Afrikaans Autism Diagnostic Observation Schedule-2: Translation and Cultural Appropriateness for the Coloured Population from Low-Middle Socioeconomic Backgrounds Living in the Western Cape

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COMPULSORY DECLARATION: This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, cited, and referenced.

Signature: _____ Date: _____

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ABSTRACT

One of the key needs in diagnostic practice for autism spectrum disorder (ASD) in South Africa is to generate acceptable and valid diagnostic tools for use in the official languages of the country. The Autism Diagnostic Observation Schedule-2 (ADOS-2) is the "gold standard" diagnostic tool for ASD and it is increasingly used in South Africa. However, its use is limited to English-speakers, as the tool has not been translated into any of South Africa's commonly spoken languages. Moreover, the cultural appropriateness of this tool for the local cultures of South Africa has not been explored.

Consequently, this study translated the ADOS-2 into Afrikaans and assessed its cultural appropriateness for the coloured population from low-middle SES backgrounds residing in the Western Cape by using a mixed method approach. Three components associated with method bias were investigated to determine the cultural appropriateness of the tool for this population; the language used in the Afrikaans translation of the ADOS-2, the social interactions and activities in the ADOS-2, and the ADOS-2 materials. The Afrikaans ADOS-2 was pre-piloted in a clinical sample and an ethnographic investigation of play, social interaction, and social activities was conducted in a community sample. The data regarding play collected from the community sample is new to literature on this population.

The results highlighted numerous unique aspects of the language spoken by this group of people (Kaaps), which needs to be kept in mind when administering the Afrikaans ADOS-2 to this population. Social interaction between children and adults is appropriate for this population, and enough familiarity with ADOS-2 materials and activities was found to warrant the tool's use with this population. Guidelines for administering the Afrikaans ADOS-2 to the Afrikaans-speaking, coloured population from low-middle SES backgrounds from the Western Cape are provided to improve cultural sensitivity and cultural appropriateness and to reduce method bias.

INTRODUCTION

AUTISM SPECTRUM DISORDER

Prevalence. Autism spectrum disorder (ASD) is among the most common neurodevelopmental disorders. Worldwide prevalence estimates indicate that ASD is present in about 1% of the population (Centre for Disease Control and Prevention [CDC], 2014; Fombonne, 2009). In a surveillance summary by the CDC (March 28, 2014) of eleven active Autism and Developmental Disabilities Monitoring Network sites in the United States of America (USA), completed both in 2008 and 2010, the prevalence estimates of ASD among children aged 8 years increased 30% during this time. Moreover, it was reported that for 2010, the estimated prevalence of ASD was 14.7 per 1000 (one in 68) children aged 8 years. The CDC has also reported that boys are five times more likely to be diagnosed with ASD than girls.

The expansion in classification of what constitutes this disorder, the ever-increasing body of knowledge, and improved public awareness have all contributed to a significantly increased prevalence of ASD (Toth & King, 2008; Rosenberg, Daniels, Law, Law, & Kaufmann, 2009). Increased social services and policies may have also contributed to the high prevalence rates. However, a true reflection of increase in the underlying incidence of ASD cannot be ruled out (Saracino, Noseworthy, Steiman, Reisinger, & Fombonne, 2010).

ASD affects children worldwide across all demographic groups (Dyches, Wilder, Sudweeks, Obiakor, &Algozzine, 2004), including racial and ethnic groups (Fombonne, 2003) and across different cultures[1] (Daley, 2002). Socioeconomic status (SES) is not a risk factor for ASD (Fombonne, 2003), but it may influence clinical diagnosis (Daley, 2002).

The prevalence rates of ASD vary from country to country. This variability may be attributed to cultural differences and how ASD is perceived in different cultures (Norbury & Sparks, 2013).Some cultures may be less likely to participate in research due to language barriers, fear, misunderstanding or mistrust (Dyches, Wilder, Sudweeks, Obiakor, & Algozzine, 2004), and consequently these cultures will be underrepresented and possibly misrepresented in study findings.

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[1]According to Lehman, Chiu, and Schaller, "virtually every definition of 'culture' suggeststhat it represents a coalescence of discrete behavioural norms and cognitions sharedby individuals within some definable population that are distinct from those shared within other populations" (2004, pp. 690).

The prevalence of ASD in Africa is still unknown (Elsabbaghet al., 2012; Springer, Laughton & Kidd, 2013), but research has suggested that the prevalence of ASD may be lower in countries outside of North America and Europe (Zaroff & Uhm, 2012). Currently, there are no prevalence rates specific to South Africa.

Clinical classification. The alarming prevalence rates of ASD draw attention to diagnosis and the importance of accurately identifying this disorder. Classification and diagnostic criteria are pivotal to the process of diagnosis. However, 70 years have passed since Kanner's reporting on "autistic disturbances of affective contact" (Kanner 1943) and still the taxonomy of "autism" is in flux. Over the years the diagnostic criteria and classification of ASD has been elaborated as the understanding of the disorder improves (Wang, Lee, Chen, & Hsu, 2012).

In the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), ASD is classified as a neurodevelopmental disorder. For a diagnosis of ASD an individual must present (or have presented) with persistent deficits in two main domains, namely abnormalities in social communication and social interaction, and restricted, repetitive patterns of behaviours, activities or interests. These symptoms must be severe enough to cause clinically significant impairment in occupational, social or other areas of functioning.

Deficits in social communication and social interactions must include deficits in: Social-emotional reciprocity, nonverbal communicative behaviours used for social interaction, and developing, maintaining, and understanding relationships. Restricted, repetitive pattern of behaviours, activities or interests must include at least two of four behavioural symptoms. These symptoms include 1) stereotyped or repetitive motor movements, speech or object use, 2) the insistence on sameness, ritualized patterns of non-verbal or verbal behaviour, and/or inflexible adherence to specific routines, 3) unusual interest in sensory features of the environment or reactivity (hypo- or hyper-) to sensory stimulation, and 4) highly fixated and restricted interests that are abnormal in focus or intensity (American Psychiatric Association [APA], 2013).

Furthermore, these symptoms are typically recognised in the early developmental period and should not be better explained by global developmental delay or intellectual disability (APA, 2013).

In previous editions of the DSM (i.e., DSM-IV and DSM-IV-TR), ASD was categorised as 'pervasive developmental disorders' (PDDs). The category included five subtypes, namely autistic disorder (AD), Asperger's disorder (AS), pervasive developmental

disorder not otherwise specified (PDD-NOS), Rett's disorder, and childhood disintegrative disorder (CDD). These five subtypes were characterized by severe and pervasive impairments in three domains: social interaction, communication, and stereotyped behaviour, interests and activities (American Psychiatric Association [APA], 2000). Sensory abnormalities and motor coordination difficulties were also associated features (McInnes et al., 2005).

Therefore, in the newly developed DSM-5 the five PDD subtypes have merged into one all-encompassing disorder, ASD. In addition, the classical triad of deficits have merged into two (Lord & Jones, 2012; McPartland et al., 2012). There is a formal acknowledgement that "at this point in time, a diagnosis of autism represents a name for a complicated set of behaviours believed to derive from yet unknown neurobiological causes and pathways...[and that now] a single category of behaviourally-defined ASD [exists] which encompasses all of the subtypes of Pervasive Developmental Disorders, currently described in DSM-IV" (Lord & Jones, 2012, p. 498).Individuals who have a known genetic disorder, such as Rett's disorder or Fragile X, but meet the criteria for ASD, will receive a standard diagnosis of ASD and the genetic conditions will be designated as associated features of ASD. This approach leaves room for future genetic and biological discoveries which may bring ASD etiology to the fore.

The DSM-5 has a new diagnostic category, social communication disorder (SCD), which "is largely consistent with a DSM-IV-TR conceptualization of PDD-NOS absent restricted, repetitive behaviour symptoms" (McPartland et al., 2012, p. 370), and describes individuals who have significant difficulties in the social and communication realms.

The new umbrella category of ASD is intended to eliminate the concern about a NOS diagnosis, alleviate the confusion surrounding the distinction between AS, PDD-NOS and AD, clarify the many approaches used by clinicians to differentiate milder cases of AD from AS and PDD-NOS, and avoid the common problem of an individual receiving serial or even concurrent diagnoses of PDD-NOS, AD and AS (Lord & Jones, 2012). Whether or not the new classification of ASD will shed light on diagnostic difficulties, promote the unearthing of the disorder's etiology and improve clinical decision-making will only be revealed at a later stage once DSM-5 has had sufficient time to exercise its influence. For now its prospective value remains a matter of speculation.

Because ASD lacks a biological marker and traits are identified as being social, affective and behavioural in nature, diagnosing ASD can be difficult. Also, symptoms present themselves differently in each individual and in unique combinations, so much so that a

broad spectrum exists with severe cognitive impairment on the one end and genius on the other end (Lenne & Waldby, 2011).

AUTISM DIAGNOSTIC OBSERVATION SCHEDULE-2 (ADOS-2)

Just as ASD nosology is complex and dynamic, so too are ASD diagnostic procedures. These procedures are often very intricate and associated with a lot of variance, as many diagnostic tools are available. Researchers and clinicians need to do all that they can to diagnose the disorder accurately by means of valid and reliable diagnostic measures. After all, diagnosing ASD has serious consequences for diagnosed children and their families. The considerations should not stop at the taxonomy alone, or the striking prevalence rates. Emphasis also needs to be placed on accurate, standardised and dependable measures for ASD diagnoses.

DSM can assist clinicians in making an ASD diagnosis, and has promoted more sophisticated and specific diagnostic and screening instruments (Lord & Corsello, 2005). One such instrument, which has been referred to as the "gold standard" observational assessment for the diagnosis of ASD (Kanne, Randolph, & Farmer, 2008), is the *Autism Diagnostic Observation Schedule-2* (ADOS-2; Lord et al, 2012).Many reputable journals have stipulated that they will only publish ASD research if research participants have been diagnosed with ASD by "gold standard" diagnostic tools, such as the ADOS-2.

The ADOS-2 is a semi-structured, standardized assessment of social interaction, communication, play, imaginative use of materials, and restricted and repetitive behaviours. It is administered to individuals who have been referred because they might have ASD, and a formal diagnosis to confirm/exclude this possibility is required. The aim of the ADOS-2 is to provide a standardized and comprehensive observation, which clinicians typically make when considering an ASD diagnosis.

The ADOS-2 consists of five modules. Each module has its own protocol and relevant activities designed for use by children or adults primarily on the basis of their expressive language skills, their chronological age and/or how relevant the activities are to their abilities and interests.

The Toddler Module is designed for children aged 12 to 30 months who are pre-verbal or use single words. Module 1 is also for children who are pre-verbal or use single words, but are aged 31 months or older. Module 2 can be administered to children who use simple phrase speech (e.g., "Baby no eat"), but are not yet verbally fluent. Module 3 and Module 4 are intended for verbally fluent participants, who are typically under the age of 16

for Module 3, and older than 16 for Module 4. Only one of the modules is administered to each participant, and the administration takes approximately 40 to 60 minutes.

The ADOS-2 administrator assigns overall ratings immediately after the live assessment based on observations made and notes taken. These ratings, or codes, are then converted to algorithm scores which are used to complete a diagnostic algorithm of ASD. Modules 1 through 4 use cutoff scores to determine diagnostic classifications, and the cutoff scores yield classifications of either "autism" (classic AD; indicating an overall score greater than the "autism" cutoff), "autism spectrum" (which indicates an overall score greater than the "autism spectrum" cutoff, but less than the "autism" cutoff, and represents DSM-IV-TR's classification of either AS, Rett's disorder, CDD, or PDD-NOS) or "non-spectrum" (indicating an overall score less than the "autism spectrum" cutoff). The higher the score, the more items an individual has presented that are associated with core symptoms of ASD and/or the more severe the impairment is (Lord et al., 2012).The clinician administering the ADOS-2 should, in addition to assigning scores to the items, form a clinical impression that can contribute significantly to the diagnostic decision (Molloy, Murray, Akers, Mitchell, & Manning-Courtney, 2011).

The ADOS-2 is only one component of a full diagnostic evaluation for ASD. It is not a replacement for the diagnosis by a professional, experienced clinician or for the historical account by a caregiver (Gotham, Risi, Pickles, & Lord, 2007). A thorough diagnosis of ASD, like the assessment of other disorders, encompasses the evaluation of many domains of functioning from multiple sources using several tools.

The observational assessment is highly structured and rigorous, and requires very specific, formal training. Only clinical professionals with appropriate educational qualifications, training, experience including administration of test batteries, and extensive exposure to ASD, are allowed to train in the ADOS-2. Administration of this tool is allowed after the training has been completed and the administration sufficiently practiced (Lord et al., 2012). Clinical training on this tool precedes research training. Only clinicians who are deemed research reliable are allowed to administer this tool for research purposes.

The primary focus of the ADOS-2 is on the interactive social behaviour between the examinee and the examiner. It should only be administered by one examiner at a time and any other person present in the assessment room should serve solely as an observer (Lord et al., 2012). Therefore, during an administration a translator should not be used. Rather, the assessment should be conducted in the language spoken by both the examinee and the examiner.

In recent years the validity of this tool has been studied intensively in various populations and the results indicate that the ADOS-2 is a valid ASD diagnostic tool for young children through adolescence that have high or low functioning (reviewed by de Bildt et al., 2013).

ADOS-2 AND DSM-5

The new DSM-5 taxonomy of ASD is in line with the ADOS-2 diagnostic classification system. In fact, some of the authors who created and revised the ADOS-2 are members of the DSM-5 panel who revised the single ASD diagnostic category.

As DSM-5 collapsed the PDDs into one diagnostic category, individuals can only be diagnosed with ASD, or not. This is likened to the ADOS-2, which yields a classification of whether or not an individual meets the criteria of autism, autism spectrum (together seen as ASD), or neither (non-spectrum). The ADOS-2 also does not differentiate between the various subtypes which were once listed under PDDs. Nonetheless, the fact that the ADOS-2 still differentiates between "autism" and "autism spectrum" is also beneficial as this diagnostic differentiation can still be applied to previous literature, which used DSM-IV taxonomy. Despite the changing nomenclature, people can still define themselves in term of previous categories of PDDs or definitions (Lord & Jones, 2012).

Additionally, the revised algorithms of the ADOS-2 Modules 1 through 3 have paralleled DSM-5 by merging three functional, algorithm domains into two: restricted and repetitive behaviour, and social affect (including communication and social interaction; Lord & Jones, 2012).

ADOS-2 AND CULTURE

It has been recognised that in mainstream psychology conclusions have been drawn about human behaviour, perception and cognition from research conducted in the "global north" (typically referring to the USA, United Kingdom, and Western Europe). Cohorts used form a tiny minority of the world's population and may be rather limited to "privileged individuals (i.e., those who are educated, live in democratic societies, and have high SES;" Norbury & Sparks, 2013, p. 46).

Most of the research published on ASD (including the development of diagnostic criteria and diagnostic tools) has been conducted in developed countries and the samples are mainly drawn from white populations (Al-Salehi & Ghaziuddin, 2009) or populations with

higher SES (Tek & Landa, 2012). This is because the earliest identification of ASD occurred mainly in this population (Dyches, Wilder, Sudweeks, Obiakor, & Algozzine, 2004).

The ADOS and ADOS-2 was developed in the UK and USA, but it has been widely used throughout the world and administered to many different individuals from different cultures. Given the cultural diversity of many countries, it is of great importance that culturally sensitive[2] tools are used (Hilton & Skrutkowski, 2002) and tools are administered in a culturally sensitive way. When a tool derived in the global north is used in a different country, there is a risk that the tool (including the tool's materials and approaches) might be culturally inappropriate for those from the different country (Norbury & Sparks, 2013).

Many cultural factors may present themselves as challenges during tool administration. Using a tool which is in a different language to the language spoken by the individual being assessed is one example. Standardised tools in languages other than English are rare (Norbury & Sparks, 2013). Tool administration in a language other than the mother tongue of the individual being assessed can be problematic and impact outcome scores (Taliep & Florence, 2012). Pragmatic aspects of language (e.g., non-verbal mechanisms, the chosen topics of conversation, and discourse rules) are also important to consider, as these aspects may vary from culture to culture (Carter et al., 2005).

Also, certain diagnostic tools, like the ADOS-2, contain many different materials. Certain materials found in diagnostic tools and used during diagnostic assessments may be inappropriate, as individuals being assessed may not be familiar with such materials (Norbury & Sparks, 2013). Materials used during assessments need to be familiar (Carter et al., 2005) and culturally appropriate for the individuals being assessed.

Furthermore, certain social interactions found in assessments, particularly between adults and children, may not be culturally appropriate for the individual being assessed. For example, it may be deemed unusual by cultural and religious standards for such interactions to take place (Norbury & Sparks, 2013).

The ADOS-2 assessment is structured so that an unfamiliar adult interacts with a child, very often during play activities or social conversations, for the entire assessment. It

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[2]Foronda (2008) uncovered the meaning of "cultural sensitivity" through a concept analysis. She said "cultural sensitivity" is "employing one's knowledge, consideration, understanding, respect, and tailoring after realizing awareness of self and others and encountering a diverse group or individual. Cultural sensitivity results in effective communications, effective interventions, and satisfaction" (pp.210).

also relies on the child initiating interaction with the unfamiliar adult and reporting information to the adult. This could be problematic for some cultures. For example, during a study investigating how cerebral malaria effects language and cognitive development in rural Kenya, Carter et al. (2005) discovered how unusual it was for children and adults, especially unfamiliar adults, to interact for an extended period of time. They also reported that in some cultures information flows from adults to children, but adults do not solicit information from children.

A study reviewing literature on the influences of Korean culture on factors relating to ASD found that the parenting style most often used in Korea is very authoritative. Parents have control over the decisions their children make and interact with their children in an authoritative manner. Even within the classroom environment, teachers emphasise their authority. This might result in these children feeling uneasy in a scenario where they are expected to interact freely with adults (Kang-Yi, Grinker & Mandell, 2013). Consequently, the social interaction necessary in an ADOS-2 assessment will be unfamiliar and inappropriate for a child from this culture.

Equivalence and bias. Using a measurement tool derived in the global north outside of this context has the potential of leading to non-equivalence and bias. Equivalence addresses the comparability of observations and concepts under study across cultures (Ægisdóttir, Gerstein, & Çinarbaş, 2008). Many different forms of equivalence have been reported. For example, functional equivalence looks at whether the same construct is measured across cultural groups (van der Vijver & Tanzer, 2004). Conceptual equivalence addresses whether a particular behaviour has similar meaning in different cultures. Metric equivalence addresses the psychometrics involved with measuring the same construct in different cultures (Lonner, 1985). Bias has a negative impact on equivalence. It refers to factors which can limit the comparability of observations across different cultures (Ægisdóttir, Gerstein, & Çinarbaş, 2008). Types of biases include method bias (when aspects of a tool, the tool as a whole, or the tool's administration is not appropriate for certain cultures), construct bias (when measuring a *whole* construct is difficult or impossible in certain cultures), and item bias (when the content of an item of a tool is not culturally appropriate/relevant for a certain culture, or when a particular item of a tool is poorly translated or difficult to translate).

When a tool is translated from one language into another and administered to a different cultural group, equivalence and bias need to be investigated. This may be done

through a validation study. What is important, however, is assuring that whatever it is that is being studied exists in the culture in question and can be measured in the same way (Ægisdóttir, Gerstein, & Çinarbaş, 2008).

The social, affective and behavioural nature of ASD lends itself to cultural influence, as these domains are influenced and penetrated by cultural values and expectations. In order to determine what behaviour is acceptable or not acceptable, one needs to observe the culture in which the behaviour takes place. The widely accepted diagnostic criteria associated with ASD, which have been derived in the global north, need to be explored from a cultural point of view to determine if the ASD symptoms associated with the diagnostic criteria come forth as problematic in the culture in question (Daley, 2002).

ADOS-2 IN SOUTH AFRICA

Language. The ADOS-2 was developed in English. However, the tool has been translated into 17 different languages (seven published translations are available and 10 translations are in press).These translations are widely used throughout the world. Research has shown that translating the tool can significantly impact the outcome scores. This is why the ADOS-2 translations need to be thoroughly reviewed and approved before use (Lord et al., 2012; Western Psychological Services [WPS], 2015).

Unfortunately, the ADOS-2 has not yet been translated into any native African language (which is in press or published). The translation of the ADOS-2 into languages that are more appropriate for the general population of South Africa is much needed. Limiting ADOS-2 assessments to English-speaking individuals in a diverse country with 11 official languages (Statistics South Africa, 2011) and a history of apartheid is not just. Moreover, if renowned journals require ASD studies to confirm the ASD diagnoses of their participants with the ADOS-2, ASD literature stemming from South Africa will not be representative of the country's inhabitants.

Culture. South Africa is a multi-cultural country. Culture and diversity is such a crucial component of South African heritage that even the legislation takes it into regard. In terms of mental health and psychometric tools, the legislation stipulates that these types of tools are only permissible once they have been shown to be scientifically valid and reliable for respondents from various cultures. These tools should not be biased against any group (Employment Equity Act 55 of 1998). Using psychometric tools which are biased towards a specific cultural group may have grave consequences for people (Taliep & Florence, 2012).

The results obtained from psychometric tools can be used to make very important decisions about people's lives and the healthcare they receive, and therefore, it is of utmost importance that such tools are reliable, valid and culturally appropriate for the contexts in which they are used (Taliep & Florence, 2012).

