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Prevalence of attention deficit hyperactive disorder (ADHD) symptoms in selected government primary schools in Wakiso District, Uganda

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Abstract

Purpose – This paper on the prevalence of attention deficit hyperactive disorder (ADHD) in schools holds immense significance due to its unique contribution to the existing body of knowledge. This study stands out as one of the few conducted in Uganda and the entire African continent. The purpose of this study is to establish the prevalence of ADHD symptoms in government primary schools in Wakiso District, Uganda. And also inform educational policies and interventions tailored to address the needs of children with ADHD in Uganda and globally.

Design/methodology/approach – The research paradigm adopted was pragmatism, an explanatory sequential mixed methods approach was used, with a quantitative sample of 1,067 participants (learners), 64 teachers who underwent a series of training to equip them with the necessary knowledge about ADHD filled questionnaires for the 1,067 learners, four teachers selected in each school, one teacher per class and a qualitative sample of 32 teachers and one key informant from 16 primary schools. Random and purposive sampling was used. The strengths and weaknesses of ADHD symptoms and normal behavior scale questionnaire was used for quantitative data collection, while qualitative data was gathered through interviews, observations and focus group discussion.

Findings – The results revealed an overall prevalence of ADHD symptoms of 11.60%, with inattention symptoms being more dominant than hyperactive/impulsivity symptoms (8.82%). There was no significant difference in prevalence between boys and girls, with primary one pupils having the highest prevalence of symptoms and primary four pupils having the lowest. Pupils aged 10–13 may be less susceptible to ADHD symptoms. The most prevalent symptoms were linked to interrupting or intruding behavior, failure to give attention to detail and inability to play quietly. Qualitative data from the key informant's observations and teacher focus groups supported these findings.

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Research limitations/implications – *Limited geographic scope*: The study was conducted in only one district, Wakiso, in Uganda. However, this district is very densely populated with people from different cultural and economic background, making it representative of the entire country Uganda. While the response rates for both the quantitative and qualitative components were relatively high (95% and 84%, respectively), there is a possibility that those who chose to participate may have different experiences. But the response rate provided sufficient data for analysis according to the researcher.

Practical implications – The researcher recommends that further research is needed in other districts; also, there is a need to develop early intervention strategies for teachers and parents with ADHD children. More research is needed to better understand the primary causes and risk factors associated with ADHD in primary school children.

Originality/value – This study stands out as one of the few conducted in Uganda and the entire African continent on ADHD. By addressing this research gap, the paper adds valuable insights to the field of ADHD research, shedding light on the prevalence of ADHD symptoms, which can be used to investigate the impact of ADHD on academic performance within the Ugandan education system further. The findings of this study have the potential to inform educational policies and interventions tailored to address the needs of children with ADHD in Africa and beyond.

Keywords ADHD, Prevalence, SWAN, Intervention

Paper type Research paper

1. Introduction

Attention deficit hyperactive disorder (ADHD) has been described for over 200 years ago, and at first it was called "a lack of moral control" among children (Barkley, 1997). However, a few decades later, it was termed as "brain damage" syndrome, whereas today it is called ADHD (American Psychiatric Association, 2013). Currently, ADHD is recognized as the most common behavioral disorder of childhood, affecting about 4% to 12% of children aged 3–17 years globally (Pastor *et al.*, 2013).

According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), the fundamental characteristics of ADHD are a persistent pattern of inattention and/or hyperactivity and impulsivity, more severe than in typically normal developing children (American Psychiatric Association, 2013). The exact cause of ADHD is not clear while genetic factors play some role. Current studies suggest that some environmental characteristics can accelerate the conditions of ADHD (Faraone *et al.*, 2015; Faraone *et al.*, 2021; Franz *et al.*, 2018).

2. Problem statement

Uganda has over 91% of children of primary age enrolled in primary schools. In total, 15.7% of the population have some form of disability, including ADHD (Ministry of Education and Sports, 2019), while 12% of school-going children globally have typical ADHD symptoms (APA, 2013) which is one of the most common disorder among school-going children aged 3–18 years. Very few studies have been done to establish the prevalence of ADHD in schools in Uganda. One of the few studies done by Wamulugwa *et al.* (2017) in a clinical setting at Mulago Hospital put the prevalence of ADHD among children at 11%. Therefore, this study was carried out to establish the prevalence of ADHD among government primary schools in Wakiso District, Uganda.

3. Literature review

3.1 Attention deficit hyperactive disorder symptoms

The DSM-5 categorizes ADHD into three types of behaviors, namely, inattention, hyperactivity and impulsivity, which cause difficulties for children in learning and social

skills. ADHD is believed to involve genetic and environmental factors. Boys are estimated to be two to three times more likely to develop ADHD than girls (Barkley, 1997; Cantwell, 1997). The symptoms of ADHD are divided into two groups – inattentive and hyperactive-impulsive. Many children with ADHD exhibit a combination of both which makes it difficult for them to function effectively in school.

The symptoms of ADHD are divided into two groups, namely, inattentive and hyperactive-impulsive. Some children exhibit mostly inattentive behaviors and others predominantly hyperactive-impulsive behavior. According to the American Psychiatric Association (2013), many children with ADHD have a combination of both, which makes it very hard for them to function effectively in school.

The major inattentive symptoms of ADHD include making careless mistakes in schoolwork, overlooking details, being easily distracted or sidetracked, having difficulty following instructions, not listening when spoken to directly, having trouble organizing tasks and possessions, often fails to finish work in school or chores in the classroom, often avoids or resists tasks that require sustained mental effort including doing homework, and often loses homework assignments, books, jackets, backpacks and sports equipment.

Hyperactive or impulsive symptoms of ADHD include often fidgeting or squirms, having trouble staying in his seat, runs and climbs where it is inappropriate, has difficulty playing quietly, is extremely impatient, cannot wait for his turn, always seems to be "on the move" talks excessively, blurts out answers before a question is completed, intrudes others' conversations or activities (APA, 2013).

3.2 The prevalence of attention deficit hyperactive disorder in the world

According to Ayano *et al.* (2020), ADHD is the most prevalent neuro-developmental disorder in childhood and adolescence, affecting 2.2% to 17.8% of all school-going children globally. It is also associated with difficulties in learning and impaired social skills. The prevalence of ADHD is illustrated in Table 1.

As per Table 1, it can be said that the ADHD average global prevalence is around 7.8%, and all the scholars indicated in Table 1 have agreed that people with ADHD are at increased risk of low-quality life, accidental injuries and educational underachievement.

The prevalence in Table 1 above and the literature reviewed below provide awareness into different aspects related to ADHD symptoms and their prevalence in educational contexts. By examining the motivation and experience of children participating in physical activity programs in schools (Mazurana *et al.*, 2017), indirectly highlighted the importance of addressing psychological well-being and behavior in children, including those with ADHD. This can inform interventions and support strategies in primary schools in Wakiso District, Uganda.

