is needed

Ann Nielson (Master of Science in Health, Occupational Health): “The sensory profile of children in Danish primary school”

Background

- ◆ To investigate and describe the prevalence of sensory processing difficulties in children attending Danish primary schools
- ◆ To explore possible cofactors such as gender, participation in sports outside of school or parents level of education

Method

- ◆ Short Sensory Profile conducted on 367 children both male and female

Discussion

- ◆ 21.3% out of the 1721 children showed sensory processing difficulties
- ◆ An additional 22.4% might be at risk of having sensory processing difficulties
- ◆ In 2012, in Puerto Rico, Roman Oyala & Reynolds found that 19.9% of children have sensory processing difficulties with no significant link to the household income

- ◆ Both studies found that the subgroup of the SSP where most children had definite difference was regarding under-responsive/sensory seeking behaviour (Danish 32.79% and Puerto Rican = 38.3 %)
- ◆ Knowledge of how many Danish school children might have sensory processing difficulties
- ◆ Awareness of an issue that the Danish school system could benefit from addressing

International Feature Interview: Dr. Antoine Bailliard



Dr. Antoine Bailliard

Dr. Antoine Bailliard is Assistant Professor of Occupational Therapy at the University of North Carolina at Chapel Hill (UNC-CH). As an OT, he has worked in inpatient and community psychiatric settings. His research focuses on the impact of mental illness on community integration, social participation, and engagement in activities of daily living. Dr. Bailliard is a research fellow at the Community Outcomes Research and Evaluation Center (COREC) within the North Carolina Psychiatric Research Center (NCPRC). He is also a consultant and trainer for the Institute for Best Practices at the Center for Excellence in Community Mental Health at UNC-CH.

Antoine presented at WOFT 2018 on “Bridging Neuroscience, Function and Intervention: A Scoping Review of Sensory Processing and Mental Illness”. His results indicated that neuroscience studying the relationship between atypical neural sensory activity and mental illness is rapidly expanding. These studies typically research unimodal sensory processing and do not link findings to functional participation. Research in occupational therapy has predominantly focused on the efficacy of sensory rooms in inpatient psychiatric settings. There is a significant gap in research exploring how atypical

sensory processing in adults with mental illness affects occupational performance. Further research is needed to inform the development of person-centered evidence-based sensory interventions that are attuned to different diagnoses and intervention settings.

We caught up with Antoine to hear more about his research in the area of sensory processing and mental health.

SN: Can you provide a brief summary of your WFOT presentation?

Antoine: My presentation was a scoping review of research on the sensory processing of adults with serious mental illness. The review

was published in the *American Journal of Occupational Therapy (AJOT)* in Volume 71. Due to the breadth of literature addressing this subject, we only included articles from peer-reviewed journals in our review. We found a vast amount of literature in neuroscience using various brain imaging methods to unequivocally demonstrate that adults with serious mental illness experience trait sensory processing deficits in auditory processing (namely sensory gating and mismatch negativity). Research also found deficits in visual, olfactory, and proprioceptive processing – although the quality and quantity of that evidence was not as strong.

In occupational therapy, we found few studies and the majority of these used the Adult/Adolescent Sensory Profile. There were too few studies to be conclusive, however, the evidence suggests that this population experiences higher scores in *low registration* and *sensation avoiding*.

SN: Based on your key findings – how do you propose that we progress research in the area on sensory processing and mental health?

Antoine: There is a significant gap in the literature exploring how sensory processing challenges impact everyday living and occupational performance. More research is needed to understand the real-world impact of these issues to inform the development of interventions that target participation in occupation in a meaningful way.

There was also a significant gap in research testing the efficacy of sensory-based intervention in psychiatry. Of the very few studies that discussed intervention, we didn't find any guidelines or protocols to assist therapists in determining what types of interventions would be most effective for clients. More research is needed to test sensory-based interventions in occupational therapy to provide an evidence-based rationale for targeting sensory processing in mental health.

SN: You spoke about the sensory subtypes associated with various diagnoses – can you expand on this?

Antoine: The majority of this research has been conducted with the Adult/Adolescent Sensory Profile. Per the limited research in occupational therapy, this group tends to have high scores in low registration and sensation avoiding and lower scores on sensation seeking. Adults with OCD are found to have higher scores on low registration, sensory sensitivity, and sensation avoiding. Adults with Bipolar Disorder tend to have higher scores on sensation avoiding. Adults with a major affective disorder were twice as likely to experience atypical sensory sensitivity, sensation avoiding, and low registration. They were also five times more likely to experience lower scores on sensation seeking. It is important to note that there is insufficient research in this area to be conclusive; however, existing research does provide some direction in understanding the sensory experiences of adults with serious mental illness.

SN: You spoke about the auditory hyposensitivity in people with schizophrenia – what does that mean for this client group?

Antoine: The most significant finding of our scoping review was the predominance of evidence in neuroscience that describes auditory processing deficits in sensory gating and mismatch negativity for this client group. It implies that this group has difficulty filtering out extraneous

auditory stimuli and detecting subtle changes in consistent auditory stimuli. Functionally, this has been associated with deficits in identifying changes in tone (affective prosody), difficulty detecting sarcasm, and difficulty filtering out sounds in noisy environments. Together, these findings suggest that this client group will experience tremendous challenges with social participation in noisy environments, detecting subtle social cues conveyed via tone, and difficulty in determining the intentions of their conversational partners. Ultimately, these sensory processing issues may present a significant barrier for this group to develop intimate relationships and participate in social events – particularly those in noisy environments.

SN: What SI intervention strategies are currently used in mental health settings? Are these evidence based?

Antoine: We didn't find any SI intervention strategies being used in mental health settings. We found a couple of studies which suggested that sensory modulation programmes were effective; however, the studies had small sample sizes and did not describe the protocols used with their participants. There is a tremendous need for clinicians and researchers to contribute evidence in this area. We found some research in OT and nursing that suggests the deployment of sensory rooms (such as Snoezlen rooms) in inpatient psychiatry was associated with reduced incidence of seclusion and restraint.

SN: What is your opinion on the importance of SI training for OT's working in mental health?

