

Attention Deficit and Hyperactivity Disorder (ADHD) in Southern Africa: Management Perspectives

Kasu S^{1,2*} and Chikanza IC²

¹Department of Rheumatology, The Royal London Hospital, London, United Kingdom and The Catholic University, Harare and Medical School, University of Zimbabwe, Harare, Zimbabwe

²Occupational Therapy Unit, Department of Psychiatry, Medical School, University of Zimbabwe, Harare, Zimbabwe

***Corresponding Author:** Kasu S, Occupational Therapy Unit, Department of Psychiatry, Medical School, University of Zimbabwe, Harare, Zimbabwe.

Received: August 12, 2022; **Published:** December 29, 2022

Abstract

We have assessed the management of ADHD in Southern Africa as well as the services that are available for such children. We report that the management of ADHD in southern Africa is deficient no adequate attention is being given to the condition in the majority of the southern African states. Furthermore, ADHD is under-reported and undertreated in low-income settings. Most articles were about the effectiveness of educators managing ADHD in the classroom. A need for on-going support and training of educators on the management of children with ADHD was highlighted. The medication and other treatment modalities offered by different health professionals who manage ADHD were discussed. However, the information on how some health professionals manage ADHD was limited, for example, the management of ADHD by occupational therapists and psychologists. There was also limited information on how parents were managing their children with ADHD and further research is required to provide insight into this. We conclude that, further studies are required in Southern Africa regarding the management of ADHD in order to improve the welfare of children with ADHD and provide more effective and contextually relevant care.

Keywords: Management of ADHD; Southern Africa; Children

Introduction

ADHD is a common childhood behaviour disorder that is characterized by hyperactivity, inattention and impulsivity that is inconsistent with age [1]. Most literature was sourced from South Africa. The rest of southern Africa including Zimbabwe, Malawi, Mozambique and Zambia were not writing about the management of ADHD. Although South Africa continues to battle with major economic challenges such as high unemployment, poverty and social and economic inequalities, it has a status of being a leading economy in Africa. South Africa is a member of the BRICS (Brazil, Russia, India, China and South Africa) which confirms its status as a growing economy on the global stage [2]. This brings the question of how comparable the situation in South Africa is with the rest of Southern Africa where there are low to medium income countries. There is a dearth of information on the management of ADHD in southern Africa.

Most literature found was from educationists on the management of ADHD in Southern Africa. Nel (2014) believes that teachers are the most valuable source of information regarding diagnosis and referral of ADHD. Teachers are also responsible for managing ADHD by creating a conducive learning environment to children with ADHD so that they achieve success academically, socially and emotionally [3].

Prevalence

Attention-Deficit/Hyperactivity Disorder (ADHD) is a universal condition that goes beyond cultural, socio-economic and racial barriers [4]. Polanczyk, *et al.* (2007) performed a literature review of north and South America, Europe, Asia, Africa, Oceania and the Middle East and found that the worldwide prevalence of ADHD is 5.29% [5]. Vogel, *et al.* (2014) also found a prevalence rate of ADHD of approximately 5% in Children and 2.5% in adolescents in South Africa [6]. In comparison, Lola, *et al.* (2019) performed a study in rural Ethiopia and found the ADHD prevalence rate was 7.3% [7]. Similarly, Ghana has an estimated ADHD prevalence rate of 7% where more boys were identified with ADHD than girls [8].

ADHD is believed to be the most common psychiatric childhood disorder [4]. In South Africa, it is considered to be the most prevalent childhood psychiatric disorder with a prevalence rate of 10% [4].

Management of ADHD by educators

South Africa in their white paper 6 (2001) encourage inclusive education for children with ADHD and education that is tailor made for their educational needs [2,9]. However, limited skills and knowledge regarding the management of children with ADHD has been a barrier towards inclusive education [2].

Topkin, *et al.* (2015) performed a study on primary school teachers' knowledge of ADHD management and found that teachers were more knowledgeable on the associated features of ADHD than they were regarding the symptoms, diagnosis and treatment of ADHD [2].