Table 1.
Prevalence of ADHD in the world

Scholar/author	Year	Prevalence (%)	Region
Young *et al.*	2021	Between 5%–7%	Globally
Ayano *et al.*	2020	7.4%	Africa
Ayano *et al.*	2020	Between 2.2%–17.8%	Globally
Wamulugwa *et al.*	2017	11%	Uganda
Ashenifi *et al.*	2001	5%	Ethiopia

Source: Ayano *et al.* (2020)

The impact of executive functioning deficits on school performance and peer relationships in children with ADHD (Baweja *et al.*, 2015) sheds light on the challenges faced by these children in educational settings. This information is relevant to understanding the prevalence and impact of ADHD symptoms in primary schools in Uganda and can inform interventions and support systems.

The book chapter by Tannock (2013) provided a comprehensive overview of ADHD, including diagnostic criteria and treatment options. While not specific to Uganda, it offers understandings into the overall prevalence of ADHD symptoms that can be applied to similar contexts like primary schools in the Wakiso District.

Another study by Karande *et al.* (2010) explores the clinical and psychoeducational profiles of children with ADHD in India. Although conducted in a different country, it provides useful information on the symptomatology and prevalence of ADHD in a similar context that can be extrapolated and compared to the situation in primary schools in Uganda.

The study by Chheda and Kenge (2017) focuses on a resource-constrained school setting in India and explores the characteristics of children with ADHD. While the context differs from Uganda, it offers insights into the challenges faced by these children and their prevalence in under-resourced educational environments which may be comparable to primary schools in Uganda.

The above literature aided this study by providing a comprehensive and contextualized analysis of the prevalence and characteristics of ADHD symptoms in the specific setting of Wakiso District, Uganda and could guide strategies for addressing and managing ADHD in primary schools globally.

4. Methodology

This study used the explanatory sequential mixed methods design to establish the prevalence of ADHD symptoms among learners in government primary schools in Wakiso District, Uganda. This design involved collecting quantitative data first and then explaining the quantitative results with in-depth qualitative data. This was supported by the recommendations of Creswell (2014), Ghiara (2020) and Martens (2015), who all noted that a mixed method approach is useful and can be adopted when qualitative or quantitative approaches each by itself is inadequate to best understand a research problem. Ghiara (2020) further asserts that when two approaches (qualitative and quantitative) are combined in a single study, the strengths of each provide the best understanding of a research problem and help to minimize the limitations of each other.

4.1 Study population

The study focused on Wakiso District, located in Uganda as indicated in Figure 1 above; it is bordered by Nakaseke District, Luweero District, Mukono District, Kalangala District, Mpigi District and Mityana District. Wakiso District is comprised of two counties, Kyadondo and Busiro, as well as the municipalities of Entebbe, Kajjansi and Nansana. The coordinates of the district are: 00°24′N 32°29′.

The participants in this study were learners (pupils from p. 1 to p. 4) and teachers from government primary schools in Wakiso District. The teachers were able to provide valuable information about the children's behavior; the researcher plus the key informant observed the children's behavior at school.

Wakiso District was chosen for this study due to several factors. First, it has a high population density, with approximately 3.5 million people, making it the most populous district in Uganda. This population density, combined with its urban and rural mix, as well

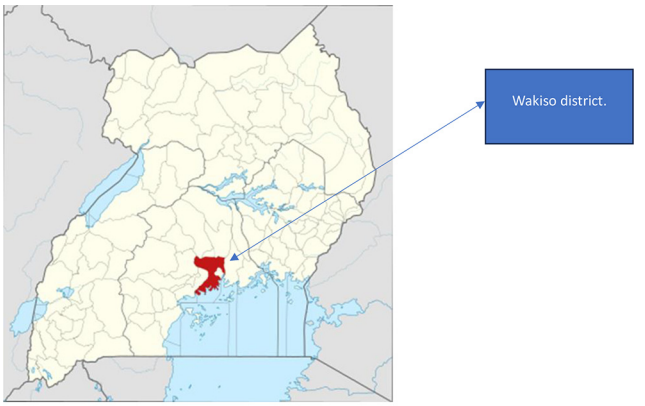


Figure 1.
Map of Uganda showing Wakiso district

Source: https://wakiso.go.ug/unit/education-sports/

as its socioeconomic diversity, makes Wakiso an ideal representation of the broader Ugandan population.

Wakiso District has a substantial number of government primary schools, totaling 256, offering ample opportunities to comprehensively examine ADHD symptoms within this specific educational context. It is also conveniently located near the capital city of Kampala, making it easily accessible for data collection and research purposes.

4.2 The sample frame and sampling procedure

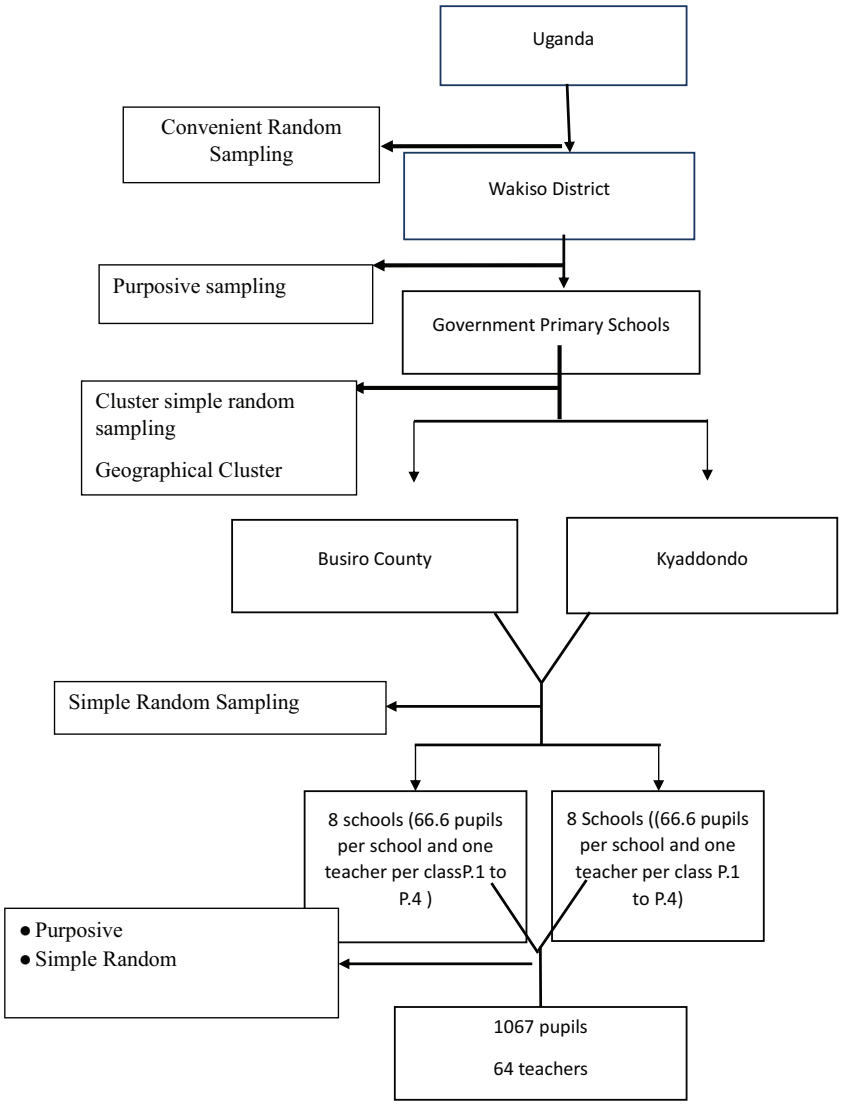
The sampling techniques used included both probability and nonprobability sampling techniques, namely, simple random sampling, where every member of the population has an equal chance of being selected; this was used to select the government primary schools from Wakiso District. This sampling technique ensures a high degree of representation, is free from bias and prejudice and is simple to use. Cluster sampling based on geographical location (Kyadondo and Busiro clusters) was also conducted. The two-stage cluster sampling randomly selected schools from each cluster for the sample. Purposive sampling, recommended by Robinson (2014), was used to select class teachers with children aged 5 to 13 years who attended the training sessions conducted by the research team. Purposive sampling is particularly useful when reaching a targeted sample quickly and gaining a better understanding of the research topic (ADHD).