Antoine: Given the strong evidence that auditory processing deficits exist for this population, it seems essential that therapists interested in working in psychiatry should be trained in understanding how those deficits impact function and how to address those deficits in intervention. However, as indicated above, there is a significant need to expand research in this area to provide the necessary evidence for such training to be accurate and effective.

SN: Can you advise on any particularly useful resources for practitioners looking to learn more about sensory processing in mental health?

Antoine: Sadly, there are not enough resources in peer-reviewed journals. It is very important for therapists to base their understandings and interventions on evidence; the latter is currently lacking. I encourage your readers to read our review in the *AJOT* as it is our humble attempt to translate some of the existing research in neuroscience for practitioners.

SN: You mentioned an exciting new research venture – can you tell our readers more about this project and what it involves?

Antoine: We are currently recruiting participants with psychotic disorders to explore the impact of their sensory experiences on their participation. We will administer the Adult/Adolescent Sensory Profile, a measure of participation, and two instruments to measure symptomology. We will also engage in photo-elicitation and video-elicitation with our participants to collect data on their real-world experiences of how sensory experiences impact their participation in occupation. We hope this will help fill the gap in the literature regarding the impact of sensory processing issues on the occupational participation of this group. We also hope this study will allow us to identify intervention targets that are meaningful for our clients.



WFOT delegates listening to Antoine's presentation on sensory processing and mental illness

Practice Based Feature: Using OT-SI - A Client and Therapist's Story



In this unique article, we hear both the client and therapist's perspective of the outcome of Occupational Therapy intervention, in which a Sensory Integrative approach was adopted. Jen gives us an insight into what it is like as an adult to live with Sensory Integration difficulties.

I first became aware of sensory processing difficulties (as I now know them) when I was 28 and investigating why my life kept crashing around me. On the surface I had achieved well with a good education, a progressing career, a social life and relationships. This masked a much more tragic truth.

In reality I had struggled terribly to achieve what I had. Poor self esteem and confidence was shored up with unhealthy habits like low level drug and alcohol consumption, control issues that manifested as intermittent self harm, and eating disordered patterns of behaviour. I kept hearing the same words in all domains of my life: selfish, difficult, arrogant, fussy and rude. I kept experiencing the same negative outcomes: verbal warnings at work, friends blanking me for no reason and relationships ending badly. This was highly distressing and detrimental but

it never affected me so badly that I was unable to function on a daily basis.

All this changed when I became pregnant, aged 29. I was settled in a relationship and everything was planned - the time seemed perfect. Other than severe pelvic pain, my physical health was fine, but my mental health was very different. By the time I had progressed to thirty-six weeks I was under the care of the perinatal mental health team and had been admitted to a mother and baby inpatient unit by the time my son was five months old, where I remained for three months. I was suicidal and ended up experiencing a poor understanding of my needs, which exacerbated an awful situation. Ultimately, this and the experience of parenthood motivated me to seek the truth about myself and my experience. Going back to the old ways of coping was not possible so I had to find the root cause to move forwards.

I am able to reflect with far greater insight into what happened to me. The experience of a rapidly changing body, together with hormone surges and the alien movement of my baby triggered eruptions of sensory processing difficulties that had remained previously undetected, or just put down to me being 'difficult'. When my son was born, the structure of my life collapsed. I had a traumatic and prolonged birth, which left me exhausted and ill-prepared for the demands of newborn care. Introduce the lack of sleep and sensory issues with the smells, noise and tactility of a young baby and I experienced a perfect storm of mental distress.

As my son aged, I was told things would get easier, but for me they were worse. At a year old, the sensory storm that was my child now gained the ability to climb, walk and follow me. A prolonged

mental health crisis ensued, with another two hospitalisations, and eventually a diagnosis of high functioning autism, aged 33. The recommendations included Sensory Integration Occupational Therapy, which I was also told was not available to me through commissioned services because I had no learning challenges.

Recovering and returning to some semblance of normality has become my obsessive interest. I found a way to access the recommended sensory integration occupational therapy via a new form of healthcare commissioning called a Personal Health Budget, which allows individuals with long term conditions to take control and personalise their care and support. I successfully applied for an assessment, course of treatment and further interventions that my Occupational Therapist, Alison Harris, suggested to improve my functioning.

To say that the difference has been transformative would be an understatement! Alison used a whole family approach, including my partner, my son, my wider family and my formal paid supporters in the therapeutic process. Although the commissioned work was around sensory processing, we naturally explored other areas of functioning as Alison's skill at working with autistic individuals extends into many domains.

I have subsequently outperformed all estimations about how much support I have needed. After hanging about with secondary mental health provision for five years I was discharged after six months of Sensory Integration work. My family and I, with this input, can enjoy a quality of life together. I have resumed my identities as a partner and a parent, and have begun studying for an MSc in mental recovery and social inclusion. I am also exploring a return to work.

Addressing my sensory distress and increasing my insight into my needs was instrumental in returning to a state of wellness. I am now better at self care than I ever could have hoped to be had I not travelled the path my mental health and autism led me down.

Currently, I am working in healthcare to improve understanding and awareness of the importance of work such as

Sensory Integration input and Occupational Therapy in mental health, not only for those with neuro-divergent conditions but also people with different kinds of distress. As the number of adults with an autism diagnosis increases, the need to support us to contribute and live well will become far more important than curing us. We need to develop better skills for living and bridge the gaps in understanding that exist, firstly within ourselves and also with others in our lives, from our families to the professionals who work with us.

Alternative therapies, such as SI Occupational Therapy, are crucial in achieving this, and I hope very soon to be hearing of more examples where autistic adults like me can derive the benefits I have reaped so gratefully.



The OT perspective



Alison Harris

Being able to adapt my practice and focus on working with an adult without the usual access to a sensory room and all its fun, was a challenge, but one which Jen was keen to pursue.

A full assessment identified many issues with sensory processing and dyspraxia. Jen's difficulties were pervasive and affected everyday life, also fuelling distressing mental health crises that impacted on the whole family.

Jen has sensory modulation difficulties with touch, light, smells and noise. She was easily overloaded in busy situations and became very stressed when she could not manage her environment. We approached change from an external aspect, looking at her home environment, her need for withdrawal and modification in expectations of her during the day together with working actively on self regulation.