Most of the teachers in the sample indicated that they received training on ADHD although in most cases, it was once off [2]. Topkin, *et al.* (2015) suggested that there is need for continuous in- service training on the management of children with ADHD in the classroom in order to effect positive outcomes [2]. This continuous training must also provide new approaches to managing children with ADHD in the classroom. There is a need to consider school regulations that will ensure teachers in South African schools have the skills necessary to implement school-based interventions for ADHD. While a few affluent urban schools in the country have access to school counsellors, the majority of schools have no resources in terms of classroom management of ADHD. The success of inclusive education in the country can only be realised if schools are equipped to effectively deal with the diverse needs of all learners [2].

The teachers in the study suggested strategies such as positive reinforcement, effective communication, learning expectations, smaller units of classwork, setting behavioural and learning expectations and repetition of instructions in order to manage ADHD in the classroom [2]. The teachers in the study knew which interventions could be used to effectively manage ADHD in the classroom, but there was a lower degree of support for these interventions. This could be due to many factors, which could be: 1) Lack of resources at schools and 2) Support to teachers by making use of support personnel such as students/additional assistant teachers to assist with the children with special needs in the classroom [2].

Maema (2021) performed a study in Soweto in South Africa to assess teacher management of children with ADHD [10]. The findings revealed that training of teachers on neurodevelopmental disorders such as ADHD is insufficient. The teachers reported feeling overwhelmed and not having adequate knowledge on how to support the learners with ADHD. The teachers also stereotyped and labelled learners with ADHD. The study revealed that teachers employ various interventions from their day-to-day experience to manage learners with ADHD and not necessarily evidence-based interventions [10].

Braude, *et al.* (2020) also performed a study on the experiences of teachers managing children with ADHD in South Africa and found that the teachers' understanding of ADHD was limited [11]. Braude, *et al.* (2020) recommends the professional development of teachers with regards to the management of ADHD [11].

Amod., *et al.* (2013) conducted a study in South Africa to ascertain the teachers' knowledge on the management of ADHD using the Knowledge of Attention Deficit Disorders Scale (KADDS) questionnaire, as well as open-ended questions [4]. The KADDS measures teachers' knowledge and misperceptions in three specific areas: symptoms/diagnosis of ADHD, general knowledge about the nature, causes and outcome of ADHD and possible interventions with regard to ADHD. Amod., *et al.* (2013) found that teachers were generally good at understanding of the symptoms of ADHD. Teachers in the study were aware that ADHD is associated with poor academic performance. The teachers were also aware that parent and teacher training on the management of ADHD accompanied by medical interventions were important in the management of children with ADHD. However, the teachers in the study had inadequate knowledge on the epidemiology of ADHD. The teachers had poor and even incorrect knowledge regarding the treatment of ADHD. It is therefore important that teachers receive pre- service and in- service training on the management of children with ADHD as teachers play an important role in the identification and treatment of children with ADHD [4].

In contrast to Amod., *et al.*'s study (2013) performed in South Africa, a study performed on the teacher management of ADHD in Nigeria were not aware of ADHD symptoms amongst the students they teach [12]. Consequently, the teachers used unprofessional classroom behavior modification approaches such as spanking, criticism and corporal punishment in the management of ADHD in classrooms. The study recommended among others that an epidemiological survey on ADHD should be conducted in Ebonyi state primary school children for effective diagnosis [12].

Perold., *et al.* (2010) also used the KADDS to assess the teachers' knowledge on the management of ADHD in South Africa and found that the teachers' overall knowledge of ADHD was poor [13]. The results suggest that teachers are most knowledgeable about symptoms and diagnosis [13]. The teachers scored lower on treatment and general knowledge subscales [13].

A similar study was performed in Nigeria using the KADDS assessment tool to assess the teachers' knowledge on management of ADHD [14]. The study found that the teachers' knowledge on the management on the management of ADHD was inadequate and the teachers inappropriately used negative disciplinary measures on children with ADHD [14].

Ndokuba., *et al.* (2015) conducted a study in Nigeria that compared parents and teachers of children with ADHD in rural Nigeria in order to assess their ability to identify and manage symptoms of ADHD [15]. The study found that teachers identified symptoms of ADHD more commonly than parents [15]. Consequently, teachers could play critical roles in identifying and managing children with ADHD, especially in Rural Africa where resources are scarce [15].