4.3 The sampling procedure that was used in this study is illustrated in Figure 2

Whereas 64 teachers filled out the questionnaires to supply quantitative data on a sample of 1,067 learners in 16 primary government schools (by picking a class teacher in each of the classes; P.1–P.4), 32 teachers supplied qualitative data through focus group interviews, and one key informant via observation and interview.

Participant inclusion criteria, the following were considered:

- Participants must have freely agreed to participate in the study.
- Children had to seek consent from their parents.
- Children studying in lower primary classes p. 1 to p. 4 (aged 5 to 13 years) in government primary schools were included.



Source: Researcher Ssirimuzaawo *et al*. (2022)

Figure 2.
Sampling procedure

- A primary classroom teacher who agreed to participate in the study attended all three training sessions and demonstrated readiness to fill out the SWAN questionnaire, consent forms (parent and teacher) and an assent form (child), all approved by the Research Ethics Committee in Uganda.
- Parents provided written consent for the exchange of information between the school and the research team.

- To document the presence of ADHD symptoms, the research team required at least four inattention symptoms and/or four hyperactive-impulsive symptoms endorsed by the teachers scoring for the pupil, with a score of 3, 2 or 1 on at least four questions for inattention and four questions for hyperactive-impulsive symptoms.

4.4 Data collection tools and procedures

In this study, the strengths and weaknesses of ADHD symptoms and normal behavior (SWAN) were used as a tool to test for the presence of ADHD symptoms among school-going children. The SWAN rating scale is a widely used tool in psychology and psychiatry to assess and identify symptoms of ADHD in individuals. It consists of a series of questions and statements that parents or teachers can use to evaluate a child's behavior in different settings. The scale measures the severity and manifestations of ADHD symptoms in both children and adults, comparing their levels of activity to other children of the same age.

It involves rating behaviors such as inattention, hyperactivity, impulsivity, all of which are the major symptoms of ADHD in the DSM-5. All these levels of activity are compared to other children of the same age. The scale measures ADHD symptoms relative to a normative population and allows for a comprehensive evaluation of strengths and weaknesses.

Why use teachers, not parents, to fill out the questionnaire?

In this study, teachers were chosen to fill out the SWAN questionnaire on behalf of the pupils. There are three main reasons for this decision. First, the researchers conducted training sessions with the teachers to ensure they had the necessary knowledge and skills to recognize ADHD symptoms. These sessions allowed the teachers to share their experiences and learn about ADHD symptoms in depth. The trainings consisted of three sessions over the course of three weeks. In the first session, the researchers established rapport with the teachers and assessed their existing knowledge of ADHD. In the second session, the researchers provided a manual containing ADHD symptoms, allowing the teachers to discuss and share their experiences. Finally, in the third session, the researchers confirmed that the teachers were prepared and capable of recognizing ADHD symptoms.

Second, teachers spend a significant amount of time with the children, often even more than their parents do. In Ugandan schools, and particularly in Wakiso District, children leave home very early in the morning (as early as 6 a.m.) and return in the late afternoon. Many parents may not be home at these times, or if they are, they may be occupied with household chores. In contrast, teachers interact with the children throughout the school day. The school year in Uganda consists of three terms, each lasting 12/13 weeks. This means that children spend most of their days at school, making it crucial for teachers to have a good understanding of their pupils. Also, children often confide in their teachers, creating a trusting relationship that can aid in identifying ADHD symptoms.

Finally, special needs education is a part of the teacher training curriculum in Uganda. This means that teachers are already familiar with various learning disabilities, including ADHD. As a result, ADHD is not a new phenomenon for most teachers, and they have learned about it in college or had someone talk about it. Therefore, the involvement of teachers in identifying the prevalence of ADHD in schools is justified based on their training, extensive time spent with the children and prior knowledge of special needs education.

Previous research studies have used the SWAN scale to assess ADHD symptoms in different African countries. The scale has shown to be effective in identifying ADHD

symptoms and measuring the effectiveness of interventions for ADHD. While there are limited specific studies conducted exclusively in Uganda, there are studies that have explored ADHD symptoms using the SWAN tool in other African countries, such as a study titled "Attention-Deficit/Hyperactivity Disorder in a Kenyan Sample" by Abubakar *et al.* (2015), which used the SWAN instrument to assess ADHD symptoms among children aged 6–12 in Kenya. Another study by Swanson *et al.* (1999) compared the performance of children diagnosed with ADHD with typically developing children using the SWAN scale. The results showed significant differences in symptom severity scores between the two groups, highlighting the utility of SWAN in identifying ADHD symptoms. Another research by Wolraich *et al.* (2003) used the SWAN rating scale to assess ADHD symptoms in a group of children. The study aimed to determine the effectiveness of different treatments for ADHD. The findings from the SWAN scores helped in comparing the symptom improvement over time and evaluating the efficacy of the interventions. The reliability of the SWAN questionnaire can be established through studies above that have used it.

The scale includes items related to both the inattentive and hyperactive/impulsive symptom domains of ADHD. Inattention symptoms reflect difficulties in sustaining attention, being easily distracted, making careless mistakes and struggling with organization and follow-through. Hyperactivity symptoms involve excessive motor activity, fidgeting, restlessness, difficulty staying seated and impulsivity, often leading to interrupting others or blurting out responses.