Jen was very up for this – being

a huge proprioception and vestibular seeker.

We developed GAS goals and a daily structured plan. Initially, this was essential to keep her on track and record what she was doing. We developed a sensory diet that included proprioceptive activity and womb space withdrawal time. Jen enthusiastically engaged in this process taking on board all advice. She bought a FitBit which helped her track her steps and prompted her to move when she had been sedentary for too long. Over time, activity included yoga and meditation, deep pressure massage, aerobic exercise, hula hooping in the living room, carrying her son up and down stairs, biking with him to school and digging the allotment.

After more regular sessions, we then met every two months, and intervention is coming to a conclusion after twelve months. One of the biggest factors in the success of the programme was Jen's understanding and knowledge about sensory processing. She researched and read extensively and her level of awareness increased rapidly. This helped her develop insight into how to adapt her sensory lifestyle to meet the changing needs of the seasons as well as her fluctuations in needs. Jen is now becoming an ambassador in our community – campaigning for Occupational Therapy and Sensory Integration in adult mental health services and working hard to educate professionals who are less aware of the needs of adults who are on the Autistic Spectrum.

Early Adopter of SI: Dr. Sidney Chu



Dr. Sidney Chu

Welcome to part 3 of our feature series: Early adopters of Sensory Integration. For this edition, we spoke with Dr. Sidney Chu about his significant contribution to the development of Sensory Integration in Ireland and the UK. Sidney tells us about his career history to date and how his interest in Sensory Integration developed.

SN: What sparked your clinical interest in Sensory Integration?

Sidney: I first encountered the concept of Sensory Integration (SI) in my Occupational Therapy (OT) undergraduate training in 1979. Then, this body of knowledge was not widely publicised and there was much misconception about what SI meant and confusion of SI with other related treatment approaches e.g. sensory stimulation, perceptual-motor approaches. With my “questioning” mind, I read Dr Ayres’ books on “Sensory Integration and Learning Disorders” first published in 1972, “Sensory Integration and the Child” published in 1979 and many of her research studies published in the American Journal of Occupational Therapy. I found her theory of SI fascinating and useful in understanding certain behaviour and performance problems presented by children I

worked with.

My first OT job was working in a voluntary organisation in Hong Kong, providing community services to children with various developmental problems. Ayres Sensory Integration (ASI) was consistent with the process-oriented (bottom-up) treatment approaches used by many therapists at that time.

SN: Tell us about your SI career to date

Sidney: I have a long history of involvement in the field of sensory integration theory and therapy. I was first trained in Sensory Integration Therapy (SIT, now trade marked as ASI® in 2007) when I worked in Hong Kong. Elaine Wilson, an Australian OT trained by Dr Ayres, came to Hong Kong in 1983 and 1984 to deliver different stages of SI courses recognised by the Centre for the Study of Sensory Integrative

Dysfunction (CSSID – later it became the Sensory Integration International – SII). I was trained to use the Southern California Sensory Integration Tests (SCSIT) to evaluate sensory integrative functions/dysfunctions in children with different developmental problems.

After completing my training in SIT/ASI, besides applying it in my clinical work, I was very active in promoting the theory and practice of this treatment approach through undertaking presentations on SI to parents, other therapists and also publishing articles in Hong Kong, e.g. 

I attended the 8-week Bobath Course at the London Bobath Centre in August 1986. I then moved to the UK in March 1987. Back then, there were hardly any formal SI-trained therapists who were qualified to use the SCSIT.

There was also confusion in the differences between SI, sensory stimulation and perceptual-motor approaches. I presented a talk on SIT at the Institute of Child Health Conference in London. Many therapists in attendance expressed an interest in learning more about the Ayres' SIT. I started to disseminate information on SI through short courses, seminars and publications e.g. 

With the publication of the Sensory Integration and Praxis Tests (SIPT), all therapists who were trained in SCSIT needed to go through the new course structure developed by the Sensory Integration International (SII). I went to the USA several times to complete the following components of the SII SI Certification in 1989:

1. A Neurobiological Foundation for Sensory Integration – the Theory Course
2. SIPT Test Administration Course
3. SIPT Test Interpretation Course
4. SIPT Test Observation
5. Treatment of Sensory Integrative Dysfunctions
6. Competency Examination – 250 multiple choice questions

Given the importance of having internationally recognised training for therapists in the UK, I collaborated with the SII to run the first SII Theory and Treatment Courses in December 1990, at the Northwick Park Hospital (London) and at Trinity College (Dublin). I assisted in teaching these courses with Susan Young, a SII course instructor. Over 100 therapists

attended the courses in London and about 40 therapists attended in Dublin.

SN: Share with us about your contribution to the development of SI in the UK?

Sidney: After the first SII courses in the UK, I worked with many enthusiastic therapists to establish the British Institute for Sensory Integration (BISI) in 1991, promoting the international standards in the education, practice and research of SIT/ASI. I was the BISI chairperson for many years, it was a non-profit making organisation with a large multi-disciplinary membership. Profits generated from courses were used to develop services and member benefits e.g. BISI created a library of books and reference materials related to SIT, offered sponsorship for therapists to attend courses in the UK and conferences in the USA, and purchased 15 SIPT kits for therapists to use when they were going through the SIPT training. BISI also published a quarterly newsletter to update members on new developments and shared clinical knowledge and case studies.

BISI successfully organised several SI certification courses through collaboration with the SII. I was one of the main course instructors from the UK to work with a SII course instructor for all the courses. BISI also developed a programme to train other therapists to deliver the courses. At that time, therapists needed post-graduate training in Statistics, Test and Measurement to meet the requirement for

attending the SIPT training courses. I collaborated with the Psychology Department at City University (London) to develop a bespoke 5-day course to help therapists meet this requirement.

As part of the SIPT training, participants had to attend an observation session on their administration skills. I was trained to be a SIPT Observer for therapists going through the UK training. BISI added another requirement for therapists to complete a case study by using the SIPT to enhance their clinical reasoning skills in interpreting the SIPT data with information generated from other assessment procedures.

One of the BISI Executive Committee Members was an OT lecturer at the University of Liverpool. Through his input, BISI collaborated with that university to set up validation of all the BISI-SII courses as master degree modules, leading to different levels of recognition e.g. certification, diploma and master's degree. My role involved setting up the module validation, marking scheme and examination assignments.

