



Literacy about Attention-deficit/Hyperactivity Disorder among Primary School Teachers in Lagos, Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Authors All and OO designed the study and wrote the protocol. Author All managed the literature searches and statistical analysis and wrote the first draft of the manuscript. Authors All, AS, FA and BA managed the data collection and related protocols. All authors read and approved the final manuscript.

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ABSTRACT

Aim: Teachers have important roles in the identification, referral and management of school children with Attention-deficit/Hyperactivity Disorder (ADHD). However, their ability to play these roles is contingent on their depth of knowledge about ADHD. This study assessed literacy about ADHD in a sample of primary school teachers in Lagos, south-west Nigeria.

Study Design and Methodology: Using a cross-sectional study design, 144 primary school teachers in Lagos, south-West Nigeria completed a vignette-based questionnaire which assessed knowledge about symptoms and management of ADHD. The vignette depicted a student with ADHD based on the DSM-1V diagnostic criteria.

Results: The mean age of the participants was 41.7 (± 9.3) years, and 62.5% were females. Only

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7.6% of the primary school teachers correctly identified the ADHD case vignette. The teachers predominantly recommended corporal punishment/‘serious discipline’ (83.3%) in handling students with features of ADHD. The usefulness of medications and psychological interventions in ADHD were recognised by only 9.0% and 16.7% respectively.

Conclusion: There is a low level of ADHD literacy among primary school teachers in Lagos. This highlights the need for educational interventions to improve knowledge about ADHD among the school teachers.

Keywords: ADHD; mental health literacy; teachers; knowledge; children and adolescents.

1. INTRODUCTION

Attention-deficit/hyperactivity disorder (ADHD) is the most commonly diagnosed psychiatric disorder in childhood, with an estimated prevalence of about 5% [1]. ADHD is characterised by developmentally inappropriate symptoms of hyperactivity, impulsivity and/or inattention [2]. Structured learning activities demands sustained attention, impulse control, behavioural regulation and task completion, which are direct antithesis of the core features of ADHD [3-5]. Consequently, symptoms of ADHD, even when previously occult, become more apparent in the school setting with negative impact on academic performance and relationships with both teachers and students [3-5]. In spite of these, less than a third of children with ADHD present to mental health services for treatment [6].

Since the features of ADHD often become more prominent in the structured school setting, teachers have a crucial role to play in the early detection and referral of school children with ADHD [7-9]. Teachers are also required to implement classroom modifications, monitor progress using standardised rating scales and provide important feedbacks to the clinicians and parents [3,10-12]. However, this role is contingent on the literacy of the teachers about ADHD [7,8] as well as motivation to commit more time, effort and attention to children with ADHD [13-14]. Studies in western countries have shown that a high proportion of children with ADHD referred for clinical evaluation are first recognised by teachers [9]. This role may even be more important in a country like Nigeria where mental health is considerably under-resourced and a huge treatment gap exists. Early detection will facilitate prompt intervention thereby improving outcomes.

Previous studies on ADHD literacy among teachers in Europe Asia, Australia and America have shown varying gaps in knowledge about the symptoms of ADHD and the appropriate

treatment modalities [15-23]. The rates of literacy reported in these studies are not directly comparable due to methodological variances. Overall, higher rates of ADHD literacy were found among teachers in Australia, North America and the United Kingdom compared with Iran and Thailand. There is a dearth of research on ADHD literacy among teachers in sub-Saharan Africa. Considering the significant influence of teachers' ADHD literacy on their capacity to play crucial roles in the prompt identification, referral and management of school children with ADHD, it is important to bridge the gap in knowledge on this subject in Africa. Therefore the current study aimed to assess literacy about ADHD among primary school teachers in Lagos, Nigeria.

2. METHODOLOGY

The study design was a cross-sectional descriptive study. Participants were primary school teachers recruited from four schools in Lagos, south-West Nigeria. Four schools were selected by convenience sampling and all the consenting teachers in the chosen schools constituted the sample. Ethical approval was obtained from the Educational division authority in charge of the schools. The researchers approached the Head teacher of each school who subsequently facilitated contact with all the school teachers. Having explained the purpose and nature of the study to them, vignette-based questionnaires were distributed and questionnaires were completed by self-report during mid-day break. Administration and completion of the questionnaires lasted less than 30 mins and were returned directly to the researchers.