How was the SWAN used in this study?

To ensure the questionnaire's appropriateness for the Ugandan context, modifications were made, including adapting the language and wording of certain items to be more culturally relevant and understandable. A pilot study was conducted with Ugandan school children to assess the clarity and comprehensibility of the questionnaire. Based on the findings of the pilot study, necessary modifications were made to improve the questionnaire's effectiveness and relevance to the primary school pupils in Wakiso District.

The SWAN scale was used in this study to identify and assess students with ADHD symptoms. The scale consisted of a questionnaire with descriptive statements rated on a seven-point Likert scale ranging from "far below = 1" to "far above = 7." Teachers were responsible for indicating the extent to which these statements applied to the students.

To determine the presence of ADHD symptoms, pupils who scored below four on a specific question were considered to exhibit symptoms of ADHD. This meant that pupils who scored 3, 2 or 1 were classified as having symptoms of ADHD. Additionally, if a pupils scored below four on at least four out of the eight or more questions, they were categorized as having ADHD symptoms, according to Table 5.

However, it is important to note that the researcher sought the views of the key informant, who was a specialist in special needs education, to confirm the presence of ADHD symptoms. This additional step ensured a more accurate assessment.

For example, if a learner received a score of 3 on four questions, which is slightly below the average (4), their overall score would be calculated as follows: $3/4 = 0.75$. However, the researcher found this criterion to be unclear and decided to eliminate it. Instead, for a pupil to be considered as having ADHD symptoms, they needed to score 3, 2 or 1 on at least 4 of the 9 questions related to hyperactivity/impulsivity and at least 4 out of the 9 questions related to inattentive symptoms, making the total score of at least 3, 2 or 1 on over 8 questions out of the total 18 questions on SWAN, as indicated in Table 5.

The SWAN scale, along with observations by the researcher and observation of the key informant, was used in this study to recognize and evaluate symptoms of ADHD in primary

school pupils in Wakiso District, Uganda. The involvement of teachers in filling out the questionnaire was justified based on their training, extensive time spent with the children and prior knowledge of special needs education. The scoring system was adjusted to prioritize pupils who scored below four on at least four of the nine questions related to hyperactivity/impulsivity or inattentive symptoms.

4.5 Reliability and validity of research instrument

Reliability is the consistency of a measure across time (test-retest reliability) (Price *et al.*, 2015).

In this study, the researcher used the test-retest technique whereby SWAN was used on the same group at different times to check for the consistency/correlation between the two scores.

White and Sabarwal (2014) and Price *et al.* (2015) defined validity as the extent to which scores from a measure represent the variable they intended to. They mentioned two forms of validity that are critical to research: internal and external validity, which indicates how well the major research questions are operationalized in the study (Do the findings of the study make sense?) (Price *et al.*, 2015).

In this study, to increase its internal validity, the researcher adopted the following techniques: first, the researcher controlled the extraneous and confounding variable by selecting the same category of participants (learners in same class and within same age group, same category of school and with similar teachers with similar teaching styles).

In this research, to increase external validity, the researcher used a Mixed Methods Design, which incorporates qualitative and quantitative studies which is very high in external validity. The sample was relatively big, with 1,067 participants for quantitative and a sample of 33 participants for qualitative. The study covered a big area Wakiso District, which is quite big as it represents characteristics of almost all people in Uganda. The district of Wakiso has a population size of approximately 3.5 million people, making it the second most populous district in Uganda. It is known for its diverse demographics, encompassing different ethnic groups and socioeconomic backgrounds.

4.6 Data processing and analysis

To provide an overview of the prevalence of ADHD symptoms the following descriptive statistics were used:

- *Frequency*: This statistic determines the number of children exhibiting ADHD symptoms in each government primary school within the district. It allows for a count of the total number of cases, providing an overview of the prevalence of ADHD in schools.
- *Percentage*: By calculating the percentage of children with ADHD symptoms in primary school, it becomes possible to compare the distribution of ADHD prevalence across different schools. This can help in identifying schools where the disorder is more prevalent or less prevalent.
- *Confidence interval*: By calculating the confidence interval around the ADHD prevalence estimate, it provides a range within which we can be certain that the true prevalence lies. This statistic is useful for obtaining a more accurate overview, accounting for potential sampling variability or uncertainties in the data.

5. Findings

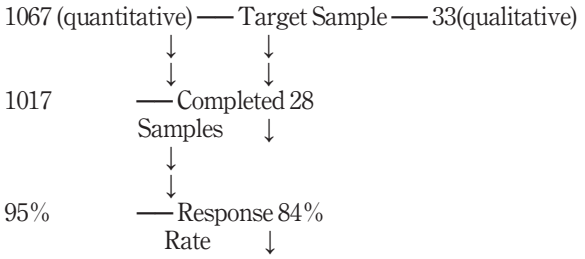
5.1 Study response rate

The response rate for the study is summarized in Table 2. The table presents the study's target sample, completed samples and the response rate for both the quantitative and qualitative components of the study.

For the quantitative component, the study aimed to recruit and survey 1,067 primary school children. However, only 1,017 children completed the survey, resulting in a response rate of 95%. This means that 95% of the targeted sample participated and provided sufficient data for analysis.

For the qualitative component, the researchers aimed to conduct in-depth interviews with 33 participants. Nevertheless, only 28 interviews were completed, resulting in a response rate of 84%. This indicates that 84% of the targeted participants engaged in the interviews, and their responses were included in the qualitative analysis.

The flowchart below demonstrates.



The flowchart illustrates that the study initially targeted a sample of 1,067 primary school children and 33 participants for the quantitative and qualitative components, respectively. However, only 1,017 children completed the survey, resulting in a response rate of 95% for the quantitative component. Similarly, only 28 participants were available for the qualitative interviews, yielding a response rate of 84%. The flowchart visually represents the dropout rate for each component, highlighting the number of participants who either did not complete the survey or were unavailable for the interviews. Generally, the response rate was big enough, and the dropout rate did not affect the results of the study.

Possible reasons for the dropout rate included:

- *Lack of interest or motivation*: Some parents changed their minds about their children participating in the study. This could be due to the perceived lack of relevance of the study to their personal lives or the perception that participation would require a significant amount of time and effort.
- *Time constraints*: Participants may have faced challenges in finding the time to complete the study. Given that the study involved primary school children, they may have had competing priorities such as schoolwork, extracurricular activities or family responsibilities such as they got sick or their parents got sick, leading them to fail to turn up for school.