BISI, in partnership with other organisations, organised many courses by inviting different therapists / researchers from the USA e.g. Winnie Dunn for her Sensory Profile course, Patricia Wilbarger for her Sensory Defensiveness course, the Alert Programme, MORE, SI and Early Intervention, and various courses by Georgia DeGangi on her work with infants with different sensory

regulatory disorders (fussy baby). In addition to the SII SIPT Certification Courses, I also developed and delivered additional SI-related courses with other OTs, to meet local needs e.g. a SI introductory workshop, courses on Ayres' clinical observations for the evaluation of SI, use of alternative assessment procedures for the evaluation of SI, applying SI theory and treatment principles to adults with learning disabilities, including the use of the Sensory Integration Inventory, and later a 3-day course on assessment and treatment of children with sensory modulation disorders etc. I also contributed my knowledge in SI by presenting talks and publishing articles and chapters in books. For example: 

I completed my MSc in Health Psychology in 1994/5. In my master's degree research, I used the SIPT to assess mainstream school children referred to my service to examine the nature and incidence of SI dysfunctions in comparison with a control group. It was the first research using the SIPT in the UK. The results of this research were published in the British Journal of Occupational Therapy in 1996. 

I started my PhD in 2001 to develop a model of OT practice for children with Attention Deficit Hyperactivity Disorders (ADHD). During the final stage of my PhD in 2004/5, I undertook a multi-centre outcome study to evaluate the effectiveness of a multi-faceted evaluation and intervention package for children with ADHD. I trained 30 therapists to implement a research protocol locally. SI

/ Sensory-based Interventions were part of this evaluation and intervention package. The results of this study were published as a two-part article in the British Journal of Occupational Therapy in 2007. 

Dr Lucy Milller and her colleagues formally introduced the nosology of sensory processing disorders (SPD) in 2007. Although there are still disagreements in the field on the use of SPD (versus Sensory Integrative Dysfunction), it highlighted the importance of addressing sensory modulation disorder in clinical practice. I developed a three-day course on "Assessment and Treatment of Sensory Modulation Disorder (SMD) in Children with Different Developmental Disorders" in 2003 to help therapists acquire in-depth knowledge and clinical skills in the assessment and treatment of this subtype of SPD; many children referred to our services do have SMD. I have presented my SMD courses numerous times in different parts of the country and in the Republic of Ireland, Hong Kong, Singapore and Malta. The course content is updated continuously with new research data and new developments in the theory of sensory modulation. I had an article published in SensorNet in 2009 on the multi-faceted intervention model for SMD. 

In March 2015, I was invited to present on differentiating ADHD and SPD at the National Child Health Conference for Paediatricians in London as there were difficulties in differentiating these two distinct but also co-

existing diagnostic conditions. In November 2015, I was invited to present an expanded version of this talk as a keynote lecture at the OT Show in Birmingham entitled "ADHD and SPD – Differential Diagnosis and Comorbidity".

As increasing numbers of therapists and psychologists wanted to learn more on this topic, I developed a half-day seminar and wrote an article, which was submitted to the Children, Young People & Families Occupational Therapy Journal. 

As there is ongoing confusion in using the terms ASI, sensory integration treatment, sensory-based interventions, sensory integration and sensory processing, sensory integrative dysfunctions and sensory processing disorders, I wrote an article to clarify these concepts. This was published in 2016 in the Children, Young People & Families Occupational Therapy Journal. 

In this article, I compared ASI and different sensory-based interventions e.g. sensory diet programme, the use of sensory tools, environmental adaptation, the Wilbarger's Protocol, Therapeutic Listening Programme, the Astronaut Training Programme, the MORE and the three sensory-cognitive programmes: the Alert Programme, the Zones of Regulation, and the Sensory Stories. As more therapists wanted additional knowledge about these concepts together with current SI developments, I provided another half-day seminar to discuss these issues. I presented this half-day

seminar in Hong Kong (May 2017), and again in Derby (November 2017), organised by the National Centre of Rehabilitation Education (NCORE). In this seminar, I clarified the use of these terms and concepts in clinical practice. I also provided updated information related to the ASI 2020 Vision, the new ASI course structure from an international perspective, the development of the Evaluation in Ayres Sensory Integration (EASI) and the Sensory Processing Three Dimensions (SP-3D) Scale.

In January 2016, I was awarded a Fellowship by the Royal College of Occupational Therapists (RCOT) in the UK. It is the highest honour that the RCOT can bestow on one of its professional members. The award was presented to me by Princess Anne in London. It was to recognise my significant contribution to the profession and the society as a whole. My contribution to the development of SI in the UK is obviously part of this recognition. I am currently a member of the advisory panel of the Hong Kong Sensory Integration Society (HKSIS).

You are an honorary member of Sensory Integration Education UK & Ireland – how did this come about?

Sidney: In 1997, Sensory Integration Education – UK and Ireland was established after months of collaborative work through the Sensory Integration Coordinating Committee (SICC) formed by members from the BISI, the Study Group of Perception, the Irish Sensory Integration Association and the

Sensory Integration Association. I had been given the status of honorary member to recognise my contribution to the development of SI in the UK. Through the merging process, BISI contributed all the reserved funds, library of books and resources, and all SIPT kits to Sensory Integration Education. Some of the BISI executive committee members were involved in forming the new Sensory Integration Education Executive Committee. Sensory Integration Education continued the collaboration with SII to run the certification courses for a short period of time until the USC/WPS SI Certification Courses were in place.

Do you use Ayres SI in your current practice? How has SI influenced your clinical practice?

Sidney: I used Ayres SI theory extensively in my clinical practice before leaving my NHS job (August 2014). I now run my own company providing consultancy and training to therapy, medical, educational and psychological professionals in different clinical areas (including sensory integration / sensory-based interventions) in paediatric practice.

Clinically, I find that the concept of sensory integration helps me to understand the relationship between sensations, brain function, behaviour and functional performance, but I also recognise there are other reasons for the child's presenting functional problems. ASI provides a method for measuring

observable features of sensory integrative functions/dysfunctions together with treatment principles for designing interventions to address these underlying dysfunctions.