A vignette based questionnaire that has been previously used by other authors was used in this study [15,16]. The case vignette depicts a student with features of ADHD (combined subtype) based on the DSM-1V criteria [2]. “Daniel is nine years old and in Year 5, and is not making the academic progress his teacher would

expect even though he is of average cognitive ability. Daniel seems to daydream during lessons and sometimes does not listen when directly spoken to. Anything that happens in the classroom takes his mind off his work, which he then finds hard to return to. He frequently fails to follow verbal or written instructions for tasks; however, with one-to-one help, Daniel is able to understand instructions and is willing to follow them. He has difficulty getting ready for activities or doing things in an organised way; he tends to shift from one thing to another. Daniel makes careless mistakes and his schoolwork is messy and incomplete mainly because he fails to pay attention to detail. He frequently misplaces things and is forgetful. Daniel tries to avoid doing things that require mental effort, especially if he is not interested in the subject. Daniel is fidgety and frequently leaves his seat and wanders about the classroom. He gets into trouble with his friends because he does not take turns when playing and is constantly running about and intruding on other people's games. He is chatty, interrupts other people and answers questions before the teacher has finished asking. Daniel comes across as being different from the rest of the class, who are more focused and able to stay on task and sit quietly. His previous teachers had a similar experience teaching him. Daniel's parents say that he has always been like this, and he is forgetful and restless at home as well. Daniel's teacher and parents believe that Daniel's difficulties significantly impair his academic functioning, his leisure activities and his home life".

The vignette was followed by an open ended question eliciting knowledge of ADHD; 'What do you think is wrong with Daniel?' Subsequent items elicited knowledge about treatment in a True/False response format. The items included 'Daniel should be evaluated if medication would be useful for him', 'Daniel would benefit from psychotherapy/psychological treatment'. 'As a teacher, I have a role in the management of Daniel). Participants were asked to state their recommendation toward Daniel's improvement. The age, gender and years of teaching experience were also elicited.

2.1 Data Analysis

Data was analysed with SPSS-IBM version 20. Descriptive statistics such as frequencies, percentages or mean values were computed for relevant socio-demographic and literacy variables.

3. RESULTS

The mean age of the participants was 41.7 (± 9.3) years, and 62.5% were females. Their mean year of teaching experience was 12.6 (± 7.8) years. Only 7.6% of the teachers correctly identified the case vignette as depicting ADHD (Fig. 1). Other categories of responses included 'too playful'/ 'silly' (49.3%), stubborn/naughty (30.6%), and over-indulged/'over-pampered'/'spoiled child' (12.5%).

Less than a tenth (9.0%) and 16.7% of the respondents were aware that ADHD could be managed with medications and psychological treatment respectively (Fig. 2). Only 6.3% agreed that teachers have a role in the management of students with ADHD. The predominant recommendation (83.3%) for ADHD was corporal punishment/'serious discipline'.

4. DISCUSSION

We found a remarkably low level of ADHD literacy among primary school teachers in Lagos, Nigeria; Only 7.6% of the respondents recognised the features of ADHD described in the case vignette. To the best of our knowledge, ours is the first study to assess ADHD literacy among primary school teachers in sub-Saharan Africa. Previous studies in other parts of the world revealed comparably higher rates of literacy. Muanprasart et al. [17] reported that about one fifth of primary school teachers in Thailand, had good literacy about ADHD while nearly half (47%) of teachers in Iran recognised ADHD as a biological disorder [18]. Elementary school teachers in Australia and North America demonstrated higher levels of ADHD literacy with average rates of correct responses to questionnaire items eliciting knowledge about the features of ADHD ranging from 76% to 82% and 48% to 82% respectively [12,19-23]. In the United Kingdom, case vignettes of ADHD were correctly identified by 43% and 56% of elementary school teachers in studies conducted by Groenwald et al. [16] and Moldavsky et al. [24] respectively. Though methodological differences preclude strict comparability, the divergence in rates across studies is a reflection of the varying degrees of unmet needs for mental health/ADHD literacy among teachers in different parts of the world.