Study	Target-sample	Completed-samples	Response rate (%)
Quantitative	1,067	1,017	95
Qualitative	33	28	84

Source: Researcher Ssirimuzaawo *et al.* (2022)

Table 2. Response rate

5.2 Demographic characteristics of the participants

The study gathered data on various demographics of the participants from various primary schools. The demographics considered included the gender of the learner, age of the learner, class of the learner and school type. The study sought to establish the demographic background of respondents who were engaged in the study. Findings on the demographic characteristics are presented in Table 3.

From the table above, 60.96% of the participants were boys, 44.84% were from primary one, 38.64% were aged between 10 and 13 years and 80.83% were from normal schools.

5.3 Quantitative findings on attention deficit hyperactive disorder symptoms

The data that was analyzed was obtained through a structured questionnaire (SWAN). For each study variable, participants were presented with descriptive statements on a seven-point Likert scale (1. far below, 2. below,3. slightly below, 4. average, 5. slightly above, 6. above and 7. far above), and teachers were required to indicate the extent to which the statements applied to the learners. The details are presented using descriptive analysis using frequency distribution tables and descriptive statistics using percentages and frequencies.

ADHD was assessed using 18 items as shown in Table 4. The findings show that 35.30% of the learners were below average on the item "Attention to detail and not careless," 51.82% were above average. Additionally, 57.72% were above average on the item "Sustain attention on tasks or play activities," while 19.17% were below average. Moreover, 57.72% of the learners were above average on the item "Listen when spoken to directly," with 19.17% below average. Similarly, 56.34% of the learners were below average on the item of "Follow through on instructions," and 33.92% were below average. Furthermore, 54.38% of the learners were above average on the item of "Organize tasks and activities," while 28.62%

Demographic items	Frequency	%
Gender		
Girl	397	39.04
Boy	620	60.96
Total	1,017	100.00
Class of the learners		
Primary 1	456	44.84
Primary 2	271	26.65
Primary 3	178	17.5
Primary 4	112	11.01
Total	1,017	100
Age of learners		
5–7 years	270	26.55
8–9 years	354	34.81
10–13 years	393	38.64
Total	1,017	100
School type		
Inclusive	195	19.17
Normal	822	80.83
Total	1,017	100

Source: Researcher Ssirimuzaawo *et al.* (2022)

Table 3.
Demographic characteristics of the participants

Characteristic	N	Far below (%)	Below (%)	Slightly below (%)	Average (%)	Slightly above (%)	Above (%)	Far above (%)	Below average (%)	Above average (%)
Attention to detail and not careless	1,017	3.74	3.93	27.63	12.88	10.52	36.38	4.92	35.3	51.82
Sustain attention on tasks or play activities	1,017	0.98	3.54	14.65	23.11	13.57	40.81	3.34	19.17	57.72
Listen when spoken to directly	1,017	0.98	3.54	14.65	23.11	13.57	40.81	3.34	19.17	57.72
Follow through on instructions	1,017	5.60	4.82	23.50	9.73	20.65	32.15	3.54	33.92	56.34
Organize tasks and activities	1,017	1.97	5.31	21.34	17.01	19.57	32.35	2.46	28.62	54.38
Engage in tasks that require sustained mental effort	1,016	3.05	11.12	9.74	14.67	35.73	24.9	0.79	23.91	61.42
Keep track of things necessary for activities	1,016	0.10	13.78	10.63	18.41	18.31	33.96	4.82	24.51	57.09
Ignore extraneous stimuli	1000	1.90	4.40	9.90	29.10	23.00	31.10	0.60	16.2	54.7
Remember daily activities	1,001	0.70	0.80	8.19	18.58	36.26	30.87	4.60	9.69	71.73
Control movement of hands/feet	1,017	5.31	3.74	13.96	24.39	14.26	32.35	6.00	23.01	52.61
Stay seated	1,017	0.49	4.62	19.67	15.34	32.15	21.73	6.00	24.78	59.88
Modulate motor activity	1,017	2.46	8.75	14.45	7.08	42.48	22.03	2.75	25.66	67.26
Play quietly	1,017	3.64	13.18	16.72	16.52	28.61	13.77	7.57	33.54	49.95
Control constant activity	1,017	0.88	2.36	6.00	30.48	38.15	17.50	4.62	9.24	60.27
Modulate verbal activity (control excess talking)	1,017	0.49	4.52	8.75	18.39	45.62	19.76	2.46	13.76	67.84
Reflect on questions (control blurting out answers)	1,017	1.67	8.65	20.06	17.5	19.86	29.01	3.24	30.38	52.11
Await turn (stand in line and take turns)	1,017	8.75	4.23	5.11	17.6	26.45	35.1	2.75	18.09	64.3
Control interrupting/intruding)	1,017	7.47	13.96	15.04	28.81	14.45	17.9	2.36	36.47	34.71

Source: Researcher Ssirimuzaawo *et al.* (2022)

Table 4.
ADHD characteristics

were below average. Additionally, 61.42% of the learners were above average on the item of "Engage in tasks that require sustained mental effort," whereas 23.91% were below average. Moreover, 57.09% of the item of "Keep track of things necessary for activities" and 24.51% were below average. Additionally, 54.70% of the learners were above average on the item of "Ignore extraneous stimuli," with 16.20% below average. Furthermore, 71.73% of the learners were above average on the item of "Remember daily activities," and 9.69% were below average. Similarly, 52.61% of the learners were above average on the item of "Control movement of hands/feet," while 23.01% were below average. Moreover, 59.88% of the learners were above average on the item of "Stay seated," and 24.78% were below average. Additionally, 67.26% of the learners were above average on the item of "Modulate motor activity," whereas 25.66% were below average. Furthermore, 49.95% of the learners were above average on the item of "Play quietly," with 33.54% below average. Moreover, 60.27% of the learners were above average on the item of "control constant activity," while 9.24% were below average. Additionally, 67.84% of the learners were above average on the item of "Modulate verbal activity (control excess talking)," with 13.76% below average. Furthermore, 52.11% of the learners were above average on the item of "Reflect on questions (control blurting out answers)," whereas 30.38% were below average. Moreover, 64.30% of the learners were above average on the item of "Await turn (stand in line and take turns)," with 18.09% below average. Additionally, 34.71% of the learners were above average on the item of "Control interrupting/intruding)," with 36.47% below average. This clearly shows that control interrupting/intruding behavior is the strongest contributor to ADHD symptoms (i.e. 36.47%), and control constant activity is the least contributor to ADHD symptoms (i.e. 9.24%).

5.4 Prevalence of attention deficit hyperactive disorder symptoms

To understand the prevalence of ADHD symptoms, learners who scored less than 4 on a question signified ADHD symptoms. Pupils who scored less than 4 on 8 or more questions were classified as having ADHD symptoms, as shown in Table 5. The first nine items or questions indicate inattentive symptoms of ADHD, and learners with an average score above 0.745 from the nine questions were classified as having inattentive symptoms of ADHD. The last nine items or questions indicate hyperactive/impulsivity symptoms of ADHD, and learners with an average score above 0.745 from the nine questions were classified as having hyperactive/impulsivity symptoms of ADHD. Learners who had inattentive or hyperactive/impulsivity symptoms of ADHD or both were classified as having ADHD.