De Jongh., *et al.* (2019) conducted a pilot study to grade R teachers in South Africa. The study involved piloting an adapted teacher training model on the management of ADHD [16]. The training included different topics such as defining ADHD; the features, prevalence and aetiology; the symptoms and risk factors associated with ADHD; the co-morbid conditions related to ADHD; the risk factors; the identification and diagnosis of ADHD; and coping strategies for teachers managing ADHD, as well as the treatment of ADHD including pharmacological and non-pharmacological interventions. The teachers appreciated the training offered [16]. The teachers in the study recommended that the training program be replicated and offered to other teachers to enhance their effectiveness in managing and teaching children with ADHD [16].

Similarly, Mahommed., *et al.* (2018) examined ten teachers' reaction to a tailored Incredible Years Teacher Classroom Management Program in Addis Ababa in Ethiopia, aimed at improving the teachers' management of children with ADHD in the classrooms [17]. This

was the first study to evaluate the Incredible Years Teacher Classroom Management Program in the African context [17]. During a six week program, the teachers received coaching on how to manage children with ADHD and they wrote and implemented their intervention plans with children with ADHD in their classrooms [17]. The study found that the teachers were happy with the effects of the program on the child's behavior and they were more confident to manage children with ADHD. The teachers also recommended similar trainings to other colleagues [17]. Treatment modalities used by health professionals to manage ADHD will be discussed next.

Treatment modalities used by health professionals to manage ADHD

Vrba, *et al.* (2019) performed a study to measure compliance in a South African setting using the National Institute for Clinical Excellence (NICE) guidelines for ADHD as the gold standard to compare compliance on the management of ADHD between two treatment locations in Cape Town and to generate an audit checklist for standardising care [18]. They found that Compliance was low, with only four audit standards rated as "good". Physical monitoring was especially poor. They recommended that structured protocols followed by re-auditing be introduced to improve service delivery [18].

Nyachuba (2014) performed a study in Kenya to assess the attitudes of healthcare workers towards ADHD and found that local researchers have paid little attention to the management of ADHD [19]. Respondents said that ADHD was not being diagnosed and treated appropriately in Kenya [19]. Respondents pointed to lack of awareness by parents and teachers, inadequate knowledge and experience on the part of medical professionals, and insufficient follow-up by medical facilities as some of the challenges hindering proper ADHD diagnosis and treatment. Health care workers were aware of the side effects of ADHD medication but were divided on the seriousness of those side effects [19]. To some, side effects were considered mild and an acceptable cost of being on medication, whereas others expressed more worry that the side effects were serious, but nevertheless saw medication as necessary in severe cases [19].

Vrba (2019) performed a study aimed to assess who had more knowledge on ADHD. The results of the survey indicated that paediatricians and psychiatrists have adequate knowledge of ADHD and its management. Possibly because of the organisation of their practices psychiatrists were not as concerned as paediatricians about the time spent on each patient, but they were less likely to refer to other professionals [18]. On the other hand, paediatricians had more of an interdisciplinary approach to the management of children with ADHD, but found them time consuming, remuneration inadequate and had little time to prepare extensive reports or liaise with other professionals or schools. Psychiatrists appear to function within a neuro-biological model and have more knowledge on neuro-pharmacology and physiology [18]. Paediatricians have a greater educational and family awareness, possibly reflecting differences in training. Both groups use methylphenidate as the medication of choice and both have adequate knowledge of its benefits, side effects and contra-indications [18].

Oettle (2010) performed a study on the pharmacotherapeutic treatment of children and adolescents with ADHD and found that Methylphenidate was the most prescribed drug for the treatment of ADHD for children and adolescents in South Africa [20]. Atomoxetine was prescribed less due to its high cost. Although they have a high cost, the nonstimulants (atomoxetine) have no abuse potential and reduce insomnia [21]. They also have a better effect on growth in children [21].