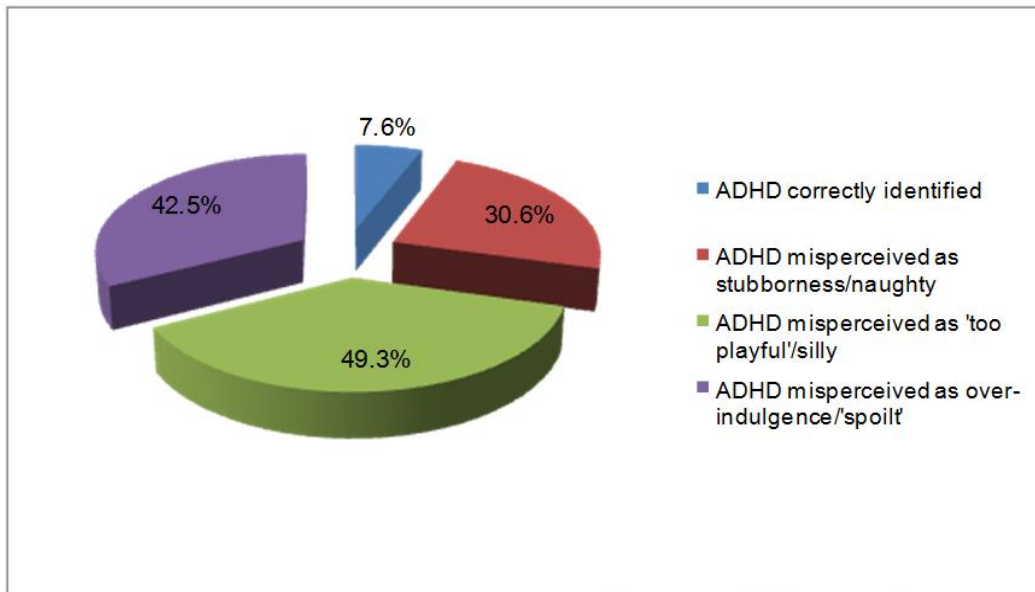


Fig. 1. ADHD literacy among teachers based on the Identification of ADHD case vignette

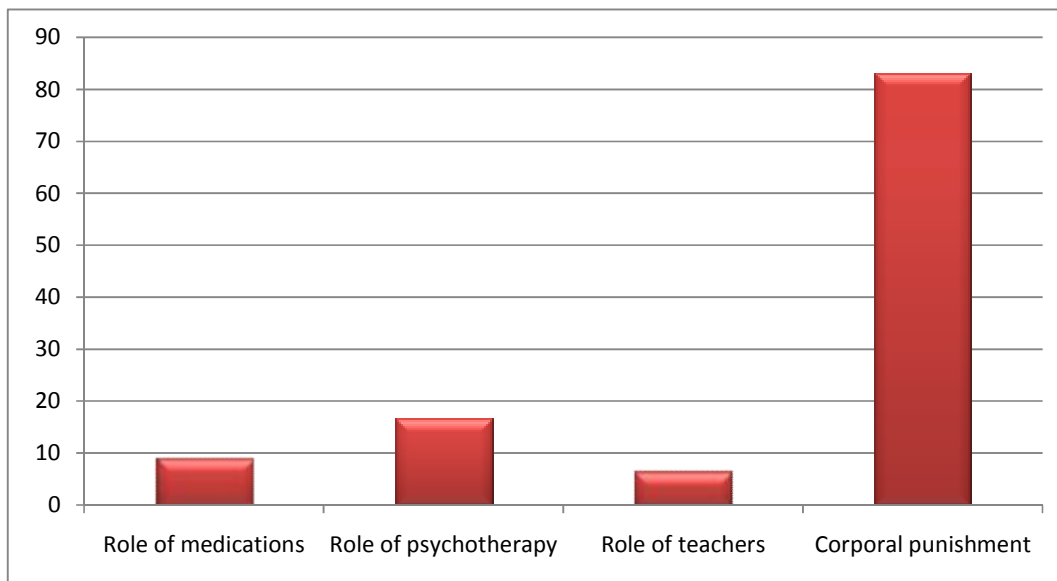


Fig. 2. Recommendations of teachers in the management of ADHD

Less than a fifth (17%) of the teachers recognised the usefulness of psychological interventions in ADHD, and only 6% believed that teachers have a role to play in the management of ADHD. These contrast with previous findings in developed countries and further reflect the low rates of ADHD literacy among the teachers in our sample. For instance, a recent study in the U.K reported that 100% of a sample of elementary school teachers recognised the role of teachers

in the provision of learning support for students with ADHD [15]. Nearly all the teachers in the latter study also endorsed working with parents (97%) and the need for provision of behavioural interventions (95%) when students have ADHD [15]. However few western studies reported that majority of primary school teachers did not perceive classroom behavioural modification as effective [25].