From Figure 3 above, it is clearly indicated that prevalence symptoms are more in normal schools than in inclusive schools. ADHD symptoms are more in primary one pupils than primary four pupils, meaning as the child grows, the severity of the symptoms reduces; that observation is consistent with researchers mentioned in the literature above. Findings in Table 5 show that the prevalence of ADHD among pupils in the Wakiso District is 11.60%. Pupils that had only inattentive ADHD symptoms were 8.82%, learners who had hyperactive/impulsivity symptoms only were 2.19% and learners that had both symptoms of ADHD were 0.59%. The prevalence of ADHD among boys (11.61%) compared to girls (11.59%) and the difference is not statistically significant ($p = 0.990$). ADHD is lower among primary four learners (7.14%) and higher among primary one pupils (14.25%) and the difference is statistically significant at 90% ($p = 0.091$). ADHD is lower among pupils aged 10–13 years (7.89%) and higher among learners below 10 years, and the difference is statistically significant ($p = 0.004$), which shows that the age of the pupil has an influence on

ADHD prevalence	Frequency	%	*p*-value
Overall (top line)	118	11.60	
ADHD category			
Inattentive	98	8.82	
Hyperactive/impulsivity	14	2.19	
Both	6	0.59	
Gender			
Girl	46	11.59	
Boy	72	11.61	0.990
Class of the learners			
Primary one	65	14.25	
Primary two	28	10.33	
Primary three	17	9.55	
Primary four	8	7.14	0.091
Age of learners			
5–7 years	44	16.3	
8–9 years	43	12.15	
10–13 years	31	7.89	0.004
School type			
Inclusive	13	6.67	
Normal	105	12.77	0.017

Source: Field Data (2022); Researcher Ssirimuzaawo *et al.* (2022)

Table 5
Prevalence of ADHD symptoms

the prevalence of ADHD symptoms. The prevalence of ADHD is significantly higher among normal schools and lower among inclusive schools ($p = 0.017$).

5.4.1 Qualitative findings on the prevalence of attention deficit hyperactive disorder symptoms. The researcher used a key informant, observation and focus group discussion for the teachers to provide a clear meaning of the quantitative findings above. The response rate for the qualitative findings is indicated in Table 6.

5.4.2 Findings from the key informant. The key informant was an individual who was knowledgeable and well-informed about ADHD symptoms in children. She was typically selected based on her expertise and experience in handling children with special needs and being accessible to the researcher.

The key informant was requested by the researcher to observe the children who had scored high on the symptoms of ADHD. After observation and interaction with some of the children, the researcher, through interviewing, was able to get their views regarding the prevalence of the symptoms of ADHD. In her own words, the key informant noted that:

> I have observed 42 pupils of primary one in [. . .]. Primary school, but I have noted that 3 pupils were very talkative, inattentive and they have been always interrupting their peers, they also failed to remain still for the 40 minutes I have been with them, such behaviors are typical to children who have been diagnosed with ADHD.

The above comments of the key informant were consistent with the findings from the quantitative study; she further had this comment when she visited other schools:

> This school is quite different, many of the children here have other mental disorders such as autism, cerebral palsy, but I have seen only one pupil with behavior similar to ADHD, and he is

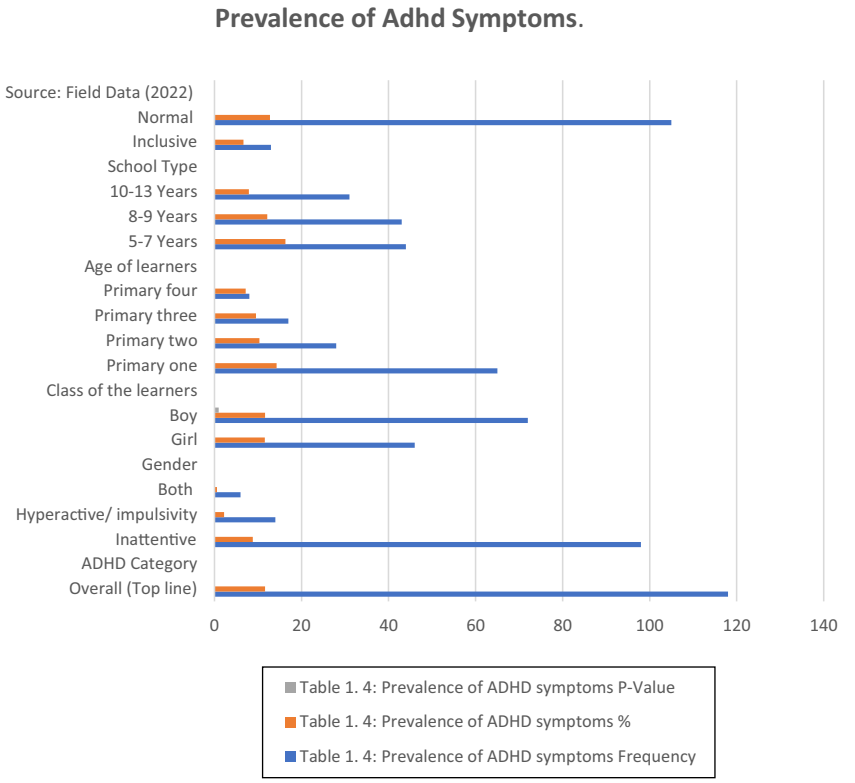


Figure 3.

Category	Targeted sample	Completed sample	Response rate (%)
Key informant	1	1	100
Teachers	32	27	84

Table 6. Response rate for the qualitative findings

Source: Researcher Ssirimuzaawo *et al.* (2022)

also displaying some characteristics of autism. Yes, he has many symptoms of ADHD, but he also displays behavior of other mental disorders.

That comment above was from the key informant when she visited one of the inclusive schools under study. Her observations were consistent with the quantitative findings which put the prevalence of ADHD symptoms significantly higher among normal schools and lower among inclusive schools ($p = 0.017$).

5.4.3 Findings from focus group discussion (teachers) on the prevalence of attention deficit hyperactive disorder symptoms. When teachers were asked to mention the abnormal behavior they observed with pupils in their class, many teachers consistently reported the following key characteristics observed among pupils during the teaching and learning process.

They tend not to pay attention during the teaching and learning process, they do not finish up the class activities, and they cannot stand or sit still; they find it hard to focus on a particular activity, and they often interrupt/intrude others during answering of question in class, blurting out wrong answers when not asked, and they are always in the constant move, making them fail to achieve academically in class, especially in reading, writing and numeracy.