Given the increased demand for disease remedies which are natural and, thus, perceived as being less harmful, use of supplements for the treatment of ADHD has become popular. In Oettle's (2010) study, most patients reported supplement use but 86.7% of these patients did not find them useful [20]. These range from supplementation of the diet with multivitamins and essential fatty acids to Biofeedback training. The growing popularity of these non-pharmacological treatments is of concern as many of them do not have scientifically sound evidence to support their benefit in the management of the condition [20]. Dietary modifications were reported as being moderately helpful on average by participants who indicated incorporation of this intervention in therapy [20].

50% of the participants took breaks or drug holidays on taking the medication during school holidays, indicating that the condition of ADHD was viewed as a scholastic condition and not as a life-long condition [20]. If behavioural techniques are taught, the parents should be trained to ensure that they are aware of the desired outcomes and how to act to promote the success of these. If supplementation or dietary modifications are implemented with the goal of improving ADHD management, parents should be aware of the dangers associated with discontinuation of drug therapy where it is indicated. If drug holidays are utilised, parents should ensure that these medication-free periods are given for appropriate reasons, such as allowing the child or adolescent to sleep or eat properly. Parents should be aware that the child's system does not "need a break" from methylphenidate as its effects do not persist for 24 hours and, as such, the child or adolescent is regularly free of the effects of the medication [20]. Vogel (2014) also recommends methylphenidate and Atomoxetine to treat ADHD [6].

Cockroft (2009) from South Africa looked at the side effects of methylphenidate and found that in a group of children with ADHD taking methylphenidate, there was a significant increase in sleepiness a few hours after taking the medication, which may then have a significant impact on their learning [22].

A study which explored how homeopathic practitioners practicing in Kwazulu Natal in South Africa manage ADHD found that amongst the homoeopaths participating in the study, the general consensus is that the diagnosis of ADD/ADHD is given far too easily, and without proper assessment (Medina). 86 percent of the homoeopaths were of the opinion that ADD/ADHD is misdiagnosed, and ninety one percent stated that ADD/ADHD is over diagnosed [23].

The majority of the practitioners prescribe a simplex remedy, or the Simillimum, whereas only a few practitioners prescribe a complex remedy. It was found that the most common complex prescribed is Nervoheel®. Some practitioners prefer to make up their own complexes, which would be patient specific [23].

The homoeopaths in this study stated that they prefer to use a holistic approach to obtain optimal well-being, thus advice, lifestyle adjustments, education and counselling all form part of the treatment and management of a patient with ADD/ADHD, making it unique and specific to each case [23]. Of the adjunctive therapies, vitamins, supplements and nutritional changes are recommended, especially if a deficiency has been identified [23]. The most commonly prescribed supplements for ADD/ADHD are the essential fatty acids (EFA's) followed by vitamin B complexes, multi-vitamins and magnesium, zinc and calcium [23].

Not much is known about adolescents with ADHD in Africa and there are limited studies that speak about them [24]. When the adolescent participants were asked what helped them the most to manage their condition, they all said, 'tablets' [24].

Vogel (2014) from South Africa recommends that a good clinical history and examination for diagnosing ADHD are essential [6]. Developmental history, including early childhood development, a psychosocial history, and an assessment of comorbid conditions is necessary in making a diagnosis for ADHD [6]. Collateral information, particularly from the school is essential to assess if the symptoms are present in more than one setting [6].

ADHD is genetic, so it is important to explore the mental health of both parents [6]. It is important to explore cardiac disease in the child's family before starting stimulant treatment for ADHD [6]. The physical examination should include weight, height, blood pressure and pulse. Exclude cardiac conditions and thyroid disorders and diabetes [6].

Rating scales are useful for the assessment but are not conclusive for the diagnosis [6]. Vogel (2014) recommends the The SNAP-IV (Swanson, Nolan and Pelham) as it is free and it can be downloaded from the internet [6]. Once the diagnosis of ADHD has been made, assess for comorbid condition as ADHD rarely exists on its own [6].