As South Africa lacks suitable diagnostic tools, many tools, like the ADOS-2, are imported from the global north (Taliep & Florence, 2012). It has been suggested that using "gold standard" ASD diagnostic tools, like the ADOS-2, across the globe may harmonize the language used to diagnose and discuss ASD. However, we need to establish whether these tools are actually valid and reliable in our context, and furthermore, appropriate for our local cultures, instead of just blindly using them.

As widely used as the ADOS-2 is in South Africa, we have yet to ascertain whether this tool is appropriate for our local cultures. There is a chance that aspects of this tool (e.g., the language of the original tool [English], the social interaction used, and the ADOS-2 materials) might be culturally inappropriate for some cultures in South Africa.

RESEARCH AIM

One of the key needs in diagnostic practice for ASD in South Africa is to generate acceptable and valid diagnostic tools for use in the official languages of the country. In the Western Cape of South Africa, Afrikaans is the highest frequency language, spoken by approximately 50% of the population. 77.04% of Afrikaans-speaking individuals in the Western Cape are coloured[3] (Statistics South Africa, 2011).

Consequently, this study aimed to bridge the gap by translating the ADOS-2 into Afrikaans. Furthermore, this study also investigated whether the Afrikaans-translated ADOS-2 might be culturally appropriate for the majority of Afrikaans-speaking people in the Western Cape. Therefore, the focus of this investigation was on Afrikaans-speaking, coloured

[3]"Coloured" refers to an ethnic category found in South Africa, which was derived from apartheid classification, but is used in the modern South African census. This category can be a positive assertion of identity (de la Rey & Duncan, 2003) and will be used as such in this study. Research on the coloured population often uses inverted comas when referring to coloureds (i.e., "coloureds"). This research will not use inverted comas when referring to coloureds or any other ethnic category used in South Africa (e.g., whites and blacks). This does not, in any way, mean that the study or the researcher condones racism, segregation, and/or apartheid in South Africa.

families. To ensure that we evaluated families that would be representative of the typical SES profile of state sector patients, we were specifically interested in exploring the cultural appropriateness of the Afrikaans ADOS-2 among coloured families of low to middle SES (here from referred to as "low-middle SES"). Springer, Laughton and Kidd (2013) described the ASD cohort attending the Developmental Clinic at Tygerberg Children's Hospital in the Western Cape. They found that just over half of the ASD population attending the developmental clinic were coloured. Furthermore, they stated that the majority of patients attending public health services in South Africa are of low SES.

Validation studies of diagnostic measures, such as the ADOS-2, in countries outside the global north are very important to ensure the proper use of the tools and to determine how the defining dimensions of social communication and restricted, repetitive behaviour are manifest in different cultures and countries (Lord & Jones, 2012). This study was part of a larger study which aimed to investigate ASD screening and diagnostic measures in the Western Cape. Specifically, this study formed part of the validation of the Afrikaans ADOS-2 in the Western Cape and investigated aspects which are associated with method bias (i.e., familiarity of tool materials and activities and appropriateness of tool administration).

BACKGROUND TO THE STUDY: TRANSLATION AND COLOURED CULTURE

TRANSLATION

As the focus of this study was on the appropriateness of the Afrikaans-translated ADOS-2 for the Afrikaans-speaking, coloured population from low-middle SES backgrounds residing in the Western Cape, we needed an Afrikaans translation of the ADOS-2 before the study could commence.

This project used the symmetrical approach for translation (Hilton & Skrutkowski, 2002; Sousa & Rojjanasrirat, 2011). This approach warranted the faithfulness of meaning and colloquialism in the original English ADOS-2 and in the translated Afrikaans version. It also used the process of centring (Sousa & Rojjanasrirat, 2011), whereby the original English ADOS-2 and the Afrikaans-translated version were considered equally important. The steps which were used during the translation procedure are listed below (step 1 to step 9). Additional steps (step 10 to step 14) are also listed, which could be used in future research to validate the Afrikaans ADOS-2 for the Western Cape (see Table 1 for summary of steps).

Step 1: Before this project could commence, the researcher completed ADOS-2 training for both clinical administration and research reliability. Also, permission was obtained from the ADOS-2 publishing company, WPS, to translate the tool into Afrikaans.

Step 2: All of the Modules (Toddler, 1, 2, 3, and 4) of the ADOS-2 were translated into Afrikaans by a bilingual PhD student from the Department of Psychology at UCT. The examiner's script found in the ADOS-2 manual and also in some of the Module booklets also needed translating. This was done by a bilingual professional highly familiar with translating clinical material. Both of these translations were literal translations.

Step 3: A committee approach was used (Brislin et al., 1973) to work through the entire translation and examiners script and make adaptations where necessary. This committee consisted of four individuals trained in the ADOS-2 who are highly familiar with ASD. This committee also ensured that correct meaning was conveyed and colloquial language was used where necessary to foster symmetrical translation. This approach where literal translation is completed and then meaning and colloquialism is established *after* by an expert panel or committee differs from the methodology recommended by Sousa and Rojjanasrirat (2011). Nonetheless, it is an alternative symmetrical translation procedure using the centring process (Sousa & Rojjanasrirat, 2011)

Step 4: Consensus on the terminology was reached by the committee. After much deliberation there were 12 English words (see Figure 1) frequently used with ASD for which suitable Afrikaans equivalents could not be found. Therefore, a professional who researches words and deciphers new ones for an Afrikaans dictionary, the *Handwoordeboek vir Afrikaanse Taal*, was contacted for assistance. Further adjustments were made to the Afrikaans-translated ADOS-2. Encountering this difficulty highlighted that item bias may be of concern. Despite using a thorough translation procedure, these 12 terms were difficult to translate due to the lack of Afrikaans equivalents. The Afrikaans terminology decided on for these problematic terms are terms which most convey conceptual equivalence.

Step 5: The blind back-translation technique is preferred in research where translation of an instrument is necessary, even though it is expensive and time-consuming (Sperber, 2004). Therefore, this study adopted this technique. The Afrikaans-translated ADOS-2 was sent off to a bilingual Educational Psychologist from Stellenbosch who routinely works with children with ASD for back-translation. She was blind to the original tool. She was also asked to assist with the Afrikaans equivalents for the 12 key technical terms. She noted edits that needed to be made to the Afrikaans-translated ADOS-2 too. The examiners script was

back-translated by an academic highly familiar with translation. He was also blind to the original examiners script.

Prompt
Press
Rapport
Gaze
Pointing
Cause and effect toys
Independent agent (when referring to toys)
Mouthing
Weariness
Joint (in joint interactive play, for example)
Probe
Word approximation

*Figure 1***.** Words without suitable Afrikaans equivalents.

Step 6: The researcher then compared the back-translated versions and the original versions, as this is a necessary step during a translation procedure (Hilton & Skrutkowski, 2002; Maneesriwongul & Dixon, 2004; Sperber, 2004; Sousa & Rojjanasrirat, 2011). Discrepancies were noted and further adaptations were made.

Step 7: Three members from the committee carefully read through the various Modules separately and further edits were made. The Afrikaans-translated ADOS-2 Modules were then designed to look identical to the original English ADOS-2 Modules for easy administration and consistency. This produced a pre-pilotable version of the Afrikaans ADOS-2.

Step 8A: This step was the focus of this study and involved pre-piloting the Afrikaans ADOS-2 to a small clinical sample. Testing a translated tool is essential to unveil any problems with clarity of the target language among the target population (Maneesriwongul & Dixon, 2004). Although the pre-piloting step was not used as a means to conduct preliminary psychometric testing (Sousa & Rojjanasrirat, 2011), it served as a pivotal source of information for further tool adaptation. During administration of the various Modules, the ADOS-2 examiner noted any changes which needed to be made to the language and layout. These changes were made accordingly. Caregivers of the children partaking in the assessments were given a questionnaire to complete regarding the language used during the assessment and the cultural appropriateness of the activities in the tool. A maximum of four observers who observed the assessments completed a similar questionnaire, as did the

examiner of the tool. The data collected during this step was used to adapt the language in the Afrikaans ADOS-2 and make recommendations about future administrations.

Step 8B: This step was also the focus of this research. Although it did not inform the translation of the tool, it did produce guidelines for administering the Afrikaans ADOS-2 to the population in question in a culturally appropriate and culturally sensitive way. This is a step which has been introduced in this study and should be included in other research of this nature. It included an ethnographic investigation of the ADOS-2 social interactions, activities and materials in a community sample.

Step 9: Final adaptations to the Afrikaans-translated ADOS-2 and the examiners script was made to produce versions ready for the second blind back-translation.

Step 10: This step is proposed for the future and is not included in this study. The Afrikaans-translated ADOS-2 and the examiners script must be back-translated separately by trustworthy and professional translators.

Step 11: The back-translated versions must be compared with the original English versions. The methodology introduced by Sperber (2004) may be used, whereby each item in the two versions is rated in terms of similarity of interpretability and comparability of language. Problematic items should be retranslated until confidence in the comparability and similarity is reached.

Step 12: A copy of the final Afrikaans-translated ADOS-2 and its back-translation, as well as the final Afrikaans-translated examiners script and its back-translation must be sent to the WPS for approval.

To continue past the translation procedure and validate this tool, the following steps are proposed.

Step 13: A bilingual technique whereby both the original tool and the translated tool are administered to bilingual participants to detect discrepant responses and establish criterion equivalency could be used (Maneesriwongul & Dixon, 2004; Sousa & Rojjanasrirat, 2011). There are no overall practice effects on the ADOS-2 (Lord et al., 2012) which could negatively impact this step. Preliminary sensitivity and specificity scores could also be obtained during this step. Further investigation into equivalence and bias (Ægisdóttir, Gerstein, & Çinarbaş, 2008) should be conducted.

Step 14: The final step, or the piloting, is to establish the full psychometric properties of the Afrikaans ADOS-2 with the target population. Specifically, the concurrent validity of the Afrikaans ADOS-2 must be checked by comparing the results from the Afrikaans ADOS-

2 assessments with consensus diagnoses reached by three experienced clinicians blind to the scores obtained by the tool. The convergence between the two diagnoses will reveal whether the Afrikaans ADOS-2 is a valid diagnostic tool for the Western Cape. Final sensitivity and specificity scores must be obtained.

Table 1. *Steps for Translation and Validation of the Afrikaans ADOS-2.*

Steps	Description
1	Training on the ADOS-2 and WPS permission for translation
2	Literal translation of ADOS-2 and examiners script
3	Committee approach to ensure symmetrical translation
4	Terminology consensus
5	Blind back-translation of Afrikaans ADOS-2 and Afrikaans examiners script
6	Comparison of original tool and examiners script with back-translations
7	Finalisation of Afrikaans ADOS-2 before pre-piloting
8A*	**Pre-piloting of Afrikaans ADOS-2 with feedback from caregivers, observers and examiner**
8B*	**Ethnographic exploration of materials, social interactions and activities**
9	Finalisation of Afrikaans ADOS-2 and examiners script before second back-translation
10	Second blind back-translation of Afrikaans ADOS-2 and Afrikaans examiners script
11	Second comparison of original tool and examiners script with back-translations
12	Final translations and back-translations sent to WPS
	Validation
13	Bilingual technique, preliminary psychometric testing, investigation of equivalence and bias.
14	Piloting and psychometric testing

Note. *****These steps refer to the mixed methods approach reported on in this thesis.

COLOURED CULTURE

As the focus of this study was on the appropriateness of the Afrikaans-translated ADOS-2 for the Afrikaans-speaking, coloured population from low-middle SES backgrounds residing in the Western Cape, it was important to do research on this population. Specifically,

we wanted to investigate the language, play, and interactions of these people, as this was of importance to this study.

Language. Language plays an important role when trying to understand a culture, which is made clear by Carter et al. (2005): "Language is a medium for conveying and internalizing culture and is thus embedded in culture (and vice versa)."

"Kaaps" is a vernacular of Afrikaans, commonly spoken by coloured, Afrikaans-speaking people from low-middle SES backgrounds from the Western Cape (Devarenne, 2010; Martin, 2000). It differs quite significantly from standard Afrikaans, spoken by whites and middle-class coloureds, in that the dialect is unique and code-switching,[4] particularly with English, is common (van der Waal, 2012). The dialect can be spoken in many different "levels" ("…from the 'respectable' language of the middle class, also frequently used by craftsmen and workers, to jail slang;" Martin, 2000, pp. 111), and the way the dialect is used varies according to situations, company, and impressions (Martin, 2000).

In the past, this non-standard variety of Afrikaans was used as a means of resisting Afrikaner cultural imperialism and nationalism. It has been said that by speaking their own dialect, coloureds in the past were able to dissociate themselves from their oppressors, or the white Afrikaners (Devarenne, 2010; van der Waal, 2012). This unique way of speaking is "a gift for absorbing and syncretizing influences in order to create an original culture" (Martin, 2000, pp. 113). Kaaps signifies their connectedness and collectivism (Martin, 2000; van der Waal, 2012), and it is what this community use to communicate their life experiences (Devarenne, 2010).

Play. Unfortunately no literature was found on the kinds of games coloured children in the Western Cape play, or the kinds of materials they play with. For this reason an ethnographic investigation of play in coloured children in the Western Cape was conducted in this study, and can begin to address the dearth of information available on this topic. What was found, though, was that most children from low SES backgrounds in South Africa do not have toys. Therefore, they improvise by playing with materials which are freely available (e.g., stones, bricks, and sticks; Kekae-Moletsane, 2008).

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[4]Code-switching can be understood as using at least two distinct languages in the same conversation (Simango, 2011).

Interactions. The "enjoyment of local social life" (van der Waal, 2012, pp. 459) is part of coloured culture, along with their unique Afrikaans dialect, their music, cooking, and dress style (Martin, 2000). Literature on this population often refers to "coloured communities" (e.g., Devarenne, 2010; Martin, 2000; van der Waal, 2012). This, in itself, is evidence of the sense of community these people share. They are a highly sociable group and share their life experiences, even if those experiences often include poverty and violence (Muyeba & Seekings, 2011).

METHODS

RESEARCH DESIGN AND SETTING

This research formed part of a larger study that aimed to investigate tools used for screening and diagnosing ASD in the Western Cape, South Africa. The research reported in this thesis was part of the translation and validation of the Afrikaans ADOS-2, and focused on assessing the cultural appropriateness of an Afrikaans translation of the ADOS-2 in a low-middle socioeconomic group of Afrikaans speaking coloured families in the Western Cape.

The study used a mixed method approach and included 4 steps:

Step 1: Translation of the ADOS-2 into Afrikaans

Step 2: Expert committee discussions to generate a consensus Afrikaans ADOS-2

Step 3: Pre-piloting of the Afrikaans ADOS-2 (with an emphasis on language, materials, and social interactions/activities) in a clinical sample

Step 4: Ethnographic investigation of play, social interaction, and social activities, and survey of ADOS-2 materials in low-middle SES, Afrikaans-speaking families in a community sample (see Figure 2).

The focus of this thesis was steps 3 and 4. Step 1 and step 2 were required to develop a pre-pilotable version of the Afrikaans ADOS-2, which was used in this study. Therefore, step 1 and step 2 were discussed in detail in the background to this study.

Translating and validating a diagnostic tool for a different cultural group is complex, time-consuming, and expensive. Many different methodological steps are required during such a task. These steps need to be comprehensive, rigorous, and carefully planned (Sousa & Rojjanasrirat, 2011). The entire translation and validation process may take several years and is normally conducted using more than one study (Sousa & Rojjanasrirat, 2011). Unless the

process of translating and adapting a diagnostic tool is successfully implemented, the validity of research (and clinical) results resting on the tool may be suspect (Sperber, 2004).

The primary objective of this preliminary validation project was to establish whether the Afrikaans ADOS-2 is a culturally appropriate tool for low-middle SES, coloured, Afrikaans-speaking families residing in the Western Cape.

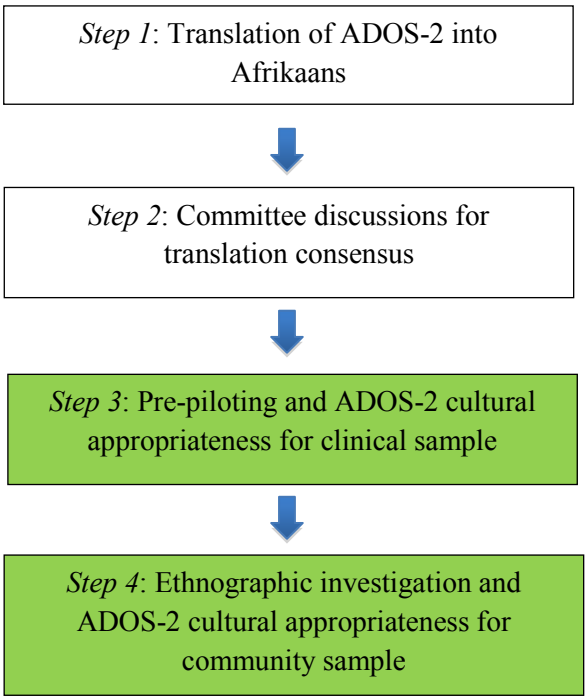

Figure 2. Mixed method approach used during this study to establish the cultural appropriateness of the Afrikaans-translated ADOS-2 for the low-middle socioeconomic group of Afrikaans speaking coloured families in the Western Cape (with main focus on step 3 and step 4).

In order to achieve this aim we wanted to investigate three key components: 1) The appropriateness and accessibility of the language used in the Afrikaans translation of the ADOS-2, 2) the appropriateness of the social interactions and activities in the ADOS-2, and 3) the appropriateness and familiarity of materials in the ADOS-2. Therefore, we wanted to investigate aspects which relate to method bias.

In order to investigate these three key components, a pre-pilotable version of the Afrikaans ADOS-2 was required. The first step of the mixed method approach was used to translate the original English ADOS-2 into Afrikaans. The second step required four individuals who routinely work with ASD and who are trained in the ADOS-2 to work together to reach consensus on the terminology used in the translation. This committee was

responsible for generating the pre-pilotable version of the Afrikaans-translated ADOS-2 used in this project.

The language component was specific to the Afrikaans ADOS-2, as it investigated whether the language used by the examiner during Afrikaans ADOS-2 assessments was accessible and appropriate for participants. The third step in the mixed method approach included pre-piloting the translated ADOS-2 with a small clinical sample, given the ADOS-2 is typically administered to clinical populations. The *language and cultural appropriateness questionnaires*, as well as the various Afrikaans ADOS-2 Modules were used during this component on the research.

The appropriateness of the ADOS-2 activities and social interactions component looked at various activities and interactions found in the ADOS-2 and examined whether they were familiar and culturally appropriate for members of the low-middle SES, Afrikaans-speaking, coloured population of the Western Cape. Specific activities and interactions from the ADOS-2 were selected. Participants from the clinical sample (step 3) were asked to note any cultural inappropriate activities during their observations of their children's ADOS-2 assessments in the *language and cultural inappropriateness questionnaires.* The ADOS-2 examiner and the observers also commented on this aspect in their versions of the questionnaire. Participants from the community sample (step 4) were asked to spontaneously report whether such activities and interactions occur in their daily lives, in the *ethnographic questionnaire.* This data was used to identify whether the ADOS-2 activities and interactions were culturally appropriate for the sample.

Important to note is that Appendix A provides a brief description of all ADOS-2 activities mentioned in this study.

The appropriateness of the ADOS-2 materials component investigated whether the materials found in the ADOS-2 kit were familiar to members of the low-middle SES, Afrikaans-speaking, coloured population of the Western Cape. This was done by exposing the materials to the caregivers in the clinical sample (step 3) as well as a community sample (step 4), and then querying whether the caregivers' children were familiar with the materials using the *ADOS-2 materials questionnaire*. The *language and cultural appropriateness questionnaires* were used to note if any materials appeared to be culturally inappropriate for the children from the clinical sample (step 3) during their exposure to the materials in their ADOS-2 assessments. The *ethnographic questionnaire* required caregivers from the community sample(step 4) to spontaneously report on their children's preference of games

and toys (play), and any overlaps between natural play and aspects of play in the ADOS-2 were noted (see Figure 3).