In consonance with poor literacy about the features of ADHD, less than a tenth of the teachers in the current study perceived medications as beneficial in ADHD. Previous research indicated that teachers are less informed about treatment for ADHD than other aspects of the disorder [15,20,22,24,26]. For instance, Groenwald et al. [24] reported that only 15% of a sample of teachers in the U.K believed that medications could be helpful for ADHD. A recent qualitative study explored factors accounting for non-endorsement of medications by teachers in the U.K despite being knowledgeable about the features of ADHD [15]. The study demonstrated that nearly half of teachers who correctly identified ADHD case vignettes held cautious or negative views about treatment [15]. This was attributed to teachers' construction of ADHD as a problem rather than a disease or that ADHD is not severe enough to justify medication use; beliefs that medications should be a last resort or used cautiously because of potential adverse effects and ignorance about availability of suitable medications for ADHD [15]. The teachers' perception that sugar or food additives contribute to the etiology of ADHD may account for their endorsement of dietary modification rather than use of medications in the management of ADHD [19,22,23,26,27]. This perception has been widely reported among teachers in Australia and North America, though a study by Curtis et al. [12] indicated that teachers in U.S.A were more likely to endorse medications for ADHD than those in Australia. Some studies have reported correlation between high sugar intake with hyperactivity in children, while other studies found no relationship between sugar consumption and ADHD [28-32]. It has been postulated that high dietary sugar may trigger massive insulin secretion resulting in hypoglycemia, increased epinephrine release and consequently activation of the nervous system and hyperactivity [30]. However, conclusive evidence in this regard awaits further research.

In the current study, the majority of the teachers recommended corporal punishment or 'discipline' for ADHD. This is consistent with the predominant misconception of ADHD as 'stubbornness', 'playfulness' or 'overindulgence'. Similar findings have also been reported in Iran, where 53% of teachers attributed ADHD to 'parental spoiling and about two thirds recommended disciplinary measures in handling children with ADHD [18]. Consequently, students

with ADHD may be vulnerable to abuse which may worsen their psycho-social profile and outcomes.

Overall, our findings indicate a dire need for interventions targeted at improving ADHD literacy among primary school teachers. This is crucial considering the potential influence of teachers' knowledge about ADHD on the outcomes of affected children. When symptoms of ADHD are unrecognised by teachers, opportunities for referrals and early intervention may be missed [33]. Furthermore, teachers with poor knowledge about ADHD cannot meet the educational needs of students with ADHD. Without engagement in multimodal interventions including behavioural modifications within the classroom setting and educational support, Children with ADHD will perform below their intellectual capacity and their schooling may be disrupted [3,5,20].

The poor level of knowledge about the features of ADHD among teachers in the current study highlights an unmet need for ADHD literacy interventions among the school teachers. [33]. Strategies that have been shown to improve ADHD literacy of teachers include educational workshops, integration of mental health/ADHD education into the curriculum of teachers training, in-service continuous education development. These interventions have been shown to be effective in improving mental health literacy among teachers in Iran [34], U.S.A [27,35], Brazil [36] and the United Kingdom [37].

Our findings have a number of limitations. Firstly, the sample size was limited and the participants were recruited by convenient sampling which may limit the generalisation of our findings to the general population. Secondly, responses of the participants to the vignette based questionnaire may not be the same as the reaction in real-life situations. Furthermore, participants may give socially desirable responses. However, participants were assured of the anonymity and confidentiality of their responses. The use of case vignette has also been shown to facilitate communication of the adolescent's opinion with minimal interference from the researcher. Furthermore, the use of a similar methodology to previous studies conducted in other parts of the world facilitated comparison of our results with extant literature. Overall, the current study has provided valuable information on a previously under-researched subject in Africa. Further large

scale research is desirable to extend the current findings.

5. CONCLUSION

This study found a remarkably lower level of ADHD literacy among a limited sample of primary school teachers in Nigeria, in comparison with previous research in other parts of the world. There were huge deficits in the teachers' recognition of the symptoms of ADHD, usefulness of available treatment options and awareness of their role in the referral of students with ADHD. These findings indicate a crucial need to engage the teachers in literacy interventions in order to improve their knowledge about ADHD.

CONSENT AND ETHICAL APPROVAL

All authors declare that the study obtained consent and ethical approval and was carried out in accordance with the ethical standards laid down in the 1964 declaration of Helsinki.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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