Treatment of ADHD involves pharmacological and psychosocial interventions [6]. For children under five with mild ADHD, psychosocial interventions are ideal [6]. If the ADHD is severe, pharmacological interventions along with psychosocial interventions may be offered [6]. Psychosocial interventions include parent programs, cognitive behavioural therapy, training behaviour modification techniques, which teach positive reinforcement to encourage good behavior [6]. 16 participants out of 32 reported that the teacher was the first person to become aware of the ADHD symptoms. Biological mothers were the second most frequent condition identifiers at 54.29% (19: n = 35). Only five participants reported identification of symptoms by fathers (14.29%, 5: n = 35). The most frequently consulted professional for diagnosis of ADHD was a paediatrician at 72.22% (26: n = 36), followed by a psychologist at 50.00% (18: n = 36) and occupational therapist (33.33%, 12: n = 36). Most participants consulted two or more professionals before diagnosis of ADHD was confirmed (65.71%, 23: n = 35). This was consistent with the recommended procedure for consultation and diagnosis of ADHD [6].

Schellack, *et al.* (2012) recommend polyunsaturated fatty acids (fish oil) and iron supplements in children with low ferritin levels which may improve ADHD symptoms [21]. Drug therapy that involves stimulants (methylphenidate) has been proven to be effective with a good safety profile [21]. However, concerns have been raised about cardiac, psychiatric and growth side-effects [21]. Other therapies include antidepressants and α_2 agonists. It is important to treat each patient using individualised therapy [21]. The role of the pharmacist is important to monitor and minimise side-effects [21].

ADHD and comorbidities

Auvin, *et al.* (2018) from SA performed a literature review on the management of children with epilepsy and comorbid ADHD and found that there is a bidirectional association between epilepsy and ADHD, with ADHD occurring 2.54 times more commonly in children with epilepsy than in control children without epilepsy and epilepsy occurring 3.94 times more in children with ADHD than in control children without ADHD [25]. Methylphenidate is tolerated and effective in children with epilepsy and comorbid ADHD [25]. Sodium Valproate exacerbates the ADHD in children with epilepsy and comorbid ADHD [25]. Risk factors for ADHD in children with epilepsy include comorbid developmental disabilities, as well as poor seizure control [25]. Screening for ADHD should be performed in every child with epilepsy starting at the age of 6 years, or at the time of diagnosis if older than 6 years and should be repeated annually [25].

Exacerbation of seizures is reported in 0% - 18% of study populations on methylphenidate, but most are mild and transient, with no more than 5% stopping medication [25]. Because these studies were not placebo-controlled, it is not possible to determine if the changes are related to baseline fluctuations [25]. Seizure exacerbation rates for atomoxetine were 7% - 9%, but the numbers were also too small to draw conclusions, and there are no data for amphetamines [25]. Seven studies, which included patients with refractory epilepsy, indicated that methylphenidate is probably safe [25]. There was only one study that documented tolerability to atomoxetine in a complex population group; 7% had seizure exacerbation [25]. Data collected by the pharmaceutical manufacturer found that seizures were no more prevalent in children with ADHD treated with atomoxetine than in children with ADHD without psychostimulant intervention. These data did not separate out children with comorbid epilepsy [25].

Mpango, *et al.* (2017) conducted a study in Uganda to see the correlation between prevalence of ADHD and the correlation with children who are HIV positive [26]. They found that the overall prevalence was 6% among children with ADHD [26]. The ADHD was mostly of the inattentive type. ADHD was associated with poor academic performance, school disciplinary problems and early onset of sexual intercourse [26]. Mpango, *et al.* (2017) recommend that there is an urgent need to integrate the delivery of mental health services into routine clinical care for HIV in Sub-Saharan Africa [26].

Management of ADHD by parents of children with ADHD

For many parents, the use of prescription medication for ADHD has poor connotations due to media reports [20]. Braude (2020) also found that due to the stigma associated with the diagnosis of ADHD, caregivers were reluctant to have their children with ADHD on medication [27].

Mofekeng, *et al.* (2017) performed a South African study which explored the challenges that parents of children with ADHD experience [28]. Parents living with a child with ADHD experience stress as they struggle to cope with the child's symptoms amidst the stigmatising attitudes from family and community members [28]. Parents experience burdensome emotions and impaired social and occupational functioning. Health care practitioners need to take note of the challenges inherent to parenting a child with ADHD in order to provide multi-disciplinary interventions aimed at empowering and supporting parents [28].