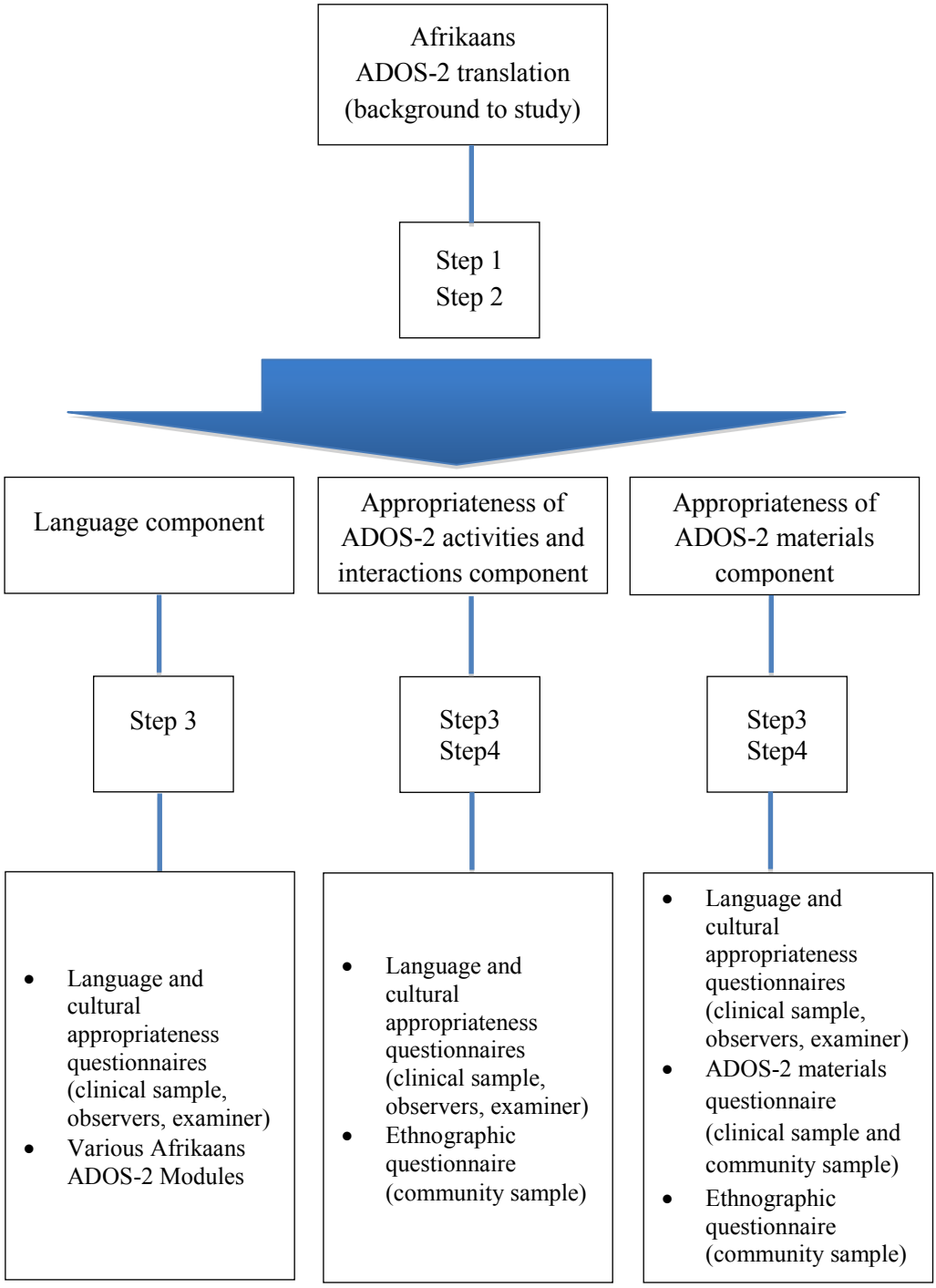

Figure 3. The Afrikaans-translated ADOS-2 necessary for this project, the three key components necessary to achieve the aim of establishing whether the Afrikaans ADOS-2 might be culturally appropriate for the low-middle socioeconomic group of Afrikaans speaking coloured families in the Western Cape, and the steps from the mixed method approach and questionnaires used during each component.

Important to note is that the data collected from the clinical sample and the community sample was analysed separately. Administering the Afrikaans ADOS-2 to the clinical sample (step 3) provided an opportunity to observe whether the tool was culturally appropriate for the sample. Special attention was paid to the language used during the Afrikaans ADOS-2 assessments. The data collected from a community sample (step 4) enabled us to understand what is typical for members of the low-middle SES, Afrikaans-speaking, coloured population from the Western Cape in terms of play, social activities and social interactions. In terms of the appropriateness of the ADOS-2 materials, data was collected from the clinical sample and the community sample (here from collectively referred to as the "full sample").

Therefore, the data collected from the full sample (step 3 and step 4) was used to make a collective decision about whether the tool might be culturally appropriate for coloured, Afrikaans-speaking individuals from low-middle SES backgrounds living in the Western Cape.

The data was analysed to identify qualitative themes by means of thematic analysis, as well as identify basic quantitative results (proportions, percentages and frequencies). Furthermore, the Afrikaans ADOS-2 administrations from the language component were recorded, so that the assessments could be clearly seen and heard if reference needs to be made to these assessments at a later stage.

The venue used by the clinical sample was at the UCT Division of Child and Adolescent Psychiatry (DCAP) in Rondebosch, which has a private assessment room containing a video recorder which was used. The community sample completed questionnaires at the UCT Department of Psychology in Rosebank in a private room. The goal was to create the most comfortable and relaxed environment possible, so as to facilitate clinical rapport.

PARTICIPANTS

Overall, this study recruited 47 participants (N=47). These participants were all primary caregivers. Seven of these participants (N=7) were from the clinical sample and 40 of these participants (N=40) were from the community sample.

Clinical sample recruitment. Seven primary caregivers and their children who were participants in the larger ASD screening study were recruited at the Red Cross Hospital Developmental Clinic. The caregivers had previously consented to be contacted for future

research. The inclusion criteria stipulated that primary caregivers and their children needed to be coloured, Afrikaans-speaking, from lower to middle SES backgrounds, and that the children needed to be between the ages of 31-months-old and 20-years-old. It was important to recruit children from a wide age range to create a platform for most of the ADOS-2 Modules to be administered to ensure evaluation of all ADOS-2 materials and activities. No restrictions were placed on this sample in terms of gender.

Caregivers were contacted by phone and arrangements concerning the dates and times for their children's formal assessment sessions at the DCAP were made. Caregivers were notified that they too would be part of the study, as they needed to complete a series of questionnaires.

Community sample recruitment. 40 participants were recruited via word-of-mouth from a local cleaning company outsourced to UCT. To be included in this component of the study, participants needed to be coloured, from low to middle SES backgrounds, Afrikaans-speaking, and primary caregivers of Afrikaans-speaking children under the age of 20-years-old. No restrictions were placed on the sample in terms of gender.

Members of the local cleaning company outsourced to UCT were approached, the study was thoroughly explained to them, and they were asked if they were interested in participating. This process continued until all 40 participants were recruited.

MEASURES

Autism Diagnostic Observation Schedule-2 (ADOS-2; Lord et al., 2012; Afrikaans translation). The translation of the tool (step 1) and reaching consensus on the terminology used (step 2), as well as the pre-piloting of the translated-ADOS-2 to a clinical sample (step 3) formed part of the language component of the project.

Modules 1 (administered to children who are pre-verbal or use single words), 3 (fluent speech and typically under 16-years-old) and 4 (fluent speech and typically over 16-years-old) were administered to seven children by Professor Petrus J de Vries (PdV), who is fluent in Afrikaans. PdV trained in the ADOS in 1998 and has been an international ADOS and ADOS-2 trainer since 1999.

In the ADOS-2, the Toddler Module and Module 1 are quite similar. Moreover, as the Toddler Module is designed for children aged 12 to 30 months, very minimal language is used during the administration. Therefore, administering this Module would not have been very beneficial for the language component of this study. Module 2 is an amalgamation of

Module 1 and Module 3 and all of the activities found in Module 2 are either found in Module 1 or 3. Therefore, it was also not necessary to administer Module 2.

Language and cultural appropriateness questionnaires (LCAQ; see Appendix B for the caregiver's version, Appendix C for the observer's version, and Appendix D for the examiner's version)**.** This questionnaire was used to establish the appropriateness of the language used in the Afrikaans ADOS-2, as well as the appropriateness of the ADOS-2 activities, for the clinical sample (step 3).

Before the Afrikaans ADOS-2 assessments commenced, a language questionnaire was given to the primary caregivers of the children (from the clinical sample) partaking in the assessments and explained to them. It required them to take note of any words used during the assessments that either they or their children did not understand. They were also asked if the language spoken during the assessments was similar in nature to the language they spoke at home. They also needed to write down which activities felt comfortable to them, which did not, and note whether anything during the assessment felt culturally inappropriate to them. All the participants who completed this questionnaire were literate.

Four pictures, namely balloons, bubbles, toys, and biscuits, were also included in the language questionnaire for the caregivers, and they were asked to name those items. Lastly, the caregivers were asked to provide any recommendations to improve the language and quality of the assessments.

The same questionnaire, worded appropriately for the audience, was given to the invited observers of the assessments (maximum 4). This questionnaire, however, did not include the four picture items.

After each assessment, the ADOS-2 examiner completed the same questionnaire as the observers, which was worded appropriately for his role.

Ethnographic questionnaire (EQ; see Appendix E). This questionnaire was used to investigate play, social interaction, and social activities for the community sample (step 4).

An ethnographic questionnaire, developed by Dr Amina Abubakar-Ali (unpublished) was used. The questionnaire looked at natural play, activities of daily life, and resources. It included aspects like what games children played and what toys they played with, whether the participants' children had attended birthday parties, and what happened at these parties. It asked whether participants had a "sink" to brush their teeth in or what they used as an alternative. It also investigated what social routines participants generally participated in.

Furthermore, it questioned whether the participants' children had any story or picture books, whether their children engaged with books, and whether they had ever read a story with their children. It also asked whether they tell stories to their children and whether their children had ever told stories to them.

This study used the same ethnographic questionnaire. We added an additional question and eliminated the need for a photograph of the place where the caregivers and their families brushed their teeth. The additional question involved social interactions in daily life, and asked how often children played/socially interacted with their caregivers or other adults.

Participants were asked the questions from the ethnographic questionnaire in an interview style and responses were written down verbatim.

ADOS-2materials questionnaire (AMQ; see Appendix F**).** This questionnaire was used to collect data to establish the appropriateness and familiarity of the materials found in the ADOS-2. It was administered to the clinical sample (step 3) and the community sample (step 4).

28 different materials from ADOS-2 kit were chosen and photographs of these materials were printed. These materials were then divided into two groups (pictures for group A and pictures for group B) according to whether they were functionally designed to be played with by younger (group A) or older (group B) children. Two materials were put in both groups, namely the remote-controlled bunny and the toy frog, so that group A had 15 different materials and group B had 15 different materials. The rationale behind putting the frog toy into both groups was that a similar study investigating the cultural appropriateness of the ADOS-2 for the isiZulu population in Kwazulu Natal, which is still underway, discovered that the frog toy was deemed culturally inappropriate for that population. It was important to investigate whether the same result would be found in this sample. As for the remote-controlled bunny, we considered that different cultures have different responses towards animals. Therefore, we put this material into both groups to investigate whether the material would be culturally appropriate for this sample.

Short questionnaires were designed to find out whether the children of the participants had seen and/or played with the materials, and if so, where they had seen/played with the item. If children had played with specific materials their caregivers were also asked how they had played with it. The caregivers were also asked if they had the materials at home, and if they did not, they were asked why.

When a photograph of an ADOS-2 material was presented, a questionnaire was filled out, so that each participant had a total of 15 questionnaires. The various questions were asked and responses were written down verbatim in an interview style. This method ensured questionnaire completion and understanding of the items. It also did not depend on the participants' literacy level.

To note is that primary caregivers of the children in the clinical sample were asked to complete the questionnaires *after* they had seen their children playing with the materials during the assessment. Thus, they were asked whether these items had been seen or played with *prior* to the assessment.

Socio-demographic questionnaire (see Appendix G)**.** This questionnaire was short and easy to complete, and it was completed by the full sample. It was used to capture data involving information about the participants' socio-demographics, including aspects such as age, sex, ethnicity, home language, and highest level of education reached. Highest level of education was listed as a range (unsure of highest level of education; 0 years of education; Grade 1 to Grade 6; Grade 7; Grade 8 to Grade 11; Grade 12; tertiary education). Annual household income was also questioned to confirm that the sample were from low-middle SES backgrounds. It was calculated in South African Rand (ZAR).For insight into the living circumstances of the sample, available material and financial resources was also queried. This question listed 17 various household items (e.g., refrigerator, television, washing machine etc.), utilities (e.g., flushing toilet, running water etc.), and financial services (e.g., banking, account at a shop etc.) and queried whether participants have access to these types of things (Myer, Stein, Grimsrud, Seedat, & Williams, 2008). Each participant obtained a final score out of 17 for this question.

It also included a section that focused on caregiver concerns regarding their child's development and directly asked if the child possesses a formal diagnosis already.

Participants were asked the various questions found in this questionnaire and their answers were written down verbatim. The information collected from this questionnaire was helpful to understand the participants in context and confirm their SES backgrounds.

PROCEDURE

Ethical considerations. This study complies with guidelines concerning research with human subjects as outlined in the Declaration of Helsinki (2008). Ethical approval for

the larger ASD screening and diagnostic study, within which this project is nested, has been granted by the UCT Faculty of Health Sciences Human Research Ethics Committee (see Appendix H), and by the School of Child and Adolescent Health at Red Cross War Memorial Children's Hospital (see Appendix I). This ethical approval covered the Afrikaans ADOS-2 pre-piloting component of this study (step 3). Ethical approval for inclusion of the AMQ and the EQ, as well as permission to recruit from Supercare Cleaning Services Group Pty Ltd outsourced to UCT, was granted by the UCT Psychology Department. The information and consent forms given to participants to sign, which was necessary for participation in this study, were also approved by the UCT Psychology Department. These forms are discussed in more detail under testing procedures below. Permission was also obtained from Western Psychological Services (WPS) to translate the original English version of the ADOS-2 into Afrikaans through a formal contract agreement with PdV.

All those involved were notified that the assessment and all the information obtained during it was strictly confidential and only available to the researchers involved. The hard copies of the data collected have been stored securely at the UCT Psychology Department and are only available to those researchers involved in the ASD studies. The names of the participants were converted into code during the data analysis process in order to protect the privacy of the participants. The participants were notified that this would occur.

Information from the clinical sample, who were recruited via the Developmental Clinic at Red Cross War Memorial Children's Hospital, was made available to the relevant Clinic doctors to feed back to the families. This procedure was made clear to the caregivers involved at the outset, in order to protect the confidentiality agreement.

There was no added risk to participants (and their children) who participated in this study. The participants were notified that at any time during the assessment process, as well as during the completion of the questionnaires, they could discontinue their participation without any penalty. The clinical sample was informed that their choices regarding participation would have no impact on the care they received at the Clinic.

Participants from the clinical sample were compensated for their travel costs and participants from the community sample were given ZAR50 for their participation.

Testing procedure.

Clinical sample. One participant (i.e., primary caregiver) and his/her child from the clinical sample were seen at a time. On arrival at the DCAP, participants were briefed on the study again. All participants were asked to sign three different consent forms. The first form

required consent by the primary caregiver to allow his/her child to part-take in the ADOS-2 assessment. This consent form clearly stated that the assessment would be filmed and could be watched by the research team only (see Appendix J; it is in English, because it is also used in the larger ASD screening and diagnostic project in this language). The second form required consent by the caregiver to complete the LCAQ while their child was busy with the assessment and after the assessment if need be (see Appendix K). The third form required consent by the caregiver to complete the AMQ after the assessment (see Appendix J). Participants answered questions from the *socio-demographic questionnaire* and their answers were written down verbatim.

At this point, participants (and their children) were encouraged to ask any questions about the research and/or the assessment. Once the participant was comfortable with the study and the procedure, the participant and his/her child were taken to a private room with a camera for recording purposes. The ADOS-2 pre-piloting assessment was then conducted with the child. Caregivers and one or more (maximum of 4) invited observers were invited to sit in the observation room (caregivers of children completing Module 1 assessments were invited to sit in the clinic room) while an ADOS-2 was administered by PdV. Parents and observers were asked to look for and document any aspects of language, procedures and/or materials that they felt were unusual, unexpected or culturally inappropriate in their versions of the LCAQ during the assessments. The ADOS-2 examiner completed his version of the LCAQ after the completion of the ADOS-2 assessment.

After the assessments caregivers were taken to a private room in DCAP and asked to finish their LCAQ if they had not done so. Thereafter, data was collected from them for the appropriateness of the ADOS-2 materials component using an interview style. The various photographs of the ADOS-2 materials were shown to the caregivers and they were asked questions pertaining to the AMQ. These answers were written down verbatim.

The pre-piloting assessment and the completion of the questionnaires took approximately 2 hours in total. The participants were compensated for their travel costs and thanked for participating in the research.

Community sample. Each participant was seen alone in a private room at the UCT Psychology Department. The study was explained to the participant and he/she was notified that participation was voluntary. He/she was asked to sign a consent form (see Appendix L). Participants consented to complete the EQ and the AMQ. The participant was then asked questions from the *socio-demographic questionnaire* and the EQ and his/her responses were

written down verbatim in an interview style. The participant was then shown the various photographs of the ADOS-2 materials and he/she was asked to answer the questions from the AMQ. These answers were also written down verbatim.

This session took approximately 45 minutes to complete. Once all the questionnaires were complete, the participant was thanked for his/her contribution to the research and given ZAR50 for participating.

DATA ANALYSIS

Descriptive statistics. Detailed descriptive statistics were calculated to investigate sample characteristics.

Questionnaires. A qualitative thematic approach was used to analyse the data from the appropriateness of the materials component and the activities and interactions component (step 3 and step4). This data was collected from the EQ, the AMQ and the LCAQ. This was done by coding the data, uncovering common themes, and extracting noteworthy quotes. The quotes were translated from Afrikaans into English by the researcher during the study write-up, and both versions were presented. English words used by the participants in the quotes were not italicized for effect. The data collected from the EQ, the AMQ and the LCAQ was also analysed quantitatively to obtain proportions, percentages, and frequencies in Microsoft Excel.

The data collected from the LCAQ (completed by the caregivers from the clinical sample, the observers, and the examiner; step 3), used in the language component of the study, was analysed by comparing the responses from the various audiences to reveal similarities and discrepancies. The data was further explored qualitatively to identify any problematic language use, culturally inappropriate activities, and suggestions for the improvement of the quality of Afrikaans ADOS-2 assessments.

The researcher coded and analysed all of the data to ensure consistency in the analysis.

ADOS-2 Modules. The notes on the ADOS-2 Modules made by PdV during the pre-piloting assessments (step 3) were used to adapt the final (in this study) wording and layout of the Afrikaans-translated ADOS-2 Modules.

RESULTS

DESCRIPTIVE STATISTICS

The sample consisted of two groups; a clinical sample (*N*=7) and a community sample (*N*=40). All participants were Afrikaans-speaking, of coloured ethnicity, from low-middle SES backgrounds, and were the primary caregivers of children who ranged between the ages of 12 months and 20-years-old. This information was collected via self-report by the participants in the *socio-demographic questionnaire.*

Basic descriptive statistics of the annual household income, highest level of education reached by the caregiver, and available material and financial resources (used to calculate a total asset index score out of 17) are presented in the sample characteristics tables below (Table 2 and Table 3). These variables, particularly the annual household income, confirmed that the sample were from low-middle SES backgrounds. The material and financial resources statistics provide some insight into the living circumstances of the sample, while the highest level of education reached by the caregiver statistics provide insight into the number of years of formal education attained by the sample.

In 2011 22.4% of coloured households in South Africa were living in poverty. Moreover, in 2011 the average annual household income (AAHI) for coloured households in South Africa was ZAR 139 190. Based on income trends in South Africa between 2006 and 2009, we can assume that the AAHI has increased since 2011(Statistics South Africa, 2011).

Participants from the study sample had an AAHI far below what was reported for the coloured population (clinical sample AAHI was ZAR 59 000 and community sample AAHI was ZAR 88145), and very far below what was reported for the white (ZAR 387 011) and Indian/Asian population (ZAR 252 724) in 2011. The maximum annual household income for the clinical sample (ZAR 102 000) was below the AAHI for the coloured population in 2011. The sample's AAHI can be more likened, to the black African population's AAHI in 2011 (ZAR 69 632). In South Africa, the levels of poverty are significantly higher for the black African population group than the levels amongst the other population groups. This information confirms that the majority of participants in the sample were in fact from low SES backgrounds. The maximum annual household income for the community sample (ZAR 204 000) was higher than the AAHI was for the coloured population in 2011, and closer to what the AAHI was for the Indian/Asian population. Therefore, we could not have concluded that all the participants in the sample were from low SES backgrounds, although the majority

were. Consequently, we concluded that participants in the sample are all from low to middle SES backgrounds.

The clinical sample (see Table 2) was comprised of six mothers and one grandmother (confirmed primary caregiver). Their ages ranged between 22-years-old and 64-years-old (*M* = 34-years-and-7-months-old). While the first language spoken by the caregivers and their children was Afrikaans, one caregiver (participant 10A) mentioned that her family often vacillates between English and Afrikaans when they speak.

The clinical sample children who participated in the Afrikaans ADOS-2 assessments were not included in the study sample (their caregivers were), but they were of essence to the study. They consisted of five males and two females, ranging between the ages of 3-years-and-7-months-old and 15-years-and-1-month-old (*M* = 7-years-and-8-months-old).

As the ADOS-2 is designed for individuals aged 12 months to any age, this wide age range of children was necessary to understand whether the language, activities, and materials used in the Modules would be appropriate for this group. Two Module 1's, four Module 3's, and one Module 4 were administered. While Module 3 is typically administered to children under 16-years-old, clinical judgement is required to assess whether the Module materials are appropriate for the examinee. The interview questions in Module 4 were more appropriate for participant 9B's child (15-years-and-1-month-old), and consequently, Module 4 was administered to him. The various ADOS-2 Modules administered yielded one classification of "ASD" (high severity score) and six classifications of "non-spectrum."

As the children were known to the Developmental Clinic at Red Cross War Memorial Children's Hospital, some of them had a clinical diagnosis, including Attention Deficit Hyperactivity Disorder, Ectrodactyly-Ectodermal Dysplasia-Clefting Syndrome, Intellectual Disability, global developmental delay, and mild ASD.

The community sample (see Table 3) consisted of 24 mothers, seven fathers, and nine confirmed primary caregivers, who were most often the grandparents of the children. Their ages ranged between 20-years-old and 59-years-old (*M* =34-years-and-7-months-old, like the clinical sample).All caregivers reported that their and their children's first language was Afrikaans, but 13 caregivers said that at home they often mixed English and Afrikaans.

As the data collected for the study was based on the children, but collected from their caregivers, descriptive statistics of the children were provided too. The community sample children consisted of 19 males and 21 females, ranging between the ages of 12-months-old and 19-years-and-11-months-old (*M* = 9-years-and-2-months-old).