I also use the knowledge in service development (e.g. integrating the concepts of SI into the child's learning environment through a 3-tiered school-based model of service delivery) and education for parents, teachers and other professionals so they can support children with sensory integrative dysfunctions in real life environments.

After applying ASI in clinical practice for over 35 years, I have learned the importance of delivering services underpinned by family-centred care practice with treatment strategies integrated into the child's home, school and various community environments. It is also important to integrate ASI with other treatment approaches to provide a holistic, individualised and outcome-focused service meeting all the needs of children and families. Therefore, I tend to combine various bottom-up and top-down treatment approaches in my



clinical practice, underpinned by the family-centred care approach.

What is your current view on the state of SI in the UK?

Sidney: Sensory Integration Education has done an excellent job promoting the education and practice of ASI in the UK. However, specific intervention methods called sensory integration vary widely across practice areas and clinical settings. There is also misconception that any “sensory” techniques used are “sensory integration”. Therefore, it is important to clarify the differences between ASI and other sensory-based interventions (SBI) and use appropriate terms in various documents and titles of courses. Nevertheless, this does not mean other SBI are not important and useful in clinical practice. Therapists who want to engage in post-graduate training in the “SI” field should be given information to make an informed decision on what they want to learn. It is important for Sensory Integration Education to take a leading role on this.

Therapists using ASI in clinical practice should adopt different best practice guidance to ensure effective service delivery e.g. child- / person- / family-centred care practice, an interdisciplinary approach, and an integrative model of service delivery. Furthermore, therapists should understand the concepts of proximal and distal outcomes in the SI treatment processes, be able to set SMART functional goals by using the collaborative goal setting

process and ICF Model, and apply appropriate outcome measures/ methodologies to evaluate the effectiveness of treatment e.g. the Goal Attainment Scaling (GAS). Therefore, training for therapists should also cover this best practice guidance.

Another area of development is research into the clinical effectiveness of ASI within the UK health and educational systems. The Ayres Sensory Integration Fidelity Measure (ASFIM) has given us a means to ensure our clinical practice adheres to ASI theory. UK therapists and researchers should work together to conduct more research studies to demonstrate ASI as an effective treatment method.

What is your opinion on the future of ASI Education?

Sidney: Since the discontinuation of the USC/WPS SI Certification Courses in 2016, an International Council for Education in Ayres Sensory Integration (ICEASI) was established to develop standards of training and practice in ASI. It is good to know that the UK is involved in the standardisation of the Evaluation in Ayres Sensory Integration (EASI). When it is completed in 2020, UK therapists will have access to this new, cost-effective and internationally standardised assessment package, which is consistent with the current thinking in the ASI theory. However, further work will need to be done to unify the standard of training internationally (including the qualification of trainers) as

different countries still have their own structure of training courses.

Any additional comments on your inclusion as an early adopter of SI?

Sidney: The dynamic interaction between different SI organisations in the past has created a successful pathway for the development of ASI in the UK. I am honoured to be part of this success. 🚀

Dr Sidney Chu

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Feature interview

Janine Van Der Linde, is a South African Occupational Therapist and is currently making waves within the SI research context. Janine presented at both WFOT and ISIC on her development of an SI screening tool which is culturally relevant within South Africa.



Janine Van Der Linde

SN: Tell us about your career to date:

Janine: I completed my Occupational Therapy undergraduate degree, then did my sensory integration training. Annamarie van Jaarsveld is a key figure within the SI field and inspired me to study sensory integration.

I moved to the UK where I lived and worked for three years. For the first two years I was a locum in community paediatrics. In the third year, I worked at a school for children with speech and language difficulties and ASD. I then returned to South Africa, and began working in a government hospital, which is equivalent to the UK NHS trusts. In that role, I worked with people who had mental health difficulties, physical rehabilitation and long term care for severe and profound

intellectual disabilities. I was head Occupational Therapist and case manager for physical rehabilitation but I was involved in the paediatric mental health clinics that were run for ADHD and other developmental difficulties.

I completed my Master's degree and got involved with the SASI board. From there on, about 5 years ago, I moved to the University of the Free State. I lecture in Occupational Therapy postgraduate paediatrics and I am involved in e-learning. I enjoy my role as an educator, as I have seen firsthand the effect of a lack of awareness or knowledge of sensory integration can have on a child's treatment. When so much is missed about the child. I want to be involved in educating Occupational Therapists on sensory integration and how it can influence the child. It is a very different role to clinical practice.

SN: Tell us about your PhD:

Janine: I worked in a public hospital, the only place where children from low socioeconomic areas can have access to Occupational Therapy services. When working there, I realised these children have numerous sensory integration problems but these were not picked up easily because most of the services were provided by newly qualified therapists with only a basic knowledge of SI. This meant they were often missing the underlying SI difficulties. My PhD was based on developing a screening tool that newly qualified Occupational Therapists can use to identify these children in communities. With the postgraduate students that I teach, we try to involve them in the communities to teach them more about the effect of socio-economic environments on sensory integration.

SN: Is research in sensory integration promoted for clinicians in South Africa?

Janine: It's encouraged but not really possible. Many therapists practising sensory integration are in private practice settings so if they don't work they don't get an income. It's sometimes difficult for them to get involved in research.

SN: What is the state of Sensory Integration Education for therapists in South Africa?

Janine: SI education in South Africa is done through SASI, who are responsible for all the SI training - this is managed by the SASI board. The courses involve a mix of theory, the SIPT administration until the EASI is released, interpretation and clinical reasoning, then intervention and the fidelity measure. We also try to do workshops depending on the needs of the therapists. These courses are facilitated through the various cities within South Africa, which provides people with access to training, wherever they are located. The uptake on these courses has increased dramatically; often we have waiting lists for the courses. As therapists start to work, they are required to have SI training. The information and knowledge on SI has improved and the awareness of SI amongst the MDT has resulted in more therapists being trained in SI.

SN: You must be very proud that WFOT & ISIC were held in SA this year? You were involved in the ISIC congress committee – tell us about your involvement in organising the first international SI conference.