Gomes (2021) performed a study in Nigeria to assess the coping skills of families of children with ADHD and found that confusion regarding parental role clarity and the role of the child in the home had a strong bearing on the treatment and management of ADHD-related difficulties [29]. It was also found that the effect of parental unity and/or discord had a direct impact on ADHD-related behaviour. Equally important to the effective management of ADHD-related difficulties were the parental understanding and perceptions regarding their child's ADHD-related needs and difficulties. The effectiveness of behaviour modification in relation to the level of parental involvement was also salient, as was the use of effective, positive communication to achievement of optimum results. Parental understanding of the role of discipline and how the effective use of this skill benefits the ADHD-diagnosed child became clear, as did the value of consistency in behaviour modification. The conclusion was reached that a programme as flexible as the Coping Skills Programme, when used appropriately and as a supplement to other forms of therapy, may be a significant source of assistance, support, encouragement and empowerment to families with members with ADHD [29].

Sunderlall (2016) studied the behavior and functioning of parents of children with ADHD and found that 39 (48%) out of 83 parents who experienced impairment in all seven areas of functioning, 23 (59%) screened negative for ADHD, while 16 (41%) screened positive [30]. A significant association was found between parents who screened either positive or negative for ADHD and functional impairment across five of the seven individual categories namely family, work, self-concept, life-skills and social functioning [30]. This study emphasised the high incidence of functional impairment in parents of ADHD children. Although a substantial number of parents screened negative for ADHD, they still reported impairment in functioning; probably due to undiagnosed ADHD with comorbid psychiatric disorders, and/or parental stress due to the complex behaviour of the child [30]. Parents of children diagnosed with ADHD should be screened for functional impairment followed by referral for psychiatric assessment and parent management training to achieve better clinical outcomes [30].

Conclusion

The article focused on the management of ADHD in Africa/ Southern Africa. The findings of the review indicated a dearth of information regarding the management of ADHD in Africa. There is need for more training of parents and teachers on the management of ADHD. There is need for more standardised care and management on ADHD in Africa/ Southern Africa.

Bibliography

1. Bai GN, *et al.* "Effectiveness of a focused, brief psychoeducation program for parents of ADHD children: improvement of medication adherence and symptoms". *Neuropsychiatric Disease and Treatment* 11 (2015): 2721.
2. Topkin B and Roman NV. "Attention Deficit Disorder (ADHD): Primary school teachers' knowledge of symptoms, treatment and managing classroom behaviour". *South African Journal of Education* 35.2 (2015): 988.
3. Nel R. Classroom management of attention-deficit-hyperactivity disorder (ADHD) in learners in the Lejweleputswa district (Doctoral dissertation, Welkom: Central University of Technology, Free State).