Table 2. ***Clinical Sample Characteristics***

Variable	Mean (standard deviation)	Range
Participant (caregiver) age (years)	34.71 (14.01)	22 - 64
Children age (years)	7.86 (3.80)	3 years, 7 months - 15 years, 1 month
Participant education level in years	8.71 (1.50)	8 - 12
Annual household income	ZAR 59 000 (31192.95)	ZAR 15 000 – ZAR 102 000
Financial and material resources*	12.43 (2.15)	9 – 14

Note: *Financial and material resources include 17 various household items (e.g., refrigerator, television, washing machine etc.), utilities (e.g., flushing toilet, running water etc.), and financial services (e.g., banking, account at a shop etc.). Each participant obtained a final score out of 17 for this question.

Table 3. ***Community Sample Characteristics***

Variable	Mean (standard deviation)	Range
Participant (caregiver) age (years)	34.73 (10.60)	20 - 59
Children age (years)	9.19 (5.19)	12 months - 19-years, 11 months
Participant education level in years	8.5 (2.01)	4 - 13
Annual household income	ZAR 88 145.00 (49305.14)	ZAR 26 000 – ZAR 204 000
Financial and material resources*	12.40 (2.46)	7 – 17

Note: *Financial and material resources include 17 various household items (e.g., refrigerator, television, washing machine etc.), utilities (e.g., flushing toilet, running water etc.), and financial services (e.g., banking, account at a shop etc.). Each participant obtained a final score out of 17 for this question.

CLINICAL SAMPLE

Results from the clinical sample are reported first. We wanted to develop a basic understanding of the cultural appropriateness of the Afrikaans-translated ADOS-2 for a small clinical sample of Afrikaans-speaking, coloured families from low-middle SES backgrounds, before extending the analysis to a community sample. The analysis from the clinical sample focused on the appropriateness of the language used during the pre-piloting of the tool, a qualitative observation of the social interactions presented during the assessments, whether any ADOS-2 activities felt culturally inappropriate during the assessments, and the appropriateness and familiarity of ADOS-2 materials.

Comparison of examiner, observer and caregiver versions of the LCAQ. The responses given by the examiner and the observers of the pre-piloting assessments in the LCAQ were similar in terms of noting the language issues, culturally inappropriate items, and activities which felt uncomfortable. The observers, however, commented more frequently on troublesome features, as their role was solely to note these types of issues. The examiner provided more suggestions on how to improve future Afrikaans ADOS-2 assessments. There were no discrepancies between what the examiner said and what the observers said.

The caregivers, when they *did* note something which was problematic, were more likely to comment on what their children were unable to do or their children's difficulties with language, which was not specific to the assessment. However, some did note how their language differed from that of the examiner (e.g., dialect spoken and use of code-switching; see below).

Language used during Afrikaans ADOS-2 assessments. The pre-piloting of the Afrikaans ADOS-2 to a clinical sample, as well as the analysis of the examiner, observer and caregiver versions of the LCAQ provided valuable insights into the type of language spoken by the children of the participants, and how their language differed from that of the examiner. It also provided an opportunity to implement the Afrikaans Modules to ascertain if the wording and layout was correct and easy to use.

Dialect and style. A feature of the language used during the assessments which stood out significantly was the difference in dialect and language style used by the examiner and the children. Whereas the examiner spoke with a more formal and precise dialect and style,

children often spoke more slang or with a distinct coloured accent specific to Cape Town, known as "Kaaps*"* (Devarenne, 2010; Martin, 2000; van der Waal, 2012). Two caregivers (participant 12A and participant 10A) noted that the examiner spoke a more "suiwer" (pure/formal) type of Afrikaans than what they were used to.

> *Dit is eintlik meer suiwer.* - Participant 10A (referring to the examiners language).
> Translation: It is actually more pure/formal.

According to participant 12A, her child may not have understood the more "suiwer" words.

> *Sy verstaan nie altyd die suiwer Afrikaanse woorde nie…Ons praat nie heeltemal suiwer Afrikaans nie.* - Participant 12A (referring to her daughter).
> Translation: She does not always understand the pure/formal Afrikaans words…We do not speak completely pure/formal Afrikaans.

A lot more slang and informal language was produced during the *Conversation and Reporting* activity, the *Demonstration Task*, the *Description of a Picture* activity*,* and the *Telling a Story from a Book* activity, where spontaneous language use was encouraged. These activities were helpful to understand what "type" of Afrikaans the children spoke. When a strong *Kaaps* dialect was detected, the examiner made adjustments to certain words, in terms of pronunciation or accent, to facilitate rapport and promote understanding.

Although this discrepancy in the formality of language used between the examiner and the children existed, this distinctive feature did not disturb the essence of the assessment. When words were too formal/pure for the child to understand, the examiner provided alternative words.

Code-switching. Code-switching was another distinctive feature of the language used by the children in the assessments. Children often vacillated between English and Afrikaans between sentences and within sentences. Accordingly, to suit the flavour of the children's expressive language, the examiner made minor adjustments during the administration. For example, when necessary the examiner substituted a more commonly used English equivalent

for a less well-known Afrikaans word, or used an Afrikaans word and clarified it by giving the English equivalent if the Afrikaans word was not understood.

Participants 10A, 12A and 29B noted that the language spoken by the examiner differed to the language they spoke at home, because they made use of code-switching and the examiner did not (unless necessary).

> *Ek dink ons meng dit.* - Participant 12A (referring to language use).
> Translation: I think we mix it.

> *Ons praat Engels en Afrikaans deurmekaar.* - Participant 29B
> Translation: We speak English and Afrikaans mixed up together.

Important to note is that code-switching did not appear to impact the quality of the assessment. Rather, the substitutions by the examiner "normalised" the children's language.

Picture items. The four picture items (balloons, bubbles, toys, and biscuits) in the caregiver's version of the LCAQ, which needed to be named by the caregivers, also elicited many English responses. Five of the seven participants named the balloons as "balloons" (the other two responses were "ballonne" [Afrikaans equivalent]). Six participants named the bubbles as "bubbles" and only one participant provided the Afrikaans equivalent, "borrels." Four participants named the biscuits as "biscuits" and the other three gave the Afrikaans equivalent, "biskuit." The only item to be named more frequently in Afrikaans was toys (four participants named it "speelgoed," two named it "toys," and one incorrectly named a single toy within the collection).

Terminology used by the examiner which was not understood by caregiver or child. 20 words were listed spontaneously (see Figure 4) by the caregivers, examiner, and observers as words which either the children or the caregivers did not understand during the assessments. These words were mostly from the activities where questions were asked about emotions, personal relationships, and loneliness. Thus, the words typically had a more emotive quality about them. Research indicated that emotionally evocative terms are often difficult to translate (Sperber, 2004).Many of these words were better understood in English or with further explanation in Afrikaans.

Karakters (characters)
Strokiesprent (cartoon)
Moeras (swamp)
Toneelspel (play [noun])
Kêrel en meisie (boyfriend and girlfriend)
Angstig (anxious)
Eensaam (lonely)
Vrolik (cheerful)
Hartseer (sad)
Ontspan (relaxed)
Tevrede (content)
Omkrap (upset)
Vriend (friend)
Oor die weg te kom (get along with)
Ruskansie/blaaskansie (break)
Boelie (bully)
Borrels (bubbles)
Wasbak/sink (basin/sink)
Inspekteurs (inspectors)
Irriteer (irritate)

*Figure 4.*Problematic words listed spontaneously by caregivers, observers and examiner.

Qualitative observation of the social interactions during Afrikaans ADOS-2 assessments. The pre-piloting provided an opportunity to assess the way children from this sample interact with adults. Upon observing the social interactions and dynamics between the caregivers and their children (during Module 1 assessments), and the examiner and the children, it was noted that children in the clinical sample were quite comfortable interacting with adults. Participant 10A, who was classified with ASD by the ADOS-2 and scored predominantly in the Social Affect domain, struggled to socially interact with the examiner and his caregiver, but this was attributable to his social impairments, not to his cultural background. His caregiver, the observer, and the examiner noted nothing which felt culturally inappropriate during his assessment.

Inappropriate ADOS-2 activities according to LCAQ. The pre-piloting delivered further insight into whether or not the ADOS-2 activities and materials were culturally appropriate for this clinical sample. The activities which were most likely to evoke a feeling of cultural inappropriateness were noted by the caregivers, observers and examiner. The

Description of a Picture activity raised the most concern, because most of the children had never seen such a picture before (USA map scene), had never been to the USA, and were not familiar with the content of the picture.

Another activity which was mentioned was the *Demonstration Task.* A point which was raised was whether the examinees were familiar with brushing teeth by a basin. As some of these families were from very low SES backgrounds, they may not have had a basin in their homes. Furthermore, during the assessments some of these children preferred, or were more familiar with, the English equivalent of "wasbak" (basin). "Sink" was also given as the preferred word by one of the children. Therefore, the examiner adjusted the protocol slightly by first asking the children whether they call the place where they brush their teeth a "basin," "sink," or "wasbak." He then set the imaginary scene using the appropriate terminology.

Appropriateness and familiarity of ADOS-2 materials using the LCAQ and the AMQ.

LCAQ. During the assessments many materials were novel to the children. However, there were enough familiar materials to identify functional and creative play, so the novelty did not appear to impact the assessments negatively.

None of the toys were deemed culturally inappropriate for this sample according to the LCAQ. Two observers noted that participant 27A's child appeared afraid of the bubbles and the sounds made by the remote-controlled bunny. This seemed specific to the child and not specific to the child's cultural background.

AMQ. The 15 materials from group A were shown to participants with children younger than 10-years-old, and the 15 materials from group B were shown to participants with children aged 10-years and older. Four primary caregivers from the clinical sample were in group A and three were in group B.

Seen and played. All of the materials in group A had been seen and played with by at least one child (see Figure 5).All participants reported that their children had played with the shape-sorter, the plastic and material balls, Play-Doh, the baby doll and the letter blocks. The least familiar materials were the bubble blower and the remote-controlled bunny, which had both only been played with by participant 12A's child. All three caregivers who said that their children had not seen the automatic bubble blower said that their children had seen and played with bubbles that one manually blows through a dipping stick. Participant 10A

mentioned that her child would be afraid of the remote-controlled bunny in the questionnaire, but this was not evident during exposure to the material in the assessment. The material with the largest discrepancy between having had seen it and having had played with it was the plastic cup, plates and utensils. This was because all three caregivers who reported that their children had not played with the material said that it was used for eating and drinking and not for play.

In group B (see Figure 6), the only material which had never been seen was the PinArt. The bagatelle, pen spinning top and remote-controlled bunny had only been seen by participant 29B's child, but her child had not played with the remote-controlled bunny. All of the participants reported that their children had played with koki-pens (marker pens), and seen poster pictures, a remote-controlled car and small toy cars.

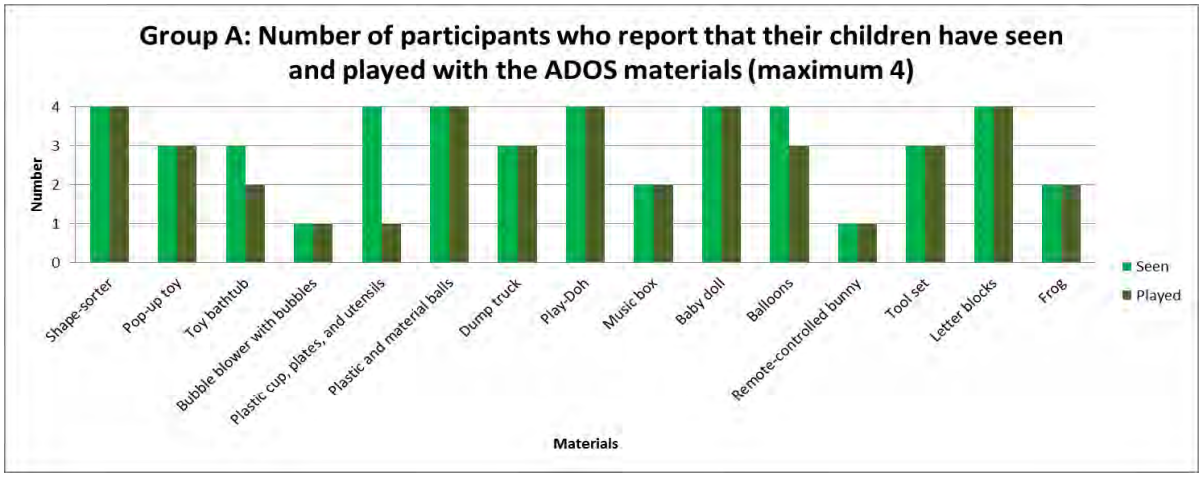

Figure 5. Group A: Number of participants from clinical sample who reported that their children have seen and played with ADOS-2 materials.

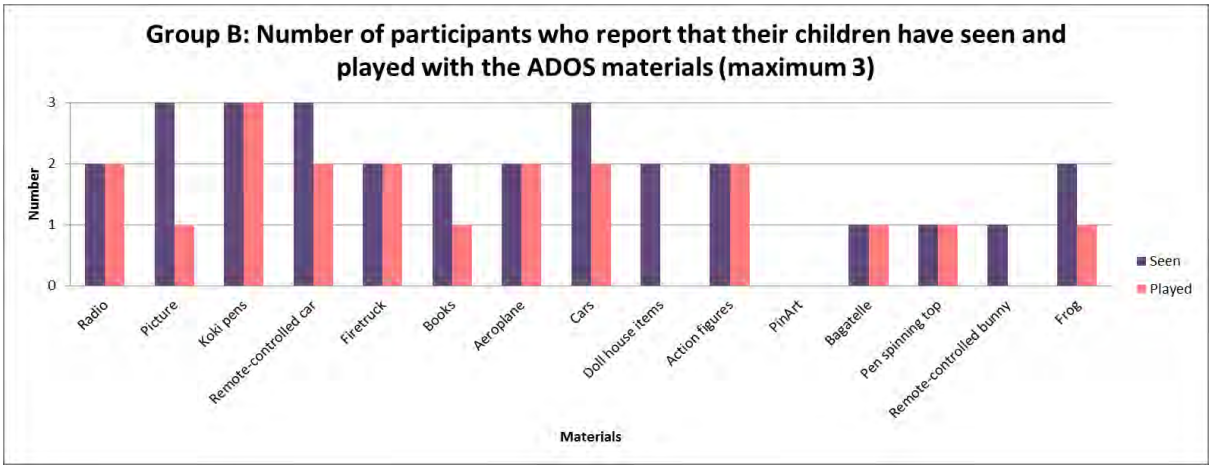

Figure 6. Group B: Number of participants from clinical sample who reported that their children have seen and played with ADOS-2 materials.

Location. The majority of the participants from group A and group B reported that their children had seen and/or played with the various materials at their homes, their relative's homes, schools/crèches, libraries, birthday parties, shops and/or restaurants. As this is a clinical sample, many caregivers also reported that the materials had been seen and/or played with at various therapy venues which their children attend (speech therapy, occupational therapy, physiotherapy, Red Cross War Memorial Children's Hospital, and doctors' consultation rooms).

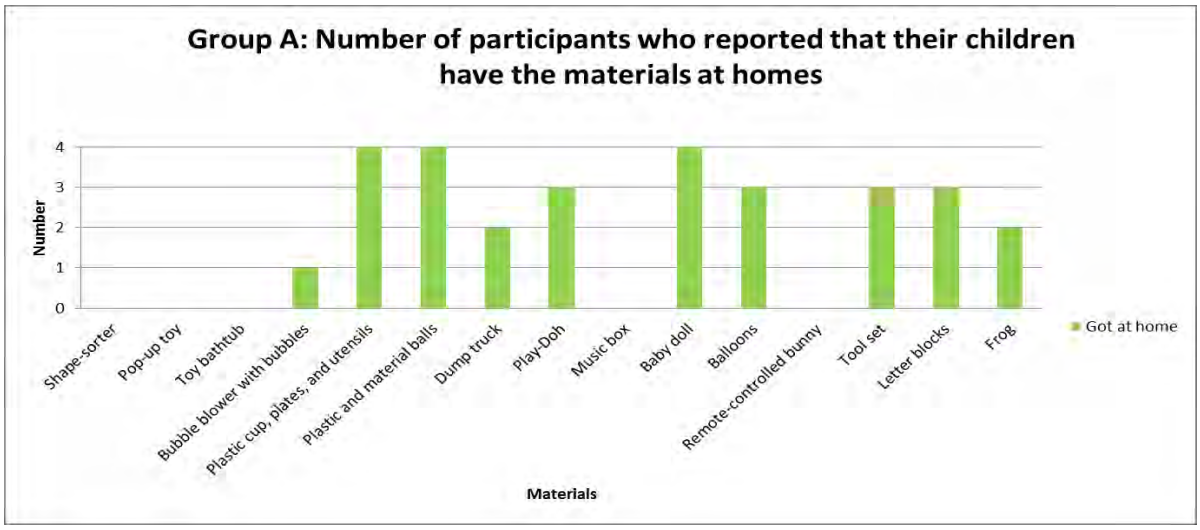

Figure 7. Group A: Number of participants from clinical sample who reported that their children have the ADOS-2 materials at their homes.

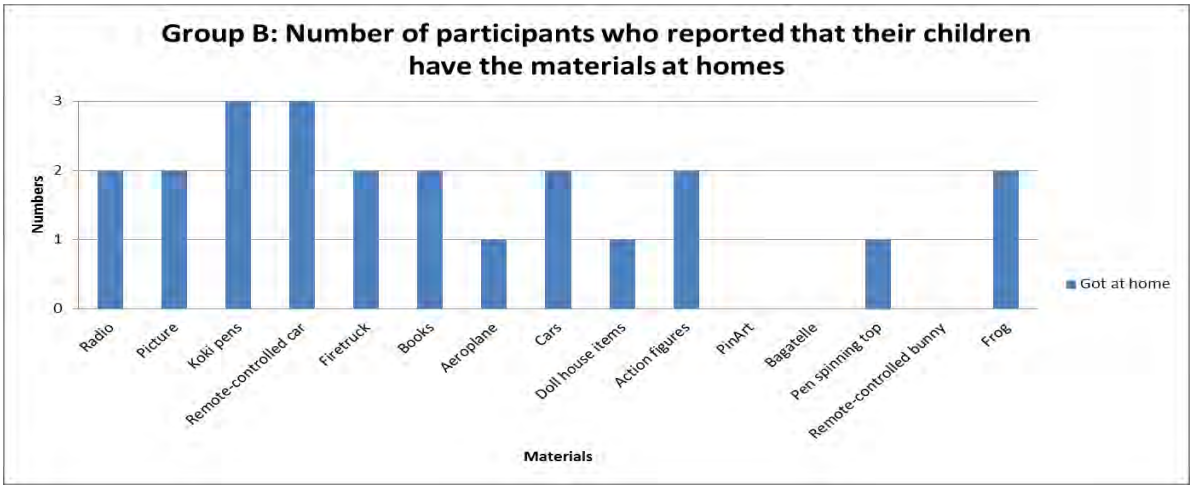

Figure 8. Group B: Number of participants from clinical sample who reported that their children have the ADOS-2 materials at their homes.

10 of the materials in group A are found in the homes of some of the participants (see Figure 7). All of the participants reported having the plastic cup, plates and utensils, the plastic and material balls, and the baby doll at their homes. Participant 12A's child is the only child who owns a bubble blower. No participants owned the shape-sorter, pop-up toy, toy bathtub, music box or remote-controlled bunny.

12 of the materials in group B were found in the homes of the participants (see Figure 8). The PinArt, bagatelle, and remote-controlled bunny were not owned by the participants. All participants said that they had koki-pens and a remote-controlled car at their homes. Participant 29B's child was the only child who owned the toy aeroplane and the pen spinning top, and only participant 9B's child was the only child who owned items found in a doll house.

When any participant reported not owning a material, they were asked why this was the case. The most commonly reported answers in group A and group B included that they had never seen the material before, they had not bought the material yet or they had not thought about buying the material at all, the material was too expensive, the material was inappropriate for the child's age, and certain materials were intended for a particular gender only. No response had an affiliation to cultural inappropriateness, except *possibly* the response given by participant 9B, who said that her child would be scared of the toy frog:

"Hy hou nie van sulke goed nie.Dit maak hom bang. Hy is baie bangerig."
Translation: He does not like these types of things. It scares him. He is very afraid.

This fear themed answer may not have had any cultural backing for this participant. But, we needed to further explore this possibility in the community sample, due to the fact that the toy frog was found to be culturally inappropriate for a sample in Kwazulu Natal (unpublished).

Play. Caregivers of the children that had played with the materials were asked *how* their children had played with the materials, to determine if the materials were played with functionally or not.27 materials listed in group A and group B had been played with by the children, and 24 of those materials had been played with functionally. The other three responses came from participant 27A, who did not know how her child played with letter blocks and participant 10A, who reported that her child mouthed Play-Doh and threw the dump truck around.

COMMUNITY SAMPLE

The community sample completed the EQ to give us an idea about what is typical for members of this community (Afrikaans-speaking, coloured families from low-middle SES backgrounds residing in the Western Cape) in terms of adult-child social interactions, social activities in daily life (which coincide with activities found in the ADOS-2), as well as play, and materials used during play. This sample also completed the AMQ, which provided further insight into the familiarity and cultural appropriateness of the ADOS-2 materials.

Once this information was analysed, we compared the play material data from the EQ with the data from the AMQ to observe any overlap between spontaneously listed play materials and materials from the ADOS-2 kit. We also noted which spontaneously mentioned games from the EQ may be played during an ADOS-2 assessment. Themes which emerged from the AMQ data were also noted.