Janine: Yes, we were thrilled to be chosen as the host country. It makes it easier for delegates also when the congresses are on in the same place. I was on the scientific committee for the ISIC, which helped with looking for speakers and developing the programme. I also helped with some of the technology like the website design and the registration forms.

SN: How was the ISIC theme chosen?

Janine: We reverted back to the literature and the research article by Dr. Roseann Schaaf, "State of the Science: A Roadmap for Research in Sensory Integration". This identified three pillars (practice, advocacy, and education), which are built on the foundation of research and serve as supports for advancing future research in sensory integration. We felt this would shape the ISIC theme very well and reflect the key objectives.

SN: The ISIC programme was very diverse and you had an opportunity to present your research. Can you tell us more about the screening tool you developed?

Janine: The screening tool was developed in three phases. The first focused on looking for test

items. I worked with SI experts in South Africa to help me develop those test items. I also had to ensure that the test items were of relevance to children from low socio-economic areas e.g that would fit with their language and culture. So, that's how the first phase was developed; we looked at the items then we decided on six activities that we would use for observations. We used activity analysis to develop these activities further and the screening instrument developed into something where the therapists (newly qualified not trained in SI) could make observations from the activities then score these numerically. These activities were based on giving information about a child's sensory integration such as sensory discrimination, postural ocular, bilateral integration sequencing and praxis and sensory modulation. The second phase involved piloting the screening tool with 200 children from low socio-economic areas, then we analysed the items to



filter out which worked well and which didn't. Following this refinement, the third phase involved psychometric testing to see if it was valid, if there were any corrections with the SIPT and if it would be sensitive and specific to sensory integration difficulties.

SN: Did the new qualified therapists who were targeted enjoy and engage in the pilot process?

Janine: They were really excited about it as they reported it was easy to do and the observations were easy to score. They especially liked that the children enjoyed the screening instrument as there weren't many difficult activities that they had to do.

SN: Have you plans to publish this research?

Janine: Yes definitely, I would like to test it out on a wider range of children then refine it further. Currently, the screening tool is targeted at children aged 5-7 years because those are the children starting school who are then identified as having problems. In the South African community, they are often not picked up earlier, meaning this is often the first time they are seen by an Occupational Therapist. The plan is later to do it for younger ages, but for now, I want to target the 5-7 age group that we can access.

SN: Tell us about the use of SI in diverse populations in South Africa?

Janine: Currently there is a great need for Sensory Integration within mental health. It is becoming increasingly popular within that setting and the mental health area is really growing. We just had Kath Smith over to SA to do a workshop on mental health in SI. She also presented at the congress. The use of Sensory Integration in physical rehabilitation is starting to be considered, although that is something that is still developing. On the SASI board we have a specific portfolio on diverse populations, which we are continuing to develop.

SN: What is your opinion on the current state of research in the field of Sensory Integration?

Janine: I think the current research is very exciting because we are gathering more scientific evidence that we can use to promote SI and why we do it. I think there is more funding becoming available for research in SI.

SN: What were your highlights from both congresses?

Janine: From WFOT, it was the chance to meet with such a wide range of international Occupational Therapists. From ISIC, all speakers were wonderful and I enjoyed listening to and learning from all.



Research updates

Gemma Cartwright provides us with an update on recent Sensory Integration research studies from across the lifespan. Click on the pushpins below to access the material.



Neuro-developmental Disorders

Hypersensitivity as Extraordinary High Temporal Processing in Individuals with Autism-Spectrum Disorders [📌](#)

Structural Covariance of Sensory Networks, the Cerebellum, and Amygdala in Autism Spectrum Disorder [📌](#)

Sensory processing difficulties in school-age children born very preterm: An exploratory study [📌](#)

Sensory processing in children with and without attention deficit hyperactivity disorder: A comparative study using the Short Sensory Profile [📌](#)

Caregiver Burden Varies by Sensory Subtypes and Sensory Dimension Scores of Children with Autism [📌](#)

Sensory Processing in Children with Autism Spectrum Disorder and/or Attention Deficit Hyperactivity Disorder in the Home and Classroom Contexts [📌](#)

Specific Aspects of Repetitive and Restricted Behaviours are of Greater Significance than Sensory Processing Difficulties in Eating Disturbances in High-Functioning Young Girls with ASD [📌](#)

Examining the Association Between Autistic Traits and Atypical Sensory Reactivity: A Twin Study [📌](#)

Development of Emotion Self-Regulation Among Young Children with Autism Spectrum Disorders: The Role of Parents [📌](#)

Sensory Processing Patterns in Autism, Attention Deficit Hyperactivity Disorder, and Typical Development [📌](#)

Tactile localization performance in children with developmental coordination disorder (DCD) corresponds to their motor skill and not their cognitive ability [📌](#)

Occupation

Sensory processing disorder in preterm infants during early childhood and relationships to early neurobehavior [📌](#)

Play and play occupation: a survey of paediatric occupational therapy practice in Ireland [📌](#)

Relationship Between Sensory Processing and Participation in Daily Occupations for Children With Autism Spectrum Disorder: A Systematic Review of Studies That Used Dunn's Sensory Processing Framework [📌](#)

Regulation disorders of sensory processing—Understanding the complexities of child-parents relationship [📌](#)

Sensory Processing Sensitivity as a Marker of Differential Susceptibility to Parenting [📌](#)

Relationship Between Sensory Processing and Pretend Play in Typically Developing Children [📌](#)

Sensory Processing in the General Population: Adaptability, Resiliency, and Challenging Behavior [📌](#)

Relationship Between Sensory Processing and Sleep in Typically Developing Children [📌](#)

A novel Differential Susceptibility framework for the study of nightmares: Evidence for trait sensory processing sensitivity [📌](#)

Neuroscience

Autism spectrum disorder and interoception: Abnormalities in global integration? [📌](#)

Mirror neuron system activation in children with developmental coordination disorder: A replication functional MRI study [📌](#)

Mental Health

Sensory processing disorders and psychopathology [📌](#)

Linking Neuroscience, Function, and Intervention: A Scoping Review of Sensory Processing and Mental Illness [📌](#)

Research updates

continued ...