4. Amod Z., *et al.* "Attention-Deficit/Hyperactivity Disorder (ADHD) as a barrier to learning and development within the South African context: The perspective of teachers". Intech Publishers: Rijeka, Croatia (2013).
5. Patel A and Parikh J. Prevalence of Attention Deficit Hyperactivity Disorder- ADHD among Young Adults- An Observational Study.
6. Vogel D. "An update on Attention Deficit and hyperactivity Disorder (ADHD)". *South African Medical Journal* 104.1 (2014): 72.
7. Lola HM., *et al.* "Attention deficit hyperactivity disorder (ADHD) among children aged 6 to 17 years old living in Girja District, Rural Ethiopia". *Behavioural Neurology* (2019).
8. Ntiakoh-Ayipah D., *et al.* "Prevalence of attention deficit hyperactivity disorder among pupils in primary schools in Ghana". *Journal of International Special Needs Education* 23.2 (2020): 69-78.
9. Stockigt G. The exploration of the management strategies used by educators working with learners presenting with Attention Deficit Hyperactivity Disorder (ADHD) symptoms in mainstream schools in the Western Cape.
10. Maema EK. Grade three teachers' experiences of learners perceived to have ADHD in Soweto mainstream primary schools (Doctoral dissertation).
11. Braude S and Dwarika V. "Teachers' experiences of supporting learners with attention-deficit hyperactivity disorder: Lessons for professional development of teachers". *South African Journal of Childhood Education* 10.1 (2020): 1.
12. Achilike BA and Achilike CC. "Identification and Diagnosis of ADHD among Primary School Children in Ebonyi State Southeast Nigeria: Implications for Effective Classroom Management/Interventions". *Journal of Education Policy and entrepreneurial Research* 3.4 (2016): 92-95.
13. Perold H., *et al.* "Primary school teachers' knowledge and misperceptions of attention deficit hyperactivity disorder (ADHD)". *South African Journal of Education* 30.3 (2010).
14. Ojionuka AN. "Nigerian Educators". Attention Deficit Hyperactivity Disorder Knowledge and Classroom Behavior Management Practices (Doctoral dissertation, Walden University).
15. Ndukuba AC., *et al.* "Symptoms of Attention Deficit Hyperactivity Disorder (ADHD) among Rural Primary School Children in South-eastern Nigeria: Comparison of School and Home Settings". *Nigerian Journal of Paediatrics* 42.4 (2015): 329-334.
16. De Jongh M., *et al.* "The piloting of a specific support programme for Grade R teachers on attention deficit hyperactivity disorder: The process of development". *South African Journal of Communication Disorders* 66.1 (2019): 1-9.
17. Mohammed FA. "Teachers Reaction to a Tailored Incredible Years Classroom Management Programme for Children with ADHD Symptoms in Addis Ababa". *International Journal of Contemporary Education* 2.1 (2019): 58-71.
18. Vrba K. A clinical audit of the management of ADHD in children and adolescents and comparison between two treatment sites in Cape Town (Master's thesis, Faculty of Health Sciences).
19. Nyachuba DA. The Attitudes of Healthcare Workers Towards ADHD in Kenya.
20. Oettle JA. The pharmacotherapeutic treatment of attention-deficit/hyperactivity disorder (ADHD) in children and adolescents (Doctoral dissertation).

21. Schellack N and Meyer H. "The management of attention deficit-hyperactivity disorder in children: evidence-based pharmacy practice". *SA Pharmaceutical Journal* 79.10 (2012): 12-20.
22. Cockcroft K, *et al.* "Sleep and daytime sleepiness in methylphenidate medicated and un-medicated children with attention-deficit/hyperactivity disorder (ADHD)". *African Journal of Psychiatry* 12.4 (2009).
23. Medina M. "The perception and management of ADD/ ADHD by homeopathic practitioners in Kwazulu- Natal". Masters dissertation: Durban University of Technology (2012).
24. Seabi J and Economou NA. "Understanding the distracted and the disinhibited: experiences of adolescents diagnosed with ADHD within the South African context". *Contemporary Trends in ADHD Research* 15 (2012): 165-182.
25. Auvin S, *et al.* "Systematic review of the screening, diagnosis, and management of ADHD in children with epilepsy. Consensus paper of the Task Force on Comorbidities of the ILAE Pediatric Commission". *Epilepsia* 59.10 (2018): 1867-1880.
26. Mpango RS, *et al.* "Prevalence and correlates for ADHD and relation with social and academic functioning among children and adolescents with HIV/AIDS in Uganda". *BMC Psychiatry* 17.1 (2017): 1-8.
27. Braude S and Dwarika V. "Teachers' experiences of supporting learners with attention-deficit hyperactivity disorder: Lessons for professional development of teachers". *South African Journal of Childhood Education*.
28. Mofokeng M and Van der Wath AE. "Challenges experienced by parents living with a child with attention deficit hyperactivity disorder". *Journal of Child and Adolescent Mental Health* 29.2 (2017): 137.
29. Gomes AM. A supplementary coping skills programme for parents of children diagnosed with attention deficit hyperactivity disorder.
30. Sundarlall R, *et al.* "The functioning and behaviour of biological parents of children diagnosed with attention-deficit/hyperactivity disorder, attending the outpatient department at Weskoppies Hospital, Pretoria". *South African Journal of Psychiatry* 22.1 (2016).

Volume 12 Issue 1 January 2023

© All rights reserved by Kasu S and Chikanza IC.