One teacher further mentioned that some pupils with such behavior find it hard to make friends, especially because of their interrupting episodes.

However, one teacher pointed out that she has two pupils in class with all the symptoms above and yet they are fast learners and actually do their work fast, and then start to move around, disturb their peers, and that they also talk excessively.

5.5 Discussion of the findings

5.5.1 Response rate and demographic characteristics. The finding presented in Table 1 shows that the response rate for the quantitative study was high (95%), indicating that the majority of the participants completed the survey. This is a positive finding, as a high response rate indicates the data collected is reliable and valid. However, the response rate for the qualitative study was slightly lower (84%), which may suggest that some participants were less willing to engage in interviews or focus groups.

The demographic characteristics of the participants presented in Table 2 indicated that the majority of the participants were boys (60.96%) and from normal schools (80.83%). Additionally, primary one had the highest percentage of respondents (44.84%); overall, the response rate for the quantitative and qualitative study was high, indicating good data quality.

5.5.2 Discussion on the severity of attention deficit hyperactive disorder symptoms. The findings in Table 6 highlight the prevalence and severity of ADHD symptoms among learners based on teachers' perceptions. These perceptions provide insights into the learners' ability to sustain attention, organize tasks, control movements and regulate verbal and motor activities.

One interesting finding is that most of the pupils (71.73%) were above average in remembering daily activities, indicating that they had a good memory of the daily routines. However, a significant proportion of learners (57.72%) were above average in sustaining attention on tasks or play activities, indicating that they had no difficulty focusing on tasks for extended periods.

Another important finding is that a considerable proportion of learners (56.34%) were below average in following through on instructions, which was probably due to a lack of concentration. Additionally, a large proportion of learners (57.09%) were above average in keeping track of things necessary for activities, which suggests that a percentage of pupils were organized.

Notably, the most prevalent symptoms of ADHD were related to not being able to control interrupting or intruding behavior (36.47%), failure to give attention to detail (35%), not being able to play quietly (33%) and not being able to reflect when asked, all those characteristics which could suggest impulsivity, hyperactivity and intention which are key symptoms of ADHD. On the other hand, controlling constant activity (9.24%) was the least prevalent symptom, indicating that most learners were able to regulate their motor activity appropriately.

Overall, these findings highlight the significance of early identification and intervention for learners experiencing ADHD symptoms to mitigate their destructive effect on academic and social outcomes.

5.5.3 Discussion on the prevalence of attention deficit hyperactive disorder symptoms. The results indicate that ADHD is a prevalent condition among pupils in the Wakiso District, with an overall prevalence of 11.60%. This prevalence is consistent with findings from other studies conducted in different regions; for instance, APA (2013) puts global ADHD between 5% and 12% of school-going children. Inattentive symptoms of ADHD

were more prevalent than hyperactive/impulsivity symptoms. Interestingly, there was no significant gender difference in the prevalence of ADHD (this finding was inconsistent with what other studies reported having more boys with ADHD, specifically hyperactivity).

Learners in primary one had the highest prevalence of ADHD, while those in primary four had the lowest. This finding is consistent with the developmental course of ADHD, as the disorder is likely to be present more prominently in younger children and gradually decreases with age. The results also suggest that pupils aged 10–13 may be less inclined to have ADHD symptoms.

Furthermore, the prevalence of ADHD was significantly higher in normal schools than in inclusive schools. This finding may be since the study had very few inclusive schools. Generally, there are very few inclusive schools in the Wakiso District and in the entire country.

Generally, these findings suggest that ADHD is a significant concern in the Wakiso District, particularly among younger pupils. This points toward the need for early intervention since research done elsewhere shows that 9% to 80% of children with ADHD symptoms have learning difficulties in school (Ghahramani *et al.*, 2016; Biirah *et al.*, 2018).

Further research is needed to better understand the underlying causes and risk factors associated with ADHD in this population to develop targeted prevention and more tracked intervention strategies.

5.5.4 Discussion of the qualitative findings. From the qualitative findings, it is clear that there is a prevalence of ADHD symptoms among primary school children. The key informant's observations of children displaying symptoms such as inattention, impulsivity and hyperactivity were consistent with the quantitative data. The key informant also noted that children with other mental disorders, such as autism, may display similar symptoms to those with ADHD, thus emphasizing the importance of proper diagnosis and assessment.

Similarly, the focus group discussion with teachers highlighted common characteristics associated with ADHD, such as difficulty paying attention, restlessness and impulsivity. The teachers also noted the negative impact these symptoms had on children's academic achievement and social relationships.

Nevertheless, it is imperative to note that not all children with ADHD symptoms are underachievers. For example, one teacher pointed out that two students in her class with all the behaviors associated with ADHD were actually fast learners and completed their work quickly but still struggled with peer relationships and excessive talkativeness.

Generally, the qualitative findings support the quantitative data indicating that there is a prevalence of ADHD symptoms among primary school children. These symptoms can have negative impacts on academic and social functioning, emphasizing the need for early intervention, proper diagnosis, assessment and support.

6 Conclusions and recommendations

- The qualitative findings indicate a prevalence of ADHD symptoms among primary school children. The key informant's observations of children with symptoms such as inattention, impulsivity and hyperactivity were consistent with the quantitative data. The focus group discussion with teachers also highlighted common characteristics associated with ADHD and the negative impact they have on academic achievement and social relationships. However, not all children with ADHD symptoms are underachievers, as some can still be fast learners.
- ADHD is prevalent in the Wakiso District, with an overall prevalence of 11.60%; inattentive symptoms of ADHD are more prevalent than hyperactive/impulsivity symptoms; there was no significant difference in the prevalence of ADHD between boys and girls. Learners in primary one had the highest prevalence of ADHD, while

those in primary four had the lowest. Pupils aged 10–13 may be less susceptible to ADHD symptoms.

- Further research is needed for early intervention strategies to better understand the underlying causes and risk factors associated with ADHD in this population.
- The findings in this study holds paramount significance as it contributes to the limited body of research on ADHD prevalence in Ugandan schools and provides a foundation for further studies on ADHD in the African context. By expanding our understanding of ADHD in diverse educational settings, this research is instrumental in fostering improved educational outcomes and holistic support for children with ADHD in Africa and globally.

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Appendix

INFORMED CONSENT FORM FOR QUESTIONNAIRES OF TEACHERS (ENGLISH VERSION)

INFORMED CONSENT FORM FOR QUESTIONNAIRES OF TEACHERS IN SELECTED LOWER PRIMARY GOVERNMENT SCHOOL OF WAKISO DISTRICT UGANDA.