Social interactions. Caregivers were asked how often their children social interact with adults; 57.5% said very often or every day, 20.0% said very seldom or never, 17.5% said over weekends or three to four times per month, participant 4B said "now and then," and participant 32A said approximately two times per month. More than 70.0% of caregivers said that they read story books and share stories with their children, and that their children share stories with them.

Social activities.

Social routines. A large number of ADOS-2 activities rely on social routines and routine events; anticipating them, demonstrating them, and reporting them. Examples of social routines include brushing one's teeth, bath time, going to certain places at certain times, celebrating certain occasions et cetera. To know what social routines this community practises, it was necessary to ask them about this aspect of their lives. The five social routines listed most frequently include specific times for bathing (67.5%), going to sleep (32.5%), and eating (30.0%), as well as going to Church on a Sunday or going to Christian youth groups (25.0%), and going out once a month (22.5%).

Brushing teeth. The *Demonstration Task* was noted to possibly be problematic for poverty-stricken families during the pre-piloting with the clinical sample. In a country, like South Africa, where many people live in poverty and running water is not always available,

let alone basins and taps, it was vital to investigate whether participants from the community sample had a basin at home.

80.0% of the sample reported having a basin at home where they brush their teeth. 57.5% reported that their basin had a warm tap and a cold tap, and 22.5% reported that their basin had a cold tap only. Of the eight participants who reported not having a basin at home, four made use of a cup, three made use of a bathtub, and one made use of a baby bath tub when brushing teeth.

Birthday party. 92.5% of the sample reported that their children had attended a birthday party. When asked what normally happens at a birthday party 67.5% of caregivers said that children enjoy eats and drinks, including party packets to take home. 22.5% reported that there is a birthday cake and 32.5% reported that their children sang at the birthday parties. It was evident that while some people could afford more lavish birthday parties, some could not. Participant 23A stated this clearly:

> *Jy kry daai wat het en daai wat nie het nie.*
> Translation: You get those who have and those who do not have.

Interestingly, the second most commonly reported feature at a birthday party, after the reporting of eats and drinks, was a hired jumping castle (reported by 65.0% of the caregivers).

Spontaneously reported play and play materials.

Imaginary play. It was unclear whether all of the participants understood what was meant by a "pretend/imaginary game." Many participants gave examples of made up games that include materials (e.g., tins, balls, and delineated blocks) and physical activity (e.g., running, kicking, throwing, and hopping), but did not actually involve imaginary play. 15 actual pretend games were mentioned (see Appendix M).

The most frequently listed pretend games included imaginary school play (27.5%), imaginary house play (12.5%), and imaginary play with dolls and doll house items (10.0%).

Play without materials. The community sample was asked what games their children play without any materials. 15 games were mentioned spontaneously (see Appendix M). The

most frequently listed games included hide and seek (42.5%), running games (35.0%), on-on or catch (17.5%), dancing (15.0%), and singing (15.0%).

Play with materials. Overall 56 different materials were listed spontaneously by the community sample when asked what materials their children played with (see Appendix M). The most commonly played with materials included dolls (42.5%), skipping ropes (35.0%), balls (32.5%), cars (27.5%), and items used for playing soccer (22.5%).

Interestingly, only two caregivers (5.0%) mentioned books as materials their children played with. However, when asked directly if their children owned books, 82.5% of the caregivers responded positively, and 95.0% had witnessed their children reading story books or looking at picture books.

Appropriateness and familiarity of ADOS-2 materials using the AMQ. The 15 materials from group A were shown to participants with children younger than 10-years-old, and the 15 materials from group B were shown to participants with children aged 10-years and older. Twenty primary caregivers from the community sample were in group A and twenty primary caregivers from the community sample were in group B.

Seen and played. When group A's participants were asked if their children had seen the various materials presented to them from the ADOS-2 kit, 64.3% of the total responses were endorsed positively.54.6% of the responses were that the various materials had been played with(see Figure 9). All the participants said that their children had seen balloons, a baby doll, and plastic cups, plates and utensils. Most of the children who had seen these materials, had also played with them (≥80.0%). All four of the participants who reported that their children had seen the plastic cups, plates and utensils, but had not played with them, reported that this was because these items were used daily as eating utensils and not as toys.

> *Dis vir eet, nie vir speel nie.* – Participant 32A
> Translation: It is for eating, not for playing.

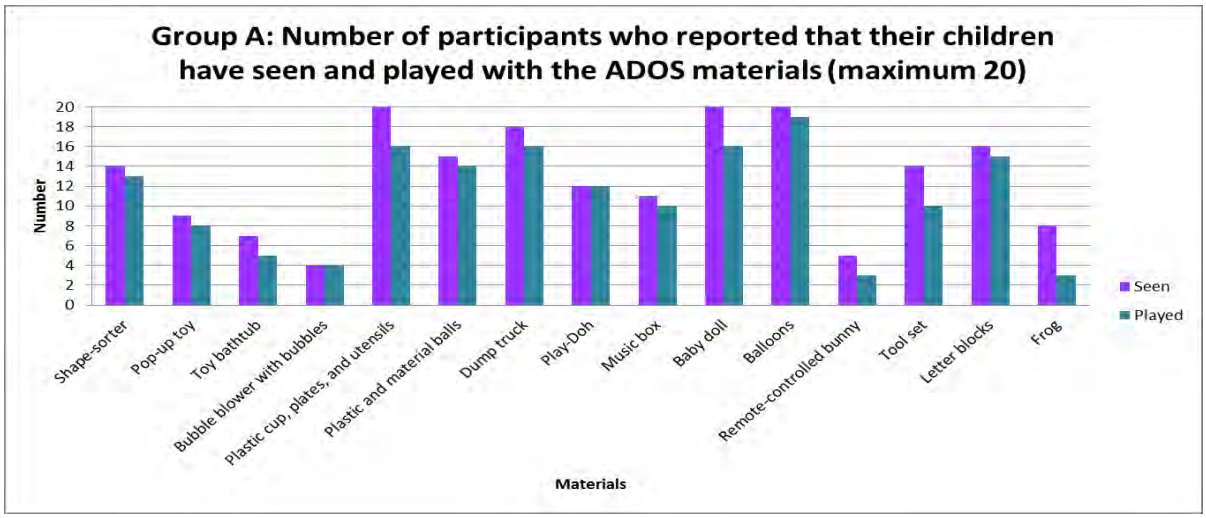

Figure 9. Group A: Number of participants from community sample who reported that their children have seen and played with ADOS-2 materials.

Other frequently seen and played with materials included the dump truck (90.0% said that their children had seen the material and 80.0% reported that their children had played with it), letter and number blocks (80.0% said that their children had seen the material and 75.0% reported that their children had played with it), and plastic and material balls (75.0% said that their children had seen the material and 70.0% reported that their children had played with it). Participants reported that these materials were readily available in the shops in their communities and were affordable:

> *Dit is baie* common *in enige gemeenskap; maak nie saak wat kleur, ras, ensovoorts. jy is nie.* - Participant 6A (referring to the plastic and material balls)
> Translation: It is very common in any community; it does not matter what colour, race et cetera. you are.

> *Dis 'n baie* common toy*; die is iets wat jy onmiddelik kan kry in die winkel.* - Participant 6A (referring to the plastic cups, plates and utensils)
> Translation: It is a very common toy; it is something that you can get immediately in the shops.

> *Dit kan ons bekostig.* - Participant 14A (referring to the balloons and the plastic and material balls)
> Translation**:** We can afford this.

The least familiar materials included the bubble blower (80.0% reported that their children had never seen or played with the material), remote-controlled bunny (75.0% reported that their children had never seen it and only 15.0% reported that their children had played with it), and toy bathtub (65.0% reported that their children had never seen the material and 25.0% reported that their children had played with the material). Noteworthy is that all 16 caregivers (80.0%) who reported that their children had not seen and played with the bubble blower, reported that their children had seen and played with "normal bubbles" with a dipping stick that one needs to blow.

The biggest discrepancies between having had seen the materials and having had played with them were found in the toy frog (40% reported that their children had seen the toy frog, but only 15.0% reported that their children had played with it), toolset (70% reported that their children had seen the material and 50% reported that their children had played with it), baby doll, and the plastic cup, plates, and utensils (all caregivers reported that their children had seen these materials, but 20.0% reported that their children had not played with them).

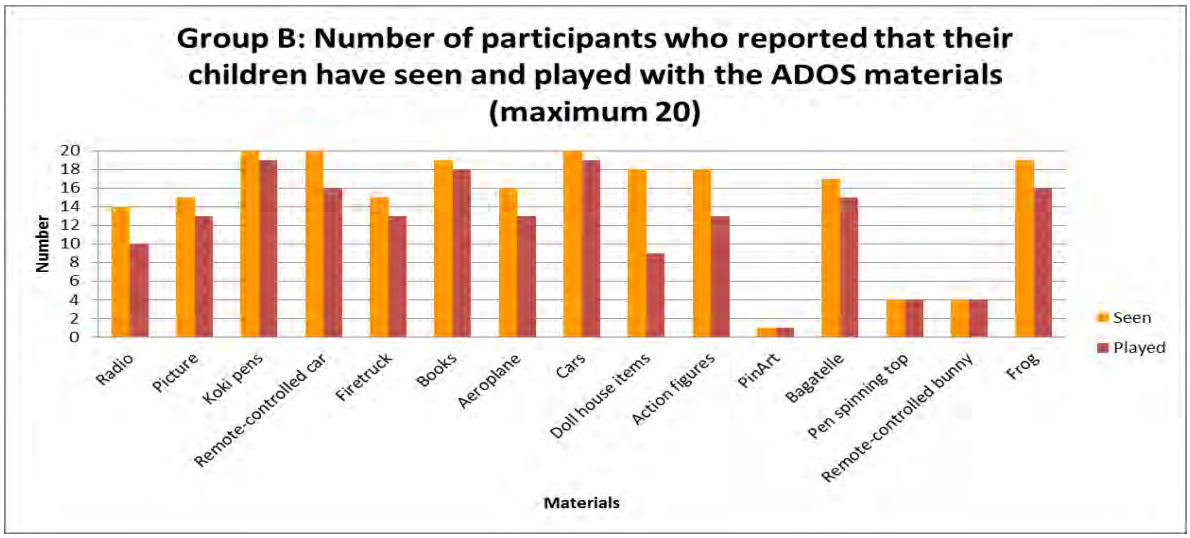

Figure 10. Group B: Number of participants from community sample who reported that their children have seen and played with ADOS-2 materials.

When caregivers from group B were asked if their children had seen the various ADOS-2 materials, 73.3% of the responses were endorsed positively. 61.0% of the responses were endorsed positively when caregivers were asked if their children had played with the materials (see Figure 10). All of the participants reported that their children had seen koki-pens, the remote-controlled car, and small toy cars. Most of those that had seen those materials had also played with them (≥80.0%).

The other most commonly seen and played with materials included the books (95.0% reported that their children had seen books and 90.0% reported that their children had played with it), toy frog (95.0% reported that their children had seen this material and 80.0% reported that their children had played with it), and the bagatelle (85.0% reported that their children had seen the material and 75.0% reported that their children had played with it). Although 90.0% of the caregivers reported that their children had seen action figures and doll house items, these materials had high discrepancies between having had seen them and having had played with them; 65.0% reported that their children had played with the action figures and 45.0% reported that their children had played with the doll house items.

The least familiar material was the PinArt. Participant 19B was the only participant who reported that her child had seen and played with it. 70.0% of the participants said that they had never seen anything like it before. Other unfamiliar materials included the remote-controlled bunny and pen spinning top (only 20.0% reported that their children had seen and played with these materials). 35.0% did, however, say that their children had played with a normal spinning top without the attached pen.

Location. The majority of the participants from group A and group B reported that their children had seen and/or played with the materials at their homes, their relative's homes, their children's friends' homes, schools/crèches, shops, restaurants, their workplaces, birthday parties, libraries, and/or seen them on TV.

When asked whether the participants have the materials at their homes, 60.0% of the responses from group A were negative (see Figure 11). Participant 49A was the only participant who reported owning the remote-controlled bunny. The least owned materials included the bubble blower (15.0%), toy bath tub (15.0%), pop-up toy (20.0%), and toy frog (20.0%).However, all of the materials were owned by at least one participant. All of group A's participants reported having plastic cups, plates and utensils in their homes. The other materials most commonly owned by participants in group A were the plastic and material balls (65.0%), dump truck (60.0%), and baby doll (60.0%).

When asked whether the participants have the materials at their homes, nearly half of the responses (49.0%) from group B were endorsed positively (see Figure 12). All participants owned the koki pens. Other commonly owned materials were the toy cars (85.0%), books (80.0%), and toy frog (75.0%). No participant owned the PinArt or remote-controlled bunny. However, 70.0% of participants said that they had never seen something

like the PinArt before. Participants 4B and 29B were the only participants to report owning the pen spinning top.

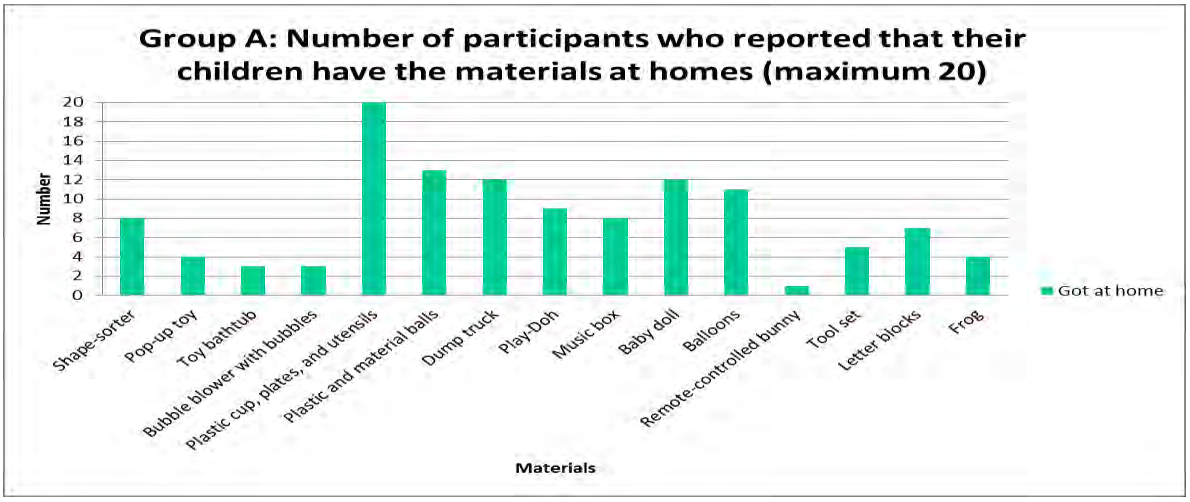

Figure 11. Group A: Number of participants from community sample who reported that their children have the ADOS-2 materials at their homes.

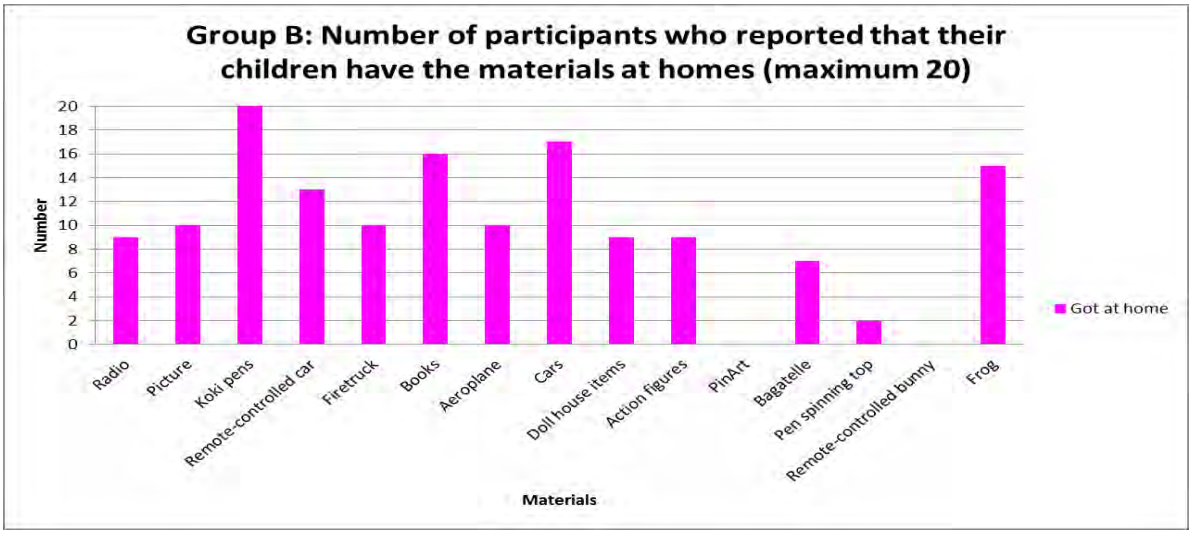

Figure 12. Group B: Number of participants from community sample who reported that their children have the ADOS-2 materials at their homes.

When any participant reported not having a material at their home, they were asked why this was the case. The most common responses in group A and group B included that they had never seen the material before, they had not bought the material yet or they had not thought about buying the material at all, the child has/will lose interest in the material, the material was too expensive, the material was not readily available at the shops within their

communities, the material was dangerous or associated with danger, the material was inappropriate for the child's age, and the material was intended for a particular gender only.

Play. When caregivers were asked *how* their children had played with the various materials to determine whether materials were played with functionally as intended, 46.7% of the materials were reported to be played with and played with functionally by *all* the participants. 94.2% of the responses to how the materials were played with were that they *were* played with and played with *functionally*. When the responses did not pertain to functional play it was either because the materials were played with inappropriately (1.7%; e.g., mouthing or throwing the toys), the children would not play with the materials (0.6%; the plastic cups, plates and utensils, as well as books elicited one response of this nature each), the caregivers did not know how their children played with the materials (0.3%), or the response was vague or unclear (3.2%).

Overlap between spontaneous play and aspects of play in ADOS-2.

Materials from EQ and AMQ. Of the 56 different materials listed when community sample caregivers were asked what materials their children played with regularly, 21 are found in the ADOS-2 kit too. The top 10 spontaneously listed materials were mentioned by four or more caregivers each. Five items from the top 10 are present in the ADOS-2 kit. In fact, the ADOS-2 kit contains two of the three most commonly played with materials; dolls (first in the top 10; 42.5% listed this material) and balls (third in the top 10; 32.5% listed this material). Other materials in the top 10 which can also be found in the ADOS-2 kit include toy cars (27.5%), a toy telephone (10.0), and a spinning top (10.0%).

Games from EQ. While 15 games without materials were listed spontaneously by the caregivers, only three of those are played during certain ADOS-2 assessments; singing (15.0%; the *Happy Birthday* song is sung during the *Birthday Party* activity), peek-a-boo (5.0%), and swinging in the air (2.5%).

A further four games could possibly be played during an assessment if the child initiates that type of play. For example, one of the four possible games is on-on or catch. This type of game is not specifically part of an ADOS-2 assessment. But, if a child initiates this type of play with an examiner it would be very telling in terms of what is looked for in an assessment (e.g., joint reference to objects, directing affect to others, shared enjoyment, initiation of joint attention etc.) and it would be welcomed. The four possible games,

however, are also the four games without materials most frequently spontaneously listed by the caregivers; hide and seek (42.5%), running games (35.0%), dancing (15.0%), and on-on or catch (17.5%).

Of the 15 actual pretend/imaginary games that were listed, only two come forth in the ADOS-2; imaginary tea time (2.5%; in the ADOS-2 plastic cups, plates and utensils are used during an imaginary birthday party) and "playing house" with dolls and doll-house items (10.0%; in the ADOS-2 examinees can play with materials found within a dollhouse).

Themes from the AMQ.

Gender stereotypes. A few common themes from the AMQ completed by the full sample emerged. One such theme was that gender stereotypes are portrayed quite strongly within this sample. 71.4% (five of the seven) of the participants in the clinical sample and 67.5% (27 of the 40) of the participants in the community sample commented on whether specific materials were intended for boys or girls only. They mentioned that their children did not and would not play with a certain material due to the fact that it was intended for the opposite gender. A few participants spoke emotively about this:

> *Ek sal hom nooit toelaat om met poppe te speel nie.* - Participant 6A (regarding baby doll).
> Translation: I will never allow him to play with dolls.

> *Hy is 'n* boy *man! Ons keer dit* strictly boys/girls. - Participant 23A (regarding baby doll).
> Translation: He is a boy man! We keep it strictly boys/girls.

> *Hy is 'n* boy. *Ek wil nie hom die verkeerde indruk gee nie, want* girls play with dolls. - Participant 49A (regarding baby doll).
> Translation: He is a boy. I do not want to give him the wrong impression, because girls play with dolls.

> *Sy is 'n* girl. *Ons kan nie vir* haar boy toys *koop nie*!"-43 (regarding dump truck).
> Translation: She is a girl. We cannot buy boy toys for her.

> *Hy het gesê hy is nie 'n moffie*[5] *nie!* - Participant 46B (regarding doll house items)
> Translation: He said that he is not a pansy!

To note, is that 15 females (two from the clinical sample and 13 from the community sample) and nine males (two from the clinical sample and seven from the community sample) were in group A, and eight females (there were no females in group B from the clinical sample) and 15 males (three from the clinical sample and 12 from the community sample) were in group B. Therefore, group A had a female gender bias and group B had a male gender bias. Gender stereotypes were mentioned somewhat equally (and often) by participants in both groups.