Assessment

Comparison of Two Tools to Assess Sensory Features in Children With Autism Spectrum Disorder 

Examining Sensory Overresponsiveness in Preschool Children With Retentive Fecal Incontinence 

A Systematic Review of Assessments for Sensory Processing Abnormalities in Autism Spectrum Disorder 

Introduction to the Evaluation in Ayres Sensory Integration® (EASI) 

The Glasgow Sensory Questionnaire: Validation of a French Language Version and Refinement of Sensory Profiles of People with High Autism-Spectrum Quotient 

Development and validation of the comprehensive praxis assessment for children aged 6–8 

Intervention

Effectiveness of Sensory Modulation in Treating Sensory Modulation Disorders in Adults with Schizophrenia: a Systematic Literature Review 

The Effect of Sensory Integration Therapy on Occupational Performance in Children With Autism 

Effectiveness of Cognitive and Occupation-Based Interventions for Children With Challenges in Sensory Processing and Integration: A Systematic Review 

Implementation of Rocking Chair Therapy for Veterans in Residential Substance Use Disorder Treatment 

Specific Sensory Techniques and Sensory Environmental Modifications for Children and Youth With Sensory Integration Difficulties: A Systematic Review 

State of the Science of Sensory Integration Research With Children and Youth 

Efficacy of Occupational Therapy Using Ayres Sensory Integration®: A Systematic Review 

Parental or Teacher Education and Coaching to Support Function and Participation of Children and Youth With Sensory Processing and Sensory Integration Challenges: A Systematic Review 

Research Study Update



Helen Justice

Occupational Therapy for adults with learning disabilities & sensory processing challenges: A Delphi study exploring important elements of practice within acute In-patient Units.

Helen Justice completed a research study as part of a Masters in Clinical Research (MRes) with the University of Brighton. The MRes course formed part of the NIHR Integrated Clinical Academic Programme for non-medical healthcare professions, which enables clinicians to participate in clinically relevant research whilst continuing with clinical practice.

Why was the research carried out?

In 2011, abuse was discovered at Winterbourne View Hospital in the UK. Since then close attention has been paid to the care people with learning disabilities and a mental health condition and/or challenging behaviour are receiving (Department of Health (DOH) 2012a, 2012b; Royal College of Psychiatrists 2013). Practitioners working in this area are being encouraged to use therapeutic strategies that improve quality

of life and offer alternatives to restrictive practices (DOH 2014). Some authors have suggested that sensory approaches can be one way to support these alternatives (Champagne and Stromberg 2004; Cahill and Pagano 2015; Gay 2015). Despite anecdotal evidence indicating that occupational therapists working with adults with learning disabilities use sensory approaches in their work and report finding them useful (Badwal and White 2014; Daniels 2015; Quinn 2016) a literature review found no studies that examined use of sensory processing approaches in acute learning disability in-patient settings (sometimes called assessment and treatment units) and no practice guidelines for clinicians working in this specialist area. The aim of the study was therefore to begin to create some preliminary evidence for therapists using sensory

processing approaches with this client group. In order to do this views of occupational therapists with expertise in this area were sought.

What the study involved

The study used the Delphi technique, which is a method for reaching agreement amongst experts in areas where there is little or no evidence. 13 experienced occupational therapists that had worked on acute in-patient units and had completed training in sensory processing approaches participated in a series of online surveys. They were asked which sensory processing assessments, treatments, outcome measures, facilities, equipment and training were important to have available for use in this setting. Survey items were rated for importance and participants could also provide comments if they wished. Consensus for agreement of importance was set at 80%.

Findings

Important Elements of Practice

Participants agreed on many items they felt were important and a list of “important” items was created. However, participants disagreed whether many other items were important.

In particular, relatively few formal assessments and outcome measures reached consensus for importance despite participants reporting they use many of these in their clinical work and providing positive comments about a number of them. Difficulties with available assessments and outcome measures for this client group supports previous research findings from Lilywhite and Haines (2010). To overcome these challenges participants reported they adapted assessments and “mixed and matched” between them to meet the needs of individuals and their families.

In addition to needing a selection of assessments to choose from, participant comments suggested that complexity of this client group and a wide variety of service user presentations required a “bespoke” approach. A range of treatment resources, facilities, and equipment were therefore needed.

Although this study specifically examined use of sensory processing approaches, many of the items rated important were directly related to occupation. For example observations during everyday activity, along with occupation focused assessments

such as the Assessment of Motor and Process Skills (AMPS) and Model of Human Occupation Screening Tool (MOHOST) were rated important in the assessments section. Environmental recommendations, adapting activities of daily living, adapting environments, adapting roles and routines, and development of activity risk assessments were also rated important and are all core occupational therapy interventions found in the majority of areas in occupational therapy practice. Likewise, many of the facilities and equipment items rated as important were linked to obvious occupational forms, e.g. cooking, exercising, gardening, home maintenance, playing; again reflecting a key focus on occupation by the expert panel.

Participant Comments

Comments made offered a fascinating insight into the clinical reasoning of therapists when using sensory processing approaches in this clinical area. The comments were analysed using thematic analysis and two themes were identified from these: “Complexity” and “Pragmatism vs. Ideal World”. A number of sub-themes were also identified within these.

It is not possible to discuss the themes fully in the space available in this summary; however, of particular note is a sub-theme “Integrating Occupational and Sensory Approaches”, which provides some pertinent information

regarding the clinical reasoning of occupational therapists when using an additional specialist approach. The participants in this study described combining both “top down” and “bottom up” approaches and within their practice demonstrated an apparent synthesis of occupational and sensory approaches.

Also of interest, in light of current drivers to support discharge from in-patient units wherever possible (e.g. Transforming Care and Commissioning Steering Group 2014), is the focus on discharge demonstrated by participants, whereby clinical decisions in terms of choice of intervention and equipment used were based around strategies and items that could be transferred into people’s lives when they returned to live in the community.

Acknowledgements

With grateful thanks to the occupational therapists that gave their time to participate in the study.

Thanks also to Sensory Integration Education, RCOT-PLD and RCOT for support with advertising the study.