Considering the bias in females within group A, it was not surprising that the dump truck (nine community sample and two clinical sample participants said that this material was for males) and the toolset (six community sample and one clinical sample participants said that this material was for males) were the materials which elicited the most gender stereotypical responses. The other materials in group A which elicited gender stereotypical responses were the pop-up toy, (two community sample participants said that this material was for males), the toy frog (one community participant said that this material was for males), and the baby bath tub (six community participants said that this material was for females).

In group B, which had the male bias, nine of the 12 caregivers with male children from the community sample and all three of the caregivers with male children from the clinical sample said that the doll house items were intended for girls only. The other materials which evoked the most of these types of responses in group B were the fire truck and remote-controlled car (four community sample participants said that these materials were for males), and the toy aeroplane (two community sample participants said that this material was for males).

Poverty. Many participants reported that they live in poverty and cannot afford toys for their children. This came up very often when asked why participants did not have certain

[5] "Moffie" is a derogatory term used for a gay man. It is freely used within the gay community and the coloured community in the Western Cape (Pacey, 2014).

toys at home. Although many admitted that they would love to have certain toys at home, they could not afford it. They often reported that the toys shown to them from the ADOS-2 kit were expensive. Participant 2A said that most of the children in her community, including her own children, receive toys from charity organisations and acts of kindness from those that "do have."

> *Daar is nie geld om sulke goed te koop nie. Ek het so iets gesien by die Blankes.* - Participant 47B (regarding the remote-controlled bunny).
> Translation: There is not money to buy these types of things. I saw something like this by the Caucasians (whites).

> *Daar was nie altyd geld om duur* toys *te koop nie. Ons doen wat ons kan.*- Participant 43A (regarding the music box).
> Translation: There wasn't always money to buy expensive toys. We do what we can.

Fear, violence, and danger. Another theme that featured in the data relates to fear, violence and danger. 55.5% (22 of the 40) of the caregivers in the community sample and three of the seven caregivers in the clinical sample spoke of elements within this theme.

In group A, where the participants' children were younger, the issue of whether the materials were safe for their children to play with was raised. Specifically, participants were concerned about their children drinking the liquid used to blow bubbles, eating the Play-Doh (five caregivers in the community sample and one caregiver in the clinical sample spoke of this), and swallowing smaller objects.

The issues of "violent toys" and materials promoting violence were also raised. Specifically, the action figures seen by group B (three caregivers in the community sample mentioned this material) and the toolset seen by group A (two caregivers from the community sample mentioned this material) elicited the most emotive responses. Four of the community sample participants in group B said that their children would not play with the action figures even if they were given to them to play with. Furthermore, 72.5% of the community sample said that their children do not have action figure toys at home. Regarding the action figures, participant 20B said:

> *Ek het nie sulke goed by die huis nie.*
> Translation: I do not have these things at home.

Although participant 22B found no harm in her children playing with action figure toys, and she even had them at home for them to play with, she did acknowledge that some people do not want their children to play with them:

> *Mens sê die kinders moet nie met sulke goed speel nie. Daar is niks fout daarmee nie.*
> Translation: People say that the children must not play with these things. There is nothing wrong with it.

Regarding the tool set, participant 36A said:

> *Dit is 'n* violent toy. *Ek sal dit nie koop nie.*
> Translation: It is a violent toy. I will not buy it.

Many caregivers from the full sample mentioned that their children would be scared of certain toys. The materials that elicited most of these responses were the toy frog and the remote controlled bunny. To note, however, is that these two toys were also the two toys placed in both group A and group B. Nonetheless, many caregivers felt strongly that their children would not play with these materials, as they would be too afraid.

Concerning the toy frog, 47.5% (19 of the 40) of the community sample and four of the seven caregivers in the clinical sample in group A and group B reported having this material in their homes. Those that did not have the material at their homes were asked why. 37.5% of the caregivers in the community sample and one caregiver in the clinical sample responded with a fear-themed answer and said that even if their children were given the material to play with they would refuse. Below are some quotes from participants who felt strongly that their children would not play with the toy frog.

> *Sy hou nie van hierdie goed nie. Sy sal nie aan slange,* spiders *en paddas vat nie. Die kinders is bang vir daai. Sy sal* hysterical *raak met hierdie goed.* - Participant 2A
> Translation: She does not like these things. She will not touch snakes, spiders and frogs. Children are scared of those. She will get hysterical with these things.

Ons sal nie dit vir haar koop nie want sy's bang daarvoor. - Participant 14A
Translation: We will not buy it for her because she's scared of it.

Die kinders sal bang is! Hulle like *nie die grillerige goed nie.* - Participant 1B
Translation: The children will be scared! They do not like the creepy stuff.

Hierdie ding gat hy huil oor. Hy is bang! Hy sal nie naby hierdie ding kom nie! - Participant 48A
Translation: He will cry over this thing. He is afraid! He won't come near this thing!

Participant 16A acknowledged that other children would be scared of the toy frog, but said that her own child would play with it, because he is not a "scared child."

Baie kinders sal bang wees vir paddatjies, slangetjies ensovoorts. [Child's name] sal speel met die padda. Hy is nie 'n bang kind nie.
Translation: A lot of children will be scared of frogs, snakes et cetera. [Child's name] will play with the frog. He is not a scared child.

Not nearly as noteworthy as the responses to the toy frog, but interesting nonetheless, is that 10.0% (four caregivers) of the community sample and one caregiver from the clinical sample said that they did not have the remote-controlled bunny at their homes due to the fact that their children would be scared of this material. These caregivers, along with one other caregiver from the clinical sample who did have a remote-controlled bunny at her home, said that their children would not play with the toy if they were given it to play with. The most significant response pertaining to the remote-controlled bunny came from participant 36A:

Dit is soos 'n Chucky doll!
Translation: It is like a Chucky doll!

The theme of danger around play was also highlighted in a different way when participants spoke about the danger that they face on a daily basis within their communities,

which impacts on their children. They stated that it was not safe for their children to play outside.

> *Hulle skiet baie daar in ons gemeenskap.* - Participant 11B
> Translation: They shoot often there in our community.

> *Buite is gevaarlik, daarom speel hulle in die huis.* - Participant 35B
> Translation: Outside is dangerous, therefore they play in the house.

Upon showing participant 47B the photo of the bagatelle, she assumed it was a large pin-ball machine one finds in game shops. She immediately said that she does not have one of these at her home, because:

> *Jongens sal in breek vir die* games. *Ek bly in 'n baie gevaarlike plek.*
> Translation: Young people will break in for these games. I live in a very dangerous place.

Educational toys. Many participants commented on the good educational value of the materials. The musical toy which plays animal sounds, the number and letter blocks, and the shape sorter were the materials which elicited most of these responses. Many caregivers who did not have such materials in their homes said that they would like to have them. Most often the reason for not owning the materials was because they were deemed expensive. One particular participant (participant 2A) who was seen incidentally after she had completed the questionnaires said:

> After the assessment it made me more conscious of educational toys.

DISCUSSION

The aim of this study was to establish whether the Afrikaans ADOS-2 might be culturally appropriate for coloured, Afrikaans-speaking individuals from low-middle SES backgrounds living in the Western Cape. The study used a mixed method approach, including four steps, to achieve the aim.

The first step was to translate the original English ADOS-2 into Afrikaans. The second step included generating a pre-pilotable version of the Afrikaans ADOS-2 through expert committee discussions and reaching consensus of terminology. As a pre-pilotable version of the Afrikaans ADOS-2 was necessary to run this study, the translation procedure, including what still needs to be done to complete the translation and validate the tool, were discussed in the background to this study. What must be emphasised here, is that one should not underestimate how strenuous, time-consuming and expensive such a task can be if it is executed properly.

The primary focus of this study was on the third step and the fourth step of the mixed method approach used. The third step included pre-piloting the Afrikaans ADOS-2 to a clinical sample to focus on the appropriateness of the language used in the translated Afrikaans ADOS-2, the ADOS-2 activities and social interactions, and the ADOS-2 materials. The fourth step included an ethnographic investigation of play, social interaction, and social activities, as well as a survey of ADOS-2 materials in low-middle SES, Afrikaans-speaking families in a community sample.

Therefore, in order to achieve the aim we investigated three key components of the ADOS-2: 1) The appropriateness and accessibility of the language used in the Afrikaans translation of the ADOS-2, 2) the appropriateness of the social interactions and activities in the ADOS-2, and 3) the appropriateness and familiarity of materials in the ADOS-2. Investigating these components was useful to establish whether a method bias may exist when administering this tool to this population.

The data collected from the full sample was used to make a collective decision about whether the tool might be culturally appropriate for coloured, Afrikaans-speaking individuals from low-middle SES backgrounds living in the Western Cape. The three key components of this study will be discussed separately in detail below.

RESULTS AND RECOMMENDATIONS

The appropriateness and accessibility of the language used in the Afrikaans ADOS-2. Pre-piloting a tool to observe language accessibility is known to research involving tool translation (Maneesriwongul & Dixon, 2004). However, what we introduce and promote strongly is that during this process, one observes the language use and accessibility from a cultural appropriateness standpoint. Not only must the language be understood by the target population, the language must be *appropriate* for their culture.

As our target population were members of the low-middle SES, coloured, Afrikaans-speaking community from the Western Cape, we needed to understand what was appropriate for their culture in terms of language use. We discovered that their language, Kaaps, is an inextricable component of their culture and plays a vital role in their identity formation (Devarenne, 2010; Martin, 2000; van der Waal, 2012). The most prominent features of Kaaps noted during the pre-piloting of the Afrikaans ADOS-2 to the clinical sample, was the distinct dialect and language style used by the children, as well as the use of code-switching during speech by both caregivers and children.

Dialect and style. Kaaps, as a vernacular of Afrikaans, has a unique dialect (Martin, 2000) which differs significantly from the more formal Afrikaans spoken by the middle-high SES, white population of the Western Cape. The children from the clinical sample spoke in the distinct Kaaps dialect, while the examiner spoke in a more formal Afrikaans dialect and style. This, generally, did not appear to negatively impact the nature of the assessments. However, there was an instance where one of the caregivers noted that her child did not understand some of what the examiner said, due to the formality of the words he used.

The adjustments made by the examiner to his speech to suit the dialect spoken by the children (e.g., pronouncing certain words in the same way as the children did), really appeared to facilitate rapport-building and understanding. Children acknowledged his attempts and the assessments felt more comfortable and culturally suited for the children when these adjustments were made.

The examiner noted that for future Afrikaans ADOS-2 assessments with examinees from low-middle SES, coloured communities in the Western Cape, "standard" Afrikaans should be used and adjustments should be made to the formality of the words and language style to accommodate examinees, if necessary. This also implies that the examiner needs to be familiar with and responsive to the difference between a formal, "standard" Afrikaans dialect and the distinct dialect associated with Kaaps. If the examiner only employs formal, "standard" Afrikaans when administering the Afrikaans ADOS-2 to this population, there is risk that the examinees may not always understand what is being said to them or asked of them. This can have major implications for the examinee's ADOS-2 outcome scores, as communication and responsiveness is weighed heavily in this tool. In societies where different dialects of the same language are spoken, examiners should make sure that examinees are not unfairly penalized during assessments because of their dialects, which may differ to the dialects spoken by examiners (Payne and Taylor, 2002).

As the ADOS-2 is a semi-structured assessment tool, guidelines for administration are available (Lord et al., 2012). However, the phrasing (and in this case, the dialect) of interview questions may be modified to suit the flavour of the expressive language and age of the examinee (Lord et al., 2012).

Code-switching. Code-switching is a very common phenomenon in multilingual countries, like South Africa. It is a natural pattern of speech conducted by fluent bilinguals during informal conversations (Simango, 2011). Children from the clinical sample, as well as their caregivers, often used code-switching during speech. Code-switching by the children was noted by the caregivers, the examiner, and the observers of the ADOS-2 assessments in the LCAQ. Caregivers also mentioned that they use code-switching in their daily speech. The verbal responses to questions from the various questionnaires given by the caregivers in the full sample also displayed this feature of their language. The quotes used in this study demonstrate the way they use code-switching quite clearly. English words were not italicised in the (mostly) Afrikaans quotes to highlight code-switching. Moreover, when caregivers were asked to name the picture items (bubbles, balloons, biscuits, and toys) in their versions of the LCAQ, most of their responses were given in English.

According to van der Waal (2012), code-switching "has become a marker of Cape coloured identity…Using single English words, when speaking Afrikaans, is associated with a warm, local sociability" (pp. 457). Thus, as part of their means of communicating socially, this group of people utilise code-switching. Social communication is one of the primary focuses of the ADOS-2. As an examiner of the Afrikaans ADOS-2 to this population, taking note of the examinee's use of code-switching during an ADOS-2 assessment and implementing it where necessary, may foster social communication by the examinee during the assessment, as well as facilitate rapport building by making the examinee feel understood and accepted.

As the ADOS-2 is normally administered in the mother tongue of the examinee (and examiner; translators are not used), administering the Afrikaans ADOS-2 to Afrikaans-speaking participants will be permissible once WPS has reviewed and approved the translation. WPS need to be aware that examinees from this population are likely to benefit if the examiner occasionally uses English words during Afrikaans ADOS-2 assessments. Permission for the examiners to code-switch, where necessary, should be granted.

Terminology. The words listed in Figure 4 are proof that sometimes important terminology (i.e., terminology used in the ADOS-2 which examinees need to respond to) used by ADOS-2 examiners is not understood by examinees. This can radically impact ADOS-2 outcome scores. For example, the emotively-charged words (e.g., angstig, eensaam, vrolik, hartseer, ontspan, tevrede, omkrap) listed are used in the *Emotions* activity, the *Social Difficulties and Annoyance* activity, and the *Loneliness* activity. Without knowing what these words mean, examinees cannot answer the interview questions found in these activities.

We suggest that if any of these words are used during Afrikaans-ADOS-2 assessments in the Western Cape with coloured individuals from low-middle SES backgrounds, the examiner should ensure that these words are understood. If a word was not understood, or if the examiner is unsure whether a word was understood or not, the examiner should clarify meaning with explanation, providing a more commonly-known Afrikaans alternative, or even providing an English alternative. This suggestion is not specific to these listed words only and can be applied to any complex term used during an ADOS-2 assessment. However, special attention must be paid to words pertaining to emotions.

Importantly, although the language data was collected from the clinical sample, it was noted that code-switching was heard in the verbal responses given by community sample caregivers too. Kaaps is spoken by the full sample. Therefore, we can make a recommendation about the way the Afrikaans ADOS-2 should be administered to coloured examinees from the Western Cape from low-middle SES backgrounds, based on the data collected from full sample.

In summary, if these language suggestions (i.e., code-switching is acknowledged and used when necessary, modification of dialect/language formality is used when necessary, and complex terminology is clarified if not understood by examinee) are applied when conducting an Afrikaans ADOS-2 assessment with a coloured examinee from the Western Cape who comes from a low-middle SES background, the language will mostly be culturally appropriate for the examinee. Maintaining cultural sensitivity is very important.

The appropriateness of the social interactions and activities in the ADOS-2. As the focus of the ADOS-2 is on observation of social behaviours and communication, activities are designed to provide interesting and standard contexts in which interactions can occur (Lord et al., 2012). It is important that these activities, however, are culturally appropriate for those being assessed by the tool. The activities are meant to be administered

by the ADOS-2 examiner in such a way that the activities appear sufficiently intriguing, so that the examinee would want to participate in the social interaction (Lord et al., 2012).

In terms of cultural appropriateness, this focus, therefore, assumes that the activities are culturally appropriate for the examinee, and that the social interaction is culturally appropriate. Specifically, when dealing with child examinees, the examiner needs to be sure that the culture which the child is from accepts children socially interacting with adults and deems this type of interaction culturally appropriate. In some cultures it is highly unlikely that an adult and child, especially an unfamiliar adult and child, interact on a social level (Carter et al., 2005; Norbury & Sparks, 2013).

Social interactions. The results indicated that Afrikaans-speaking, coloured children from low-middle SES backgrounds residing in the Western Cape socially interact with adults. Therefore, when an ADOS-2 examiner socially interacts with a child examinee, the social interaction would be deemed culturally appropriate by this population.

Activities. Pre-piloting the Afrikaans ADOS-2 to the clinical sample provided a good opportunity to witness whether any activities were culturally inappropriate for the sample. The USA map scene picture in the *Description of a Picture* activity was noted to be culturally inappropriate for the clinical sample. Although we did not administer this activity to children from the community sample, we assume that the same would have held true for them as well. We suggest that the feast scene picture be used instead of the USA map scene picture when this activity is administered to the Afrikaans-speaking, coloured population from low-middle SES backgrounds living in the Western Cape. In keeping with this finding, when discussing tool content which may be inappropriate for some cultures, Norbury and Sparks (2013) provided the example of using a picture of the USA map in tools.

Another activity which raised concern during the pre-piloting of the Afrikaans ADOS-2 to the clinical sample was the *Demonstration Task*. Observers of the ADOS-2 assessments were concerned that some examinees may not have had a basin at home due to their low socio-economic backgrounds. Also, concern around what examinees may name the place where they brush their teeth was raised (e.g., basin, wasbak [Afrikaans equivalent of basin], or sink).

Therefore, it was important to ask the community sample whether or not they had a basin at home where they brush their teeth. Although most of the community sample had access to a basin or sink, there were some families who were not fortunate enough to have

this access. The results indicated that demonstrating brushing teeth during the *Demonstration Task* may be problematic for some individuals from this population.

The ADOS-2 examiner should first ask the examinee from this population where he/she brushes his teeth before administering this activity. The examiner should also clarify what the examinee names the place where he/she brushes his/her teeth (e.g., basin, wasbak [Afrikaans equivalent of basin], and sink) to avoid language confusion. Furthermore, if the examinee does have a basin at home where he/she brushes his/her teeth, the examiner should query how many taps his/her basin has before drawing the outline of the imaginary basin and taps. Almost a quarter of the community sample reported having only one tap at their basin. If the examinee stipulates that he/she has one tap at his/her basin, the examiner should only draw an imaginary basin with one tap. If the examinee does not make use of a sink/basin when brushing his/her teeth, the alternative demonstration of washing hands with soap should be used during this activity. Most of the community sample reported that bath time is a specific social routine that they practice. The demonstration of washing hands utilises some of the same materials necessary for bathing, and therefore, this activity should be appropriate for the population.

Although no concern was raised during administrations of the *Birthday Party* activity to the clinical sample during the Afrikaans ADOS-2 assessments, we felt that it was necessary to investigate whether participants from the community sample were familiar with the type of birthday party demonstrated in the ADOS-2. Almost all of the participants reported that their children had attended a birthday party. Therefore, the activity as a *whole* will be familiar to members of this population. However, certain elements of the *Birthday Party* activity might be unfamiliar. More than three-quarters of the community sample did not report a birthday cake at the birthday parties their children attended/had, and only one-third of them reported that their children sang the *Happy Birthday* song at these parties. Thus, the ritualized routine of the *Birthday Party* may be jeopardized by unfamiliarity with elements including singing the *Happy Birthday* song and blowing out the candles on the cake (if child is unfamiliar with a birthday cake). We recommend that examiners ask caregivers if these elements would be novel to their children before administering this activity. If caregivers report novelty, other forms of ritualized social events, such as having a tea party or having a picnic (Lord et al., 2012) can be used instead. The alternatives should be familiar as all participants from the full sample reported having the plastic cup, plates, and utensils at home, and eating and drinking was commonly reported at a (birthday) party.

In summary, when considering the cultural appropriateness of the ADOS-2 activities and social interactions for the clinical sample, the results suggested the following. Social interactions between children and adults were deemed culturally appropriate for the sample. Overall, the ADOS-2 activities were mostly culturally appropriate. The USA map scene picture in the *Description of a Picture* activity was culturally inappropriate, and the *Demonstration Task* raised some concern.

For the community sample, social interactions between children and adults were also culturally appropriate. The brushing teeth activity in the *Demonstration Task* and the *Birthday Party* activity require input from the examinee and the caregiver, respectively, before administration. No other activity raised concern about cultural inappropriateness.

The appropriateness and familiarity of ADOS-2 materials.

Clinical sample. During the Afrikaans ADOS-2 assessments with the children from the clinical sample no materials were noted to be culturally inappropriate. What was noted was that some of the materials appeared to be novel to the children, especially the more elaborate materials, such as the remote-controlled bunny, the PinArt, the pen-spinning top, and the bagatelle. When asked which activities felt uncomfortable during the ADOS-2 assessment, participant 42A said:

Die hasie. Geen belangstelling getoon. Dalk vreemd met tiepe speelding?
Translation: The bunny. No interest shown. Maybe foreign with type of toy?

The more simple materials, like the koki-pens (marker pens), toy cars, baby doll, plastic and material balls, and the plastic cup, plates and utensils, were more familiar to the children. Nonetheless, according to the caregivers, most of the materials were familiar to the children and most of them were played with functionally. One caregiver said that her child would not play with the toy frog and one caregiver said that her child would not play with the remote-controlled bunny if they were given them to play with, because their children would be scared of the materials.

The theme of simpler materials being familiar and elaborate materials being unfamiliar was confirmed in the AMQ. When caregivers from the clinical sample were shown photos of the materials and asked questions about them in the AMQ, more elaborate materials were more unfamiliar to their children, while simple materials were more familiar. Caregivers stated that *they* were also familiar with the simpler materials and could afford

them, while some of the more elaborate materials they had never seen before, and those that they had seen, they could not afford. Caregivers reported that most materials were played with functionally by their children.

Most of the materials were found in the homes of the participants. Many caregivers from the clinical sample reported that the reason their children did not have specific materials at their homes was because the materials were intended for the opposite gender to that of their children. Caregivers felt strongly that their children would not play with materials intended for the opposite gender. A large proportion of children from the clinical sample had also seen and played with similar materials at various therapy venues they attend.

Therefore, taken together, the study results revealed that most of the ADOS-2 materials were culturally appropriate for and familiar to the clinical sample. However, there were a few elaborate toys which were unfamiliar, and questions were raised about the toy frog and the remote-controlled bunny.

Community sample. In the community sample, most caregivers reported that the ADOS-2 materials had been seen and played with. Again, more elaborate and expensive materials (e.g., the remote-controlled bunny, the PinArt, the bubble blower, and the pen-spinning top) were unfamiliar, while cheaper and more accessible materials (e.g., the materials and plastic balls, the letter and number blocks, and books) were familiar. The same theme emerged regarding owning the materials, but to a greater degree. However, there was only one material (of the 28), which was not owned by any participant, namely the PinArt. But, most caregivers reported that they had never seen this material before. Many materials were seen and played with in locations outside of the participants' homes.

Many participants expressed their desire to buy more elaborate materials for their children, but they were limited financially to what they could afford. Some caregivers also stated that they would have loved to buy their children some of the more "educational" materials from the ADOS-2 (e.g., the letter and number blocks, the shape-sorter, and the musical toy which makes animal sounds), but they could not afford it. Also, many materials were foreign to the caregivers themselves.

Despite the novelty of some materials and the fact that some children did not have access to the different materials at their homes, the majority of the time caregivers reported that their children would play with the various ADOS-2 materials in a functional manner, whether they had encountered the materials or not.

Common themes.

Poverty and novelty. As all of the participants were from low-middle SES backgrounds, the fact that a number of the materials were novel to them and their children was not surprising. The culture, from which this population stems, is not the reason that some of the children do not have access to some of the more elaborate materials. Instead, circumstances of poverty are to blame. Also, many community sample caregivers stipulated that the shops in their communities do not stock such elaborate materials. In the Western Cape communities, where many coloured, low-middle SES, Afrikaans-speaking individuals live, unemployment and poverty are rife. This, however, appears to be a "social leveller" (Muyeba & Seekings, 2011, pp. 667), as members of these communities share this experience with one another.

Novelty is not necessarily a bad thing in the ADOS-2. What is important is the way the examinee behaves and communicates (Lord et al., 2012). Encountering a novel material may even be helpful to elicit a different response from the examinee from that which would be elicited through encountering familiar materials. For example, responses to novel materials may include changes in facial expression, gesture, and gaze, and the child may reference his/her caregiver during an interaction of this nature. All of these behaviours are telling and rated during an ADOS-2 assessment.

What must be kept in mind, though, is that when any child encounters a novel play material, especially an elaborate one (e.g., the PinArt), there is a good chance that the child might become preoccupied with the material for a while. Preoccupation with objects as a restricted interest is coded in the ADOS-2. Therefore, examiners should be cautious regarding how they interpret behaviour with unfamiliar materials. If a child appears to have a preoccupation with a material to an extent that it may be interpreted as a restricted interest, examiners should check whether the material is novel to the child by asking the caregiver, and interpret the behaviour cautiously.

While an element of novelty can be useful to elicit certain behaviours, using a tool which is comprised of materials completely unfamiliar to its participants is unwanted. It is expected that certain materials in the ADOS-2 will be foreign, especially outside of the country the tool was designed in. Therefore, we did not expect every material in this tool to be familiar. But, we were unsure whether *too* many materials would be unfamiliar. Also, familiar materials are useful to elicit functional and creative play, which is also rated in the ADOS-2.

The results from the full sample indicated enough familiarity with the ADOS-2 materials to warrant the tools use with this population. Moreover, as most of the materials were familiar to the full sample, there are enough familiar materials which could be used during ADOS-2 assessments with this population to identify functional and creative play. However, as there were materials which were novel, especially the more elaborate ones, examiners must take caution when interpreting preoccupation with materials as restricted interests. As the PinArt was the most novel material to the sample, we suggest not using it during an ADOS-2 administration with this population.

Gender stereotypes. Despite circumstances of poverty and inaccessibility to certain materials, many participants from the full sample felt strongly that their children would not play with materials functionally designed for the opposite gender. Gender stereotypes were portrayed quite strongly by the caregivers in this sample. An examiner administering the ADOS-2 to a member of this population should bear this in mind to facilitate the comfort of both the caregiver and the child during the assessment.

Particularly, during the *Birthday Party* activity an examiner should pay careful attention to how a male examinee responds to playing with the baby doll. If a male examinee appears resistant to engaging with the baby doll and an examiner is confident that the resistance is attributable to the gender stereotype attached to male children playing with dolls, another form of ritualised social events can be used as an alternative activity (e.g., having a picnic or tea party) to elicit functional and symbolic play.

Fear, violence, and danger. A few community sample caregivers raised concern about their children playing with materials which could be deemed "violent" or "dangerous." Many of these participants come from communities where violence is rife. Certain communities are very unsafe at all times and violent crime is common. Playing outside is not an option for children who live in these communities. Hence, it is understandable why many caregivers said that they do not want their children owning or regularly playing with materials which could promote more violence. Violent crime, according to Muyeba and Seekings (2011), is another type of "social leveller."

As far as ADOS-2 assessments are concerned, the materials which elicited the most of these types of responses, the action figures and the toolset, are presented in activities with a variety of other materials, not on their own. Children can choose what to engage with and how they want to engage with these materials. Furthermore, these materials can also be used

to answer important questions in the ADOS-2 (e.g., does the child produce imaginative sequences of actions with the materials? Does the child involve the examinee in the play? Does the child demonstrate reciprocity and shared enjoyment?). Therefore, we do not recommend that these materials be excluded during Afrikaans ADOS-2 administrations with this population.

Some community sample caregivers felt that certain materials were possibly unsafe for their children (e.g., they were concerned that their children might eat the PlayDoh, drink the bubbles liquid, and swallow smaller materials). We suggest that these materials remain included in the Afrikaans ADOS-2 assessments, as the assessment environment is contained and children are supervised at all times.

The toy frog elicited many mixed responses in the questionnaires completed by the full sample. The most concerning of these were fear-themed responses. It is likely that these responses stemmed from the culture which the participants were from. It may not be culturally appropriate for this particular population to play with materials which are likened, according to some of the community sample participants, to other amphibians, reptiles, and even spiders. This finding would be consistent with what was found in Kwazulu Natal, with the isiZulu population (unpublished).

This fear theme must be kept in mind when the *Functional and Symbolic Imitation* activity, found in Module 1, is administered to members of this population. If the child appears hesitant or scared to touch the toy frog, another material, like the car, should be used instead. Alternatively, the car should be used instead of the toy frog from the start of the administration.

Although only two Module 1's were conducted during the pre-piloting of the Afrikaans ADOS-2 to the clinical sample, the toy frog did not appear to negatively arouse either of the children. Thus, it was not necessary to remove the toy frog and replace it with another material.

The remote-controlled bunny, used in the *Response to Joint Attention* activity, also elicited some fear-themed responses from the full sample. Playing with a material of this nature (i.e., an animal toy) may be classified as culturally inappropriate for this population, but with such few fear-themed responses towards the material, it is unlikely that this is the case.

We suggest that this material can still be used during Afrikaans ADOS-2 assessments with children from this population. This is because the child does not have to physically engage with the material by touching it, like he/she would have to with the toy frog.

Spontaneously reported play and play materials and ADOS-2. To the researcher's knowledge, there is no known literature on the games children from the coloured population in the Western Cape play and the materials they play with. Therefore, the ethnographic investigation in this study on the games coloured children in the Western Cape play and the materials they play with can introduce this topic to literature (see Appendix M). Participants from the community sample reported that their children played with many different types of materials on a daily basis. Materials commonly played with were affordable and easily accessible (e.g., dolls, skipping ropes, balls, cars, and items used for playing soccer). Materials thought to be expensive, regardless of their educational value, were not frequently played with. This is in keeping with what was found in the AMQ when caregivers were asked if their children had played with the ADOS-2 materials. Caregivers also reported that children play many different types of games without materials (e.g., hide and seek, running games, on-on or catch, dancing, and singing).

Many materials and games listed spontaneously by caregivers come forth or could possibly come forth in ADOS-2 assessments. In fact, many of the materials most frequently played with (e.g., dolls, balls, and cars) and the games played (e.g., singing, peek-a-boo, and swinging in the air) by the participants' children are found in the ADOS-2.

Interestingly, when community sample caregivers were asked whether their children played pretend/imaginary games, many responded positively. But, when asked what imaginary games their children played, they provided games which did not include imaginary play. This is a very important finding, as it can have implications for screening tools and caregiver histories needed for sufficient ASD diagnoses. Many screening tools (e.g., Modified Checklist for Autism in Toddlers [Robins, Fein, Barton, & Green, 2001] and Social Communication Questionnaire [Berument, Rutter, Lord, Pickles, & Bailey, 1999]) query whether children play imaginatively, as imaginative play is typically underdeveloped in children with ASD (Lu, Petersen, Lacroix, & Rousseau, 2010).If caregivers from this population do not understand what is meant by imaginary/pretend play, they may provide incorrect answers to these types of questions in screening tools or histories. This may impact their children's screening outcome scores or influence clinicians' decisions regarding ASD diagnoses based (in part) on caregiver histories. We recommend that when clinicians or researchers ask caregivers from this population whether their children play imaginary/pretend games, they clarify what they mean through examples or explanation. As the ADOS-2 is an

observational assessment, it does not rely on caregiver histories, so this does not apply to ADOS-2 examiners.

Some caregivers from the community sample, did, however, provide appropriate examples of imaginary games their children played. Two of these imaginary games, namely imaginary tea time and "playing house" with dolls and doll-house items, are also found in the ADOS-2.

Corroborating the above information, it appeared that most of the ADOS-2 materials were familiar to the community sample. Some caregivers even spontaneously reported that their children play with materials found in the ADOS-2. The only material which may not have been culturally appropriate for the community sample was the toy frog. Careful attention must be paid when the baby doll is used during the *Birthday Party* activity with male examinees.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

There were a few limitations to this study. These limitations are discussed below and ways in which future research might address these limitations are also noted.

Firstly, a limitation of this study was that the sample size was small. As the clinical sample was primarily used to establish whether the language used in the Afrikaans ADOS-2 was appropriate and accessible, the clinical sample did not have to be too large. However, it may have been more telling to administer *all* of the Modules of the Afrikaans ADOS-2, instead of only three. This would have been possible had more clinical sample participants been recruited. Future research of this nature should aim to administer all of the ADOS-2 Modules.

As for the community sample, similar patterns in responses were noted quite early on during data collection. Thus, it felt as if we had exhausted all the responses when we reached 40 participants. We cannot eliminate the prospect that alternate responses and different themes would have emerged had we collected more data from more participants. Therefore, we acknowledge the small sample size of community participants as a study limitation. Future research of this nature should recruit a larger sample size to generalize findings more confidently.

Secondly, it would have been interesting to ask the sample outright if playing with a toy frog or bunny would be deemed culturally inappropriate. We were aware of the fact that the toy frog was found to be culturally inappropriate for the isiZulu population in Kwazulu Natal when we conducted this study, and therefore, we should have included a question about

the culturally appropriateness of playing with such a material in the EQ. Future research of this nature should investigate whether other studies have found materials in the ADOS-2 to be culturally inappropriate and ask their study participants whether playing with these materials is appropriate in their culture. Also, a question asking whether any ADOS-2 materials felt culturally inappropriate for the child partaking in the ADOS-2 assessment should have been included in the LCAQ. This question should be asked in future research of this nature.

Thirdly, research has indicated that participants are more willing to disclose sensitive and personal information during self-administration of questionnaires. Moreover, using an interview style when collecting data, may lead to participants providing socially desirable responses. This may lead to an over-representation of desirable responses and an under-representation of undesirable responses (Bowling, 2005). We used an interview style when administering the various questionnaires to participants. This ensured questionnaire completion and did not rely on literacy levels of participants. Future research could confirm if participants are literate and rather let participants complete questionnaires through self-administration.

Fourthly, this study did not complete the full translation procedure necessary for piloting the Afrikaans ADOS-2 to validate it and establish its full psychometric properties. What we propose for future research is to complete the translation of the Afrikaans ADOS-2 (see Table 1 for guidance). A full investigation must be done on equivalence and bias (Ægisdóttir, Gerstein, & Çinarbaş, 2008). This, however, will rely on knowing if ASD symptoms manifest in this population, and understanding if ASD symptoms (derived in the global north) are regarded as problematic in this culture. Also, the full psychometric properties of the Afrikaans ADOS-2 should be established. Piloting the tool can be useful in this regard. This will be the final step in the validation of the Afrikaans ADOS-2. As this project arose from a very real need to validate the Afrikaans ADOS-2, this project can be regarded as a stepping stone towards fulfilling that need.

SUMMARY AND CONCLUSION

In order to achieve the aim of establishing whether the Afrikaans ADOS-2 might be culturally appropriate for coloured, Afrikaans-speaking individuals from low-middle SES backgrounds living in the Western Cape, we investigated three key components. Firstly, we determined whether the language used in Afrikaans-translated ADOS-2 assessments might be appropriate and accessible for members of this population. Secondly, the appropriateness of

the social interactions and activities in the ADOS-2 was investigated. Thirdly, the appropriateness and familiarity of materials in the ADOS-2 was considered. This information was collected from a clinical sample and a community sample. It assisted with understanding whether method bias is of concern when administering this tool to this population.

The language component of this study highlighted the type of language used (including dialect and code-switching) by members of the low-middle SES, coloured, Afrikaans-speaking community of the Western Cape. It also provided suggestions on how to administer the Afrikaans ADOS-2, in terms of language use, in a way which is culturally appropriate for this community. By following these suggestions, examiners may make fair clinical judgements about the social communication abilities of the examinees without concerning themselves too much about the influence that the possible cultural differences between them and the examinees (which may impact on their language styles) may have on ADOS-2 outcome scores. Furthermore, these suggestions will also facilitate understanding and rapport-building during Afrikaans ADOS-2 assessments with this population.

During the ADOS-2 activities and social interactions component we determined whether the various activities in the ADOS-2, as well as the way examiners socially interact with children examinees, can be regarded as culturally appropriate for this population.

The social interaction used during ADOS-2 administrations, particularly between the ADOS-2 examiner and children examinees, seems appropriate for this population. Although some activities raised concerns about cultural appropriateness and cultural sensitivity, the majority of ADOS-2 activities are culturally appropriate for this population. Suggestions given about ADOS-2 activities to ensure appropriateness and sensitivity should be implemented when administering the tool to this population. For example, the USA map scene picture should not be used during the *Description of a Picture* activity, the examiner needs to make sure that the brushing teeth activity during the *Demonstration Task* is appropriate for the examinee before the activity is executed, and the novelty of the elements in the *Birthday Party* activity must be established before administration.

The cultural appropriateness and familiarity of the ADOS-2 materials component revealed that overall the ADOS-2 materials are culturally appropriate for this population. Some community sample caregivers spontaneously reported that their children played with materials and played certain games found in the ADOS-2. Although there were novel materials, particularly the more elaborate and expensive materials, most of the materials were familiar to caregivers (and their children) from the full sample. The PinArt was the most novel material. Therefore, we suggest leaving it out during an ADOS-2 administration with

this population. Novelty has its place in the ADOS-2, however, but too much novelty is unwanted and preoccupation with novel materials should be interpreted cautiously. Overall, there are enough familiar materials to elicit functional and creative play.

The toy frog may be culturally inappropriate for this population, and consequently, an alternative material should be used in its place, when necessary. Many caregivers from the sample expressed concern about their children playing with materials designed for the opposite gender. Some responses indicated that their children would choose not to play with such materials. This should be kept in mind when administering the Afrikaans ADOS-2 to members of this population, especially during the *Birthday Party* with male examinees.

Therefore, in conclusion, we discovered that, if the above-mentioned recommendations are followed during administration, the Afrikaans-ADOS-2 *is* culturally appropriate for Afrikaans-speaking, coloured individuals from low-middle SES backgrounds residing in the Western Cape. The Afrikaans ADOS-2 was mostly appropriate for the full sample in terms of the language used in the assessments, the social interactions and activities found in the ADOS-2, and the ADOS-2 materials. ADOS-2 examiners need to be mindful about administering the tool in a way which is sensitive to the culture of this community.

Important to note is that the Afrikaans-translated ADOS-2 is a standard Afrikaans translation of the original, English ADOS-2. Therefore, it can be administered to *any* Afrikaans-speaking individual. What this project offers, however, are *guidelines* for administering this tool to Afrikaans-speaking, coloured individuals from low-middle SES backgrounds residing in the Western Cape (see Appendix N), in a way which is sensitive to this group's culture and which should facilitate assessments. Moreover, if the tool is administered to this population in this way, method bias is unlikely to occur. When administering the Afrikaans-translated ADOS-2 to other cultural groups in South Africa, examiners must ensure that the tool is administered in a way which is culturally appropriate for those groups.

Once the final Afrikaans-translated ADOS-2 is approved by the WPS, and with their permission, this version could be made available to various clinics and ASD research centres in South Africa to use with Afrikaans-speaking individuals. This would allow a greater portion of South Africans to have access to ADOS-2 assessments. In the Western Cape, such centres may find this study useful to assist them with administering the tool to Afrikaans-speaking, coloured individuals from low-middle SES backgrounds in a culturally sensitive way. The value of this study for both researchers and clinicians should not be taken lightly. Administering "gold standard" ASD diagnostic tools (like the ADOS-2) in a culturally

appropriate and culturally sensitive manner, in the language spoken by the target population, is invaluable for accurate ASD diagnoses.

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APPENDIX A

ADOS-2 Activities Mentioned Throughout this Study.

Response to Joint Attention

This activity is found in the Toddler Module, Module 1, and Module 2. In this activity, either the remote-controlled bunny or the remote-controlled car is placed a distance away from the child and the material is used to elicit a shift in gaze by either the examiner orientating the child's gaze towards the material or through activation of the material.

Birthday Party

In Module 1 and Module 2an imaginary birthday party is held for "Baby" (baby doll).The birthday party includes placing candles in a cake, singing the *Happy Birthday* song, blowing out the candles, feeding Baby some cake and juice, cleaning up spilt juice, and putting Baby to bed. Among other things, this activity is designed to assess whether the child can play imaginatively, gesture appropriately, respond to social cues, and interact in a socially acceptable way.

Demonstration Task

In Module 2, Module 3, and Module 4 there is a demonstration task designed to evaluate the examinees ability to use descriptive gestures (i.e., "pantomime actions that are used when trying to describe or represent an action, object, or event for communicative purposes" [Lord et al., 2012]), report a routine event, and teach a sequence of actions. The event that needs to be demonstrated is brushing one's teeth. When the examiner explains the "brushing teeth" task, he/she draws an outline of a basin, two taps (hot and cold), toothpaste, a toothbrush and a cup to indicate what items need to be used imaginatively during the demonstration. If this task is not adequately performed (or the task is not appropriate for the examinee), the examinee can demonstrate washing his/her hands using objects like soap and a hand towel.

Telling a Story from a Book

This activity is found in Module 3 and Module 4. In this activity the examinee looks through a picture book and is required to tell a sequential story about what is happening in the book. The book provides a context for comments about affect and social relationships.

Emotions

This activity is found in Module 3 and Module 4. Examinees are asked various interview questions pertaining to emotions. The activity provides a context in which examinees can talk freely about their emotions and personal experiences.

Social Difficulties and Annoyance

This activity is found in Module 3 and Module 4. Examinees are asked various interview questions to assess their insight into personal social difficulties. This activity also provides an opportunity to assess the examinee's sense of responsibility for his/her own actions.

Loneliness

This activity is found in Module 3 and Module 4. Examinees are asked various interview questions to assess their insight into their own social situations and their emotional reactions to these situations.

Conversation and Reporting

This activity is found in Module 3 and Module 4. Examinees are assessed on their abilities to engage in conversations with back-and-forth interchanges, describe events/situations outside of the assessment context, and recount non-routine events.

Description of a Picture

This activity is found in Module 3 and Module 4, but is optional in Module 4. Examinees are required to look at a picture and spontaneously comment on what they see in the picture. Therefore, this activity provides an opportunity to assess the examinee's spontaneous language and communication behaviours. Generally only one picture is used by each examinee. The pictures that may be used include a USA map scene, a resort scene, and a feast scene.

APPENDIX B

Clinical Sample Caregiver's Version of the Language and Cultural Appropriateness Questionnaire (LCAQ).

ADOS-2 Deelnemer ☐ *Ouer/Versorger ☐

Naam:

Module:

Ondersoeker naam:

Datum:

*Deelnemer se naam en ouderdom:

DEELNEMER of OUER/VERSORGER

1. Wat se aktiwiteite het gemaklik gevoel?
   Hoekom?_____
   _____
   _____
2. Wat se aktiwiteite het ongemaklik gevoel?
   Hoekom?_____
   _____
   _____
3. Was daar enigiets wat van jou kulturele perspektief af vir jou problematies was? Verduidelik.
   _____
   _____
   _____
4. Het jy die taal wat die ondersoeker gepraat het verstaan? JA/NEE
5. Was daar enige woorde gebruik wat jy nie verstaan het nie? JA/NEE
   a. Indien ja, wat se woorde het jy nie verstaan nie?_____
      _____
6. Is dit die tipe Afrikaans wat julle gewoonlik by die huis praat? JA/NEE
   a. Indien nee, verduidelik. _____
      _____
7. Het jy gemaklik gevoel met die taal wat gedurende die evaluering gepraat is? JA/NEE
8. Wat noem jy elk van hierdie goed?