For further information about this study please contact Helen.justice@nhs.net 

References:

SI Research in South Africa

Ann Watkyns is an Occupational Therapist (BSc OT, Dip. Therapists in Special Education) and a qualified tester in the SCSIT and SIPT. She owns a private practice in Cape Town, where she specializes in paediatrics. Ann presented her Master's research at WFOT 2018 which was hosted in her home town. We caught up with her during the conference to discuss all things sensory!



Ann Watkyns

SN: How did your interest begin in Sensory Integration?

Ann: I was working at Red Cross Children's Hospital in Cape Town in the late 1970s when Occupational Therapists started talking about Sensory Integration (SI). They were excited about it, claiming significant changes using this technique in therapy. However, I was sceptical, as there was no research on the efficacy of SI at that time. I therefore decided to select a few clients in my caseload and treat them using SI principles to see what the results were. I was very impressed!

SN: The WFOT congress theme this year is "Connected in Diversity: Positioned for Impact". How does your presentation on Sensory integration fit with this?

Ann: When I started my research, I was interested in the question of whether caesarean section was associated with the development of sensory over-responsivity (SOR) in children, which was particularly pertinent given the worldwide increase in the caesarean section

rate in the past 15 years. I was hopeful of being able to play an advocacy role in educating mothers and medical staff on the benefits of a natural birth, as well as developing a SOR preventative intervention programme for caesarean section babies. In this way we would be "Positioned for Impact". However, my results did not support my hypothesis, instead I found that children born by vaginal birth had greater SOR than caesarean section children. This was unexpected and did not support other research findings from my literature review indicating particular difficulties associated with caesarean section births.

The first part of the congress theme, "Connected in Diversity" came to me very powerfully while doing my research. My sample was drawn from low and high socio-economic areas. The contrast between them was staggering in so many aspects – living accommodation,

nutrition, parents' educational level, antenatal and delivery care, early childhood stimulation and educational opportunities are just a few examples. Due to poor quality of medical care and its accessibility in South Africa's low socio-economic areas, the number of vaginal births was high and the caesarean section rate was low. This was reversed in the high socio-economic areas, thereby affecting the results. Vaginal birth became a proxy for low socio-economic status, with caesarean section a proxy for high socio-economic status. The SOR prevalence rates therefore measured the influence of socio-economic status on SOR, more than the birth method. There have been several studies detailing the significant effect of socio-economic status on the development of sensory integration, sensory modulation, structural brain development and executive functioning, which would corroborate my findings.

SN: What is the current evidence base suggesting in terms of sensory over-responsivity in children of 3-5 years?

Ann: The research shows a variety of prevalence rates, depending on the study, but most indicate a rate of between 5-16%. This appears to decrease slightly during adolescence. The prevalence rate increases significantly in the presence of other co-morbid conditions, such as ASD or ADHD, to between 60-80%, depending on the condition and the study cited. Another interesting feature of SOR is that, where it co-exists with another condition, it is frequently the first symptom diagnosed, before its co-morbid condition, and can therefore be an early indicator of other developmental problems.

SN: Are there any particular assessment methods that you recommend for assessing sensory over-responsivity?

Ann: I used the Short Sensory Profile 2 in my research, as it is quick and easy to administer. It has considerably fewer items than the Sensory Profile, therefore taking less time to administer, is easier to score, has good psychometric properties. There are definite advantages to using a questionnaire, but also disadvantages, chiefly that it is subjective to the person completing it. I did feel there was a significant gap, in that there are no readily available therapist-administered assessment tools to assess sensory modulation. The new Sensory Processing Scale

is currently being developed to address this with a questionnaire and a clinician assessment. It looks at all the aspects of modulation, not just SOR, and evaluates all the sensory systems. It is currently going through the standardization process and should be available in the next few years. In addition to this, the EASI which is currently in development will be standardized in each country. It is exciting as it will assess all aspects of SI and will have a modulation component.

SN: You speak about preventative sensory strategies – Can you share more details on these?

Ann: The advocacy which I was postulating, arising from my research, was to develop a sensory preventative programme for use by mothers post-caesarean section. This has not been developed yet, but my thinking was to use compression techniques such as weighted blankets and swaddling to provide some of the compression the child lacks with a caesarean birth.

SN: In the literature interchangeable terms are used such as responsivity and reactivity? What is your view on this?

Ann: I used the term sensory over-responsivity in my thesis. A similar term, sensory over-reactivity, is currently used in the literature. The term sensory over-responsivity was chosen as this is the term used in the nosology of sensory processing disorders by Miller et al., (2007). The term

sensory over-reactivity originally referred to the neurophysiological over-reactivity thought to underlie the behavioural manifestation of sensory over-responsivity. However, when the DSM-V was published, the term sensory over-reactivity was used to refer to this symptom as it relates to the diagnosis of Autism Spectrum Disorders (American Psychiatric Association, 2013). As a result, the term sensory over-reactivity is becoming more commonly used.

SN: What are your future research plans?

Ann: The Sensory Profile suite of tests are inappropriate to our context in South Africa. I would like to be involved in developing and standardising a sensory modulation tool for South African use.

Advance Notice of Invite to participate in MSc Sensory Integration research:

A mixed-methods approach to investigate the implementation of Ayres' Sensory Integration® (ASI) by qualified ASI practitioners working with adolescents / adults / older adults in the UK

All qualified ASI practitioners will be e-mailed shortly via Sensory Integration Education, to be invited to participate in a web-based survey, conducted in fulfilment of a Sensory Integration MSc research project by Julia-Marie White (PG Dip OT), accredited by Ulster University

The research project aims to investigate how ASI is currently being implemented by qualified ASI practitioners working with adolescents / adults / older adults in the workplace. Through the collection of demographic information and practitioners' views, the study seeks to identify if there are common factors that facilitate, or act as barriers to, ASI implementation.

It is hoped that the study will have a beneficial impact on ASI practitioner development through enabling best practice to be shared, and transferred to areas where ASI implementation may present challenges.

Through identification of factors that could support future ASI implementation, it is also hoped that the study will be able to provide recommendations for action, to inform future development needs.

The survey is estimated to take 15 minutes. As a thank you for your time and effort taken, all completed survey entries will be entered into a randomly-selected prize draw to win a £25 Amazon voucher.

For further details, please look out for the study invite on your e-mail in the coming weeks. Your participation would be greatly valued. Many thanks in advance for your support.