_____

_____

_____

_____

9. Het jy enige voorstelle hoe om die taal wat gebruik word by die ADOS-2 evaluering te verbeter?_____

_____

_____

Dankie ☺

APPENDIX C

Observer's Version of the Language and Cultural Appropriateness Questionnaire (LCAQ).

Deelnemer naam:
Waarnemer naam:
Ondersoeker naam:
Module:
Datum:

WAARNEMER

1. Het jy die taal wat die ondersoeker gepraat het verstaan? JA/NEE
2. Voel jy dat dat die kind/deelnemer die taal wat gebruik is verstaan het? JA/NEE
    a. Indien nee, wat het hy/sy nie verstaan nie?_____
    _____
    _____
    _____
    _____
    _____
    _____
3. Voel jy dat die versorger die taal wat gebruik is verstaan het? JA/NEE/NIE VAN TOEPASSING
    a. Indien nee, wat het hy/sy nie verstaan nie?_____
    _____
    _____
    _____
    _____
4. Wat se aktiwiteite het gemaklik gevoel?
    Hoekom?_____
    _____
    _____
    _____
    _____
5. Wat se aktiwiteite het ongemaklik gevoel?
    Hoekom?_____
    _____
    _____
    _____
    _____
6. Was daar enigiets wat van die deelnemer se kulturele perspektief af vir jou problematies was? Verduidelik. _____
    _____
    _____
    _____
    _____
7. Was daar enige woorde gebruik wat die deelnemer nie verstaan het nie? JA/NEE

a. Indien ja, watter woorde het hy/sy nie verstaan nie?_____
_____
_____

8. Het jy gemaklik gevoel met die taal wat gedurende die evaluering gepraat is? JA/NEE
9. Voel jy dat die ondersoeker en die kind/deelnemer/versorger dieselfe "tipe" Afrikaans gepraat het? (dialek, styl ens.) Verduidelik.

_____
_____
_____
_____

10. Het jy enige voorstelle hoe om die taal wat gebruik word by die ADOS-2 evaluering te verbeter?

_____
_____
_____
_____
_____
_____

DANKIE ☺

APPENDIX D

Examiner's Version of the Language and Cultural Appropriateness Questionnaire (LCAQ).

Deelnemer naam:
Ondersoeker naam:
Module:
Datum:

ONDERSOEKER

1. Voel jy dat dat die kind/deelnemer die taal wat gebruik is verstaan het? JA/NEE
    a. Indien nee, wat het hy/sy nie verstaan nie?_____
    _____
    _____
    _____
    _____
    _____
    _____
2. Voel jy dat die versorger die taal wat gebruik is verstaan het? JA/NEE/NIE VAN TOEPASSING
    a. Indien nee, wat het hy/sy nie verstaan nie?_____
    _____
    _____
    _____
    _____
3. Wat se aktiwiteite het gemaklik gevoel?
    Hoekom?_____
    _____
    _____
    _____
    _____
4. Wat se aktiwiteite het ongemaklik gevoel?
    Hoekom?_____
    _____
    _____
    _____
    _____
5. Was daar enigiets wat van die deelnemer se kulturele perspektief af vir jou problematies was? Verduidelik. _____
    _____
    _____
    _____
    _____
6. Was daar enige woorde gebruik wat die deelnemer nie verstaan het nie? JA/NEE

a. Indien ja, watter woorde het hy/sy nie verstaan nie?_____
_____
_____

7. Het jy gemaklik gevoel met die taal wat gedurende die evaluering gepraat is? JA/NEE
8. Voel jy dat jy en die kind/deelnemer/versorger dieselfe "tipe" Afrikaans gepraat het (Dialek, styl ens.)? Verduidelik.

_____
_____
_____
_____

9. Het jy enige voorstelle hoe om die taal wat gebruik word by die ADOS-2 evaluering te verbeter?

_____
_____
_____
_____
_____
_____

DANKIE ☺

APPENDIX E

Ethnographic Questionnaire (EQ).

Kind naam:
Deelnemer naam:
ADOS-2: JA/NEE
Datum:
Kind se ouderdom:

1. Watter speletjies speel jou kind gewoonlik? Kort beskrywing.
   1.1 Speletjies sonder voorwerpe (speelgoed of materiale):_____
   _____
   _____
   _____
   1.2 Speletjies met voorwerpe (speelgoed of materiale):_____
   _____
   _____
   _____
2. Watter kamma-speletjies speel kinders gewoonlik in julle omgewing of gemeenskap?_____
   _____
   _____
   _____
3. Hoe gereeld speel jy/ander volwassenes met jou kind?_____
   _____
   _____
   _____
4. Het jou kind al ooit ‘n verjaarsdag partytjie bygewoon? JA/NEE

5. Kan jy verduidelik wat gewoontlik by ‘n verjaarsdag partytjie gebeur in jou gemeenskap?_____
   _____
   _____
   _____
6. Is daar spesifieke sosiale roetines in julle familie of gemeenskap? (Bv. Badtyd, wastyd, piekniek hou, ens.)_____
   _____
   _____
   _____
7. Het julle ‘n wasbak waar jou familie tande borsel? JA/NEE
   8.1 Indien ja, kan jy asseblief vir my verduidelik hoe lyk die wasbak?_____
   _____
   _____

8.2 Indien nee, waar borsel julle dan julle tande?_____
_____
_____

9.1 Het jou kind enige boeke? JA/NEE
9.2 Het jou kind enige boeke met prentjies in? JA/NEE

10. Lees jy ooit storie boeke vir/saam met jou kind? JA/NEE

11. Het jy al ooit gesien dat jou kind ‘n storieboek lees of na ‘n prentjies boek kyk? JA/NEE

12. Vertel julle ooit stories vir julle kind? JA/NEE

13. Het jy ooit gesien dat jou kind vir julle‘n storie vertel? JA/NEE

APPENDIX F

ADOS-2 Materials Questionnaire (AMQ).

1. Het jou kind ooit so iets gesien? JA/NEE
   Indien ja:
   A) Waar het jou kind so iets gesien?

   ---

2. Het jou kind ooit met so iets gespeel? JA/NEE
   Indien ja:
   A) Waar het jou kind met so iets gespeel?

   B) Het jou kind dit geniet om met so iets te speel?

   C) Hoe speel hy/sy met dit?

   Indien nee:
   A) Wat dink jy sal hy/sy doen as ons dit vir hom/haar gee?

   ---

3. Het jou kind so iets by die huis? JA/NEE
   Indien nee:
   A) Hoekom nie?

   ---

4. Enige ander kommentaar:

APPENDIX G

Socio-demographic Questionnaire.

Deelnemer nommer: _____ Datum: _____

Demografiese Vraelys

A. Kind se Inligting:

1. Naam: _____
2. Ouderdom: _____
3. Geboortedatum (dd/mm/jj): _____
4. Geslag (omsirkel een): Manlik Vroulik
5. Etnisiteit: Blank Swart Indiër Kleurling Asiaties
   Ander Indien ander, spesifiseer asseblief: _____
6. Huistaal: _____
7. Hoe oud was jou kind toe jy agtergekom het dat hy/sy ontwikkelingsprobleme het?
   _____
8. Hoe oud was jou kind toe jy die eerste keer hulp gesoek het?
   _____
9. Na wie of waarheen het jy gegaan om hulp te kry?
   _____
10. Het jy enige idee watter spesifieke ontwikkelingsprobleem jou kind het?
    _____
11. Het jou kind ‘n diagnose?
    _____
12. Hoeveel keer het jy by die hierdie kliniek, die Rooikruis Kinderhospitaal se pediatriese kliniek gekuier?
    _____

B. Ouer se inligting:

1. Wat is die totale jaarlikse inkomste van die huishouding waar jy woon? (Merk die gepaste blokkie):

[LET WEL: Dit moet die totale huishoudelike inkomste wees, nie persoonlike inkomste nie.]

R 0-R3,500:_____

R3,501-R7,500:_____

R7,501-R12,500:_____

R12,501-R17,500:_____

17,501-22,500:_____

22,001-30,000:_____

30,001-40,000:_____

40,001-50,000:_____

50,001-60,000:_____

60,001-70,000:_____

70,001-80,000:_____

80,001-90,000:_____

meer as 90,000:_____

2. Hoogste vlak van opvoeding van moeder, vader en/of voog (omsirkel asseblief gepaste nommer).

	Biologiese moeder	Biologiese vader	Voog
1) 0 jaar (Geen grade / Standerds) = Het nooit skoolgegaan nie	1.	1.	1.
2) 1-6 jaar (Grade 1-6 / Sub- A-St 4) = Het nie laerskool klaargemaak nie	2. 3.	2. 3.	2. 3.
3) 7 jaar (Graad 7 / St 5) = Laerskool klaargemaak	4.	4.	4.
4) 8-11 jaar (Grade 8-11 / Sts 6-9) = Deel van hoërskoolonderwys (het nie hoërskool klaargemaak nie)	5. 6.	5. 6.	5. 6.
5. 12 jaar (Graad 12 / St 10) = Hoërskool klaargemaak	7.	7.	7.
6. 13+ jaar = Tersiêre opvoeding Universiteit / technikon / kollege klaargemaak			
7. Weet nie			

3. Materiële en finansiële hulpbronne (omsirkel asseblief gepaste nommer).

Watter van die volgende items, in werkende toestand, het jou huishouding?

Items	Ja	Nee
1. 'n Yskas of vrieskas	1.	1.
2. 'n Stofsuier of poleerder	2.	2.
3. 'n Televisiestel	3.	3.
4. 'n Hoëtroustel of musieksentrum (radio uitgesluit)	4.	4.
5. 'n Mikrogolfoond	5.	5.
6. 'n Wasmasjien	6.	6.
7. 'n Videokassetopnemer of dvd-speler	7.	7.

Watter van die volgemde het jy in jou huis?

Items	Ja	Nee
1. Lopende water	1.	1.
2. 'n Huishulp	2.	2.
3. Minstens een motor	3.	3.
4. 'n Spoeltoilet	4.	4.
5. 'n Ingeboude kombuisopwasbak	5.	5.
6. 'n Elektriese stoof of warmplaat	6.	6.
7. 'n Werkende telefoon	7.	7.

Het of doen jy self enige van die volgende?

Items	Ja	Nee
1. Doen inkopies by supermarkte	1.	1.
2. Gebruik finansiële dienste soos 'n bankrekening, OTM-kaart of kredietkaart	2.	2.
3. Het 'n rekening of kredietkaart by 'n kleinhandelaar	3.	3.

APPENDIX H

Ethical Approval by the UCT Faculty of Health Sciences Human Research Ethics Committee for the larger study; Clinical Sample.

HREC Ref 365/2012 – 7Aug2012

UNIVERSITY OF CAPE TOWN

Faculty of Health Sciences
Human Research Ethics Committee
Room E52-24 Groote Schuur Hospital Old Main Building
Observatory 7925
Telephone [021] 406 6338 • **Facsimile** [021] 406 6411
e-mail: shuretta.thomas@uct.ac.za

07 August 2012

HREC REF: 365/2012

Dr S Malcolm-Smith
Psychology
Room 4.24
Humanities Graduate Building
Upper Campus

Dear Dr Malcolm-Smith

PROJECT TITLE: EARLY SCREENING FOR AUTISM SPECTRUM DISORDERS IN A WESTERN CAPE COMMUNITY SETTING

Thank you for submitting your study to the Faculty of Health Sciences Human Research Ethics Committee for review.

It is a pleasure to inform you that the HREC has **formally approved** the above-mentioned study.

Approval is granted for one year till the 15th August 2013

Please submit a progress form, using the standardised Annual Report Form if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.
(Forms can be found on our website: www.health.uct.ac.za/research/humanethics/forms)

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please quote the HREC. REF in all your correspondence.

Yours sincerely

pp signature removed
PROFESSOR M BLOCKMAN
CHAIRPERSON, FHS HUMAN ETHICS
Federal Wide Assurance Number: FWA00001637.

Institutional Review Board (IRB) number: IRB00001938
This serves to confirm that the University of Cape Town Human Research Ethics Committee complies to the Ethics Standards for Clinical Research with a new drug in patients, based on the Medical Research Council (MRC-SA), Food and Drug Administration (FDA-USA), International Convention on Harmonisation Good Clinical Practice (ICH GCP) and Declaration of Helsinki guidelines.

s.thomas

APPENDIX I

Ethical Approval by theSchool of Child and Adolescent Health at Red Cross Hospital; Clinical Sample.

Dr TA Blake
Manager: Medical Services
Email: Thomas.Blake@pgwc.gov.za
Tel: +27 21 6585788fax: +27 21 6585166
28 AUGUST 2012

DR S MALCOLM-SMITH

Dear Dr Malcolm-Smith,

Approval to do research at the Red Cross War Memorial Children's Hospital is hereby granted.
Kindly note that after the conclusion of the study, the hospital should be presented with the results.

Yours faithfully,

signature removed

Dr Thomas Blake
Chair: Hospital Research Review Committee

APPENDIX J

Clinical Sample: Information and Consent Form for Afrikaans ADOS-2 Assessment with their Children.

Dear Parent,

We want to ask your permission to do a play assessment and an assessment of cognitive function (memory, attention, problem solving, etc) with your child. We would also like to ask you some questions about your child's behaviour. This will take 2- 3 hours in total. It will take place either at Red Cross Hospital, the Division of Child and Adolescent Psychiatry (DCAP), or at the Child Guidance Clinic at the University of Cape Town. After we have done these assessments, your doctor will let you know the results.

You can choose not to take part. If you agree and then change your mind, you can withdraw from the study at any time. Your decision will have no negative effects for you or your child and will not affect the services you receive at the clinic.

We understand that some of this information may be sensitive, but all information will be kept strictly confidential. Only members of the research team will be able to view the information. When we publish the research, you will not be identified in any way.

We also want to ask your permission to video-record the play session. This recording will be used to make sure it is scored properly. These DVD recordings will be stored in a secure place and only members of the research team will have access to them.

There are no risks involved in taking part in the study. If you or your child get tired during the interview or assessment, you can take breaks at any time. The benefits are that your child may get a formal diagnosis and you will be given advice on what is best to do for your child, and what help you can get.

This study has been explained to me and all my questions have been answered. On behalf of myself and my child, I consent to participate.

Name: _____ Signature: _____ Date: _____

I consent to having the play assessment filmed, and that this data will only be used for scoring

Name: _____ Signature: _____ Date: _____

This study was explained by:

Name: _____ Signature: _____ Date: _____

If you have any queries or concerns please feel free to contact

Susan Malcolm-Smith on 021 650 4605

Kirsty Donald at Kirsty.Donald@uct.ac.za or

UCT Faculty of Health Sciences Research Ethics Committee on 021 406 6338.

Thank you for your help!

Autism Research Group

Department of Psychology, University of Cape Town

Developmental Clinic - Red Cross Children's Hospital

Division of Adolescent and Child Psychiatry, UCT

APPENDIX K

Clinical Sample: Information and Consent Form for Completion of Language and Cultural Appropriateness Questionnaire (LCAQ).

Geagte Ouer(s)/Versorger(s),

Ons wil u graag ‘n paar vrae vra oor die evaluering wat u sopas gesien het. Ons wil weet wat u dink en voel oor die aktiwiteite en taal wat gebruik is gedurende die evaluering. Hierdie inligting sal ons help om die taal en aktiwiteite te verbeter.

Hierdie vraelys sal ongeveer 15 minute neem om te voltooi.Antwoord asseblief alle vrae so noukeurig en eerlik as moontlik.

U mag besluit om nie aan die studie deel te neem nie, of om later uit die studie te onttrek. Daar sal geen slegte gevolge vir u of u kind wees nie.

Ons verstaan dat sekere inligting sensitief mag wees, maar wees asseblief verseker dat alle inligiting streng privaat gehou sal word. Indien die resultate van die studie gepubliseer word, sal nóg u nóg u kind enigsins in die publikasie geïdentifiseer word.

Die studie is aan my verduidelik en al my vrae is beantwoord.

Naam: _____ Handtekening: _____Datum: _____

Die studie is verduidelik deur:

Naam: _____ Handtekening: _____Datum: _____

Kontak Susan Malcolm-Smith op 021 650 4605 as u enige vrae het.

Autism Research Group

Department of Psychology, University of Cape Town

Division of Adolescent and Child Psychiatry, UCT

APPENDIX L

Clinical Sample: Information and Consent Form for Completion of Socio-demographic Questionnaire and ADOS-2 Materials Questionnaire (AMQ).

Community Sample: Information and Consent Form for Completion of Socio-demographic Questionnaire, ADOS-2 Materials Questionnaire (AMQ), and Ethnographic Questionnaire (EQ).

Geagte Ouer(s)/Versorger(s),

Ons kontak u omdat u ingestem het om gekontak te work vir navorsing óf omdat u belangstel daarin om deel te neem.Ons is besig met 'n studie om te sien of ‘n diagnostiese hulpmiddel wat oor die wêreld gebruik word ook hier met Afrikaans-sprekende mense gebruik kan word. Ons wil u ‘n paar vrae vra oor u en u gesin en oor die speelgoed en aktiwiteite wat deel vorm van hierdie hulpmiddel. Ons vra ‘n klomp verskillende Afrikaanse ouers/versorgers om in ons studie te wees, sodat ons ‘n goeie verteenwoordiging van die Afrikaanse populasie sal hê.

As u aan die studie wil deelneem kan u dit doen terwyl u hier wag. Die onderhoud sal ongeveer 45 minute duur. Antwoord asseblief alle vrae so noukeurig en eerlik as moontlik.

U mag besluit om nie aan die studie deel te neem nie, of om later uit die studie te onttrek. Daar sal geen slegte gevolge vir u of u kind wees nie.

Ons verstaan dat sekere inligting sensitief mag wees, maar wees asseblief verseker dat alle inligiting streng privaat gehou sal word. Indien die resultate van die studie gepubliseer word, sal nóg u nóg u kind enigsins in die publikasie geïdentifiseer word.

Die studie is aan my verduidelik en al my vrae is beantwoord.

Naam: _____ Handtekening: _____Datum: _____

Die studie is verduidelik deur:

Naam: _____ Handtekening: _____Datum: _____

Kontak Susan Malcolm-Smith op 021 650 4605 as u enige vrae het.

Autism Research Group

Department of Psychology, University of Cape Town

Division of Adolescent and Child Psychiatry, UCT

APPENDIX M

Community Sample: Spontaneously Reported Play in Ethnographic Questionnaire (EQ).

Play with materials		Play without materials		Imaginary games	
Materials	Number of responses (max 40)	Games	Number of responses (max 40)	Games	Number of responses (max 40)
posting objects in container	2	hide and seek	17	imaginary friend	1
plastic toolset	2	walking	2	dress up	1
ball	13	running	14	tea time	1
cellphone/telephone	4	climbing	3	bricks into imaginary objects	1
cricket	2	wrestling	2	doll house	4
rugby	2	on-on/catch	7	house-house	5
cards	2	dancing	6	school-school	11
dolls	17	jumping	1	movie stars	1
teddybears and soft toys	2	peak-a-boo	2	cops and robbers	3
colouring in/drawing	3	singing	6	modelling	2
sand play	2	clapping hands game	2	Spiderman	1
park	3	swing in the air	1	riding animals (piggy bag animals)	2
tea set	2	hopscotch	2	doctor-doctor	1
food	1	making music	2	wedding-wedding	1
CD's	1	round and round the garden	1	dance competitions	1
motorbike	2				

Play with materials continued	
Materials	Number of responses (max 40)
bags	1
cars	11
Lego	1
computer/laptop games	4
iPad/tablet	1
sticks	1
bricks	1
rattles	2
television games	4
soccer	9
spinning top	4
marbles	3
puzzles	2
television	2
skipping rope	14
blackboard	1
bicycle	5
dominoes	2
bubbles	1
golf	1
books	2
netball	3
doll house	1
cooldrink straws	1
tennis	2
Monopoly/board games	2
clay	1
hockey	1
tins	1
ice-cream tubs/tupperware	2
blocks	1
hula-hoop	2
digital games at shops	1
musical toys/instruments	3
remotes	1
liquids	1
makeup	2
action figures	3
Pram	1
clothing pegs	1

APPENDIX N

Guidelines for Administering the Afrikaans ADOS-2 to Afrikaans-speaking, Coloured Individuals from Low-Middle SES Backgrounds from the Western Cape in a Cultural Sensitive Way.

Language	Activities	Materials
"Standard" Afrikaans should be used and adjustments should be made to formality of words and language style to accommodate examinees if necessary. Take note of examinee's use of code-switching and implement it too where necessary. If a word is not understood, clarify meaning with explanation or by providing a more commonly-known Afrikaans/English alternative. Special attention must be paid to words pertaining to emotions and words listed in Figure 4.	Use feast scene picture in *Description of a Picture* activity. At start of the *Demonstration Task* ask examinee where he/she brushes his teeth. • If examinee uses basin: Clarify what examinee names the place where he/she brushes his/her teeth (e.g., basin, wasbak, sink) and ask how many taps basin has. • If no basin: Use alternative demonstration of washing hands with soap. Before *Birthday Party* administration ensure familiarity of elements. Alternative tea party or picnic should be administered if elements are novel.	Be conscious of gender stereotypes during play (especially during *Birthday Party* with baby doll). During *Functional and Symbolic Imitation* activity, if examinee appears hesitant or scared to touch toy frog, another material (e.g., car) should be used instead. Alternatively, the car should be used from start of the administration. Be caution of interpreting preoccupation with material as restricted behavior if material is novel to child. Ask caregiver about novelty of material. Remove PinArt

Note: Steps used during the translation procedure are provided in Table 1.