Title of the research study is: **PREVALENCE OF ATTENTION DEFICIT HYPERACTIVE DISORDER (ADHD) SYMPTOMS AND ACADEMIC ACHIEVEMENT IN SELECTED GOVERNMENT PRIMARY SCHOOLS IN WAKISO DISTRICT, UGANDA.**

Name of the Investigator: Ssirimuzaawo Josephine.
Name of the organization /Institution: Nkumba University

PART ONE INFORMATION SHEET

Introduction.

Dear participant I am called Josephine Ssirimuzaawo a PhD student of Nkumba University. I am kindly requesting you to take part in the above mentioned research study. This informed consent form is intended to explain to you about the study. After the explanations you are free to ask any question regarding the study. if you have decided to participate in this study, you will be requested to sign on this consent form and you will be given a copy of the signed form. please you do not have to decide today whether or not you will participate in this research study, before you decide you are free to ask me to give you more information about the study, I will take time to explain to you.

The major purpose of this study is: 1. To establish the prevalence of ADHD symptoms in primary schools in Wakiso district.
2.To examine the effect of ADHD on the academic achievement of children in selected Government primary schools of Wakiso district Uganda and the findings of this study will assist the researcher to come up with strategies and approaches (practical remedies) that can be used by both parents/guardians and teachers to address the challenges facing children with ADHD both at home and at school.

Procedures: of administering the questionnaire. and reasons for participant selection.

In this research study, teachers will be requested to take part in the filling of a questionnaire which has only eighteen (18) questions.
The teachers will be chosen to participate because they stay with and understand the children better so the information, they will provide will be very important to this study.
A total of 1067 learners, and 64 teachers will be requested to take part in this study.

Duration
Your will be required to attend trainings for three weeks once a week for (40 to 60 minutes) and only those that will qualify to fill this questionnaire after the training then they will take part in the study.

(*continued*)

This research will involve your participation in filling the questionnaire on behalf of your pupils which will take on average between 20 t0 30 minutes.

Please expect the following if you accept to take part in this study:
a) You will be given a questionnaire requiring responses regarding the behaviour of the learner at school in line with concentration level, task completion, and impulsive behaviour.
b) The pupil will be also be assessed in terms of; writing, numeracy, reading and literacy during the study.
c) You will be required to record how the pupil performs in the above areas.

Risks.
There are no known risks associated with you or the pupil you teach in participating in this study. The only discomfort will be the inconvenience in terms of time spent during the questionnaire filling, and the risk of COVID 19 spread., for COVID 19 the researcher is fully vaccinated but also the health guidelines for prevention of the spread of COVID 19 will be strictly implemented such as wearing masks, sanitizing and social distancing.

Benefits of Your participation in the study;

a) All participants in this study will get feedback on the findings and progress of the study.
b) Your opinion and experience will help the researcher understand the children better and add knowledge to this area of research and probably come up with approaches and strategies that might be used by the teachers and parents/guardians to help the children in primary schools acquire their true potential in academics and a fulfilling general life.
c) You will not be provided with any incentive to take part in the study, however if you decide to participate in this study you will be given 5000(five

thousand Ugandan shillings) as a compensation for the time spent filling the questionnaire.

Confidentiality:
All information that you will share with the researcher team and information about the learner will be treated with utmost confidentiality, soft copies of data will be protected by password, hardcopies files will be kept under lock and key and shall only be accessed by the principal investigator.
Your names or any personal information will not be mentioned at all in this study or to any one in this world.

Alternatives:
You are free to decide whether to participate in this study or not and you can withdraw from the study at any one time should you desire to do so.
Questions:
For any clarification/ question you can reach the principal investigator on mobile; 0785076762/0705169902 and/or email addres:siribily2@gmail.com.

PART TWO; STATEMENTS OF CONSENT

Statement of voluntariness

Participation in the research study is voluntary and you may join on your own free will. You also have a right to withdrawal from the study at any time without penalty. If you have issues

(*continued*)

pertaining to your rights and participation in the study please contact the chairperson, Gulu University Research Ethics Committee, Dr Gerald Obai, Tel No..0772305621; email:lekobai@yahoo.com; or Uganda National Council for Science and Technology, on plot 6 Kimera road Ntinda, Kampala on Telephone: 0414705500.

Statement of consent to be signed by the participant (teacher)

I …… confirm that the researcher has explained to me well about the study, I understand that my decision to take part in the study will not affect me or the pupil from my class in any way and I understand that my participation is voluntary. In the use of this information my identity or identity of the pupil will be concealed and that I or the pupil may withdraw at any time during the study. I understand that by signing this form I don't waive any of my or the pupil's legal rights but merely indicate that I have been informed about the research study in which I am voluntarily agreeing to participate. A copy of this form will be provided to me. I therefore consent to take part in the study.

Name ……Signature/thumbprint of the participants (teacher) ..... …… Date.....

Name ……Signature/thumbprint of the witness ……. ……. Date.....

Name ……Signature/thumbprint of the interviewer ……. ……. Date.....

End.

INFORMED CONSENT FORM FOR QUESTIONNAIRES OF PARENTS/GUARDIANS (ENGLISH VERSION)

INFORMED CONSENT FORM FOR QUESTIONNAIRES OF PARENTS/GUARDIANS (ON BEHALF OF THE CHILDREN AGED 5 T0 13YEARS).

Title of the research study is;
PREVALENCE OF ATTENTION DEFICIT HYPERACTIVE DISORDER (ADHD) SYMPTOMS AND ACADEMIC ACHIEVEMENT IN SELECTED GOVERNMENT PRIMARY SCHOOLS IN WAKISO DISTRICT, UGANDA.

Name of the Investigator: Ssirimuzaawo Josephine.
Name of the organisation/ Institution: Nkumba University

PART ONE INFORMATION SHEET

(*continued*)

Introduction.

Dear participant I am called Josephine Ssirimuzaawo a PhD student of Nkumba University. I am kindly requesting you to take part in the above mentioned research study. This informed consent form is intended to explain to you about the study. After the explanations you are free to ask any question regarding the study. if you have decided to participate in this study, on behalf of your child, you will be requested to sign on this consent form and you will be given a copy of the signed form. Please you do not have to decide today whether you will participate in this research study, before you decide you are free to ask me to give you more information about the study, I will take time to explain to you.

The major purpose of this study is: 1. To establish the prevalence of ADHD symptoms in primary schools in Wakiso district.
2.To examine the effect of ADHD on the academic achievement of children in selected Government primary schools of Wakiso district Uganda and the findings of this study will assist the researcher to come up with strategies and approaches (practical remedies) that can be used by both parents/guardians and teachers to address the challenges facing children with ADHD both at home and at school.

Procedures: of administering the questionnaire. and reasons for participant selection.

In this study, parents / guardians and learners will be requested to take part.
The parents/guardians will participate because they need to consent to their children take part in this study ,and they may also be asked some information they will provide will be very important to this study.
A total of 1067 learners, and 64teachers will take part in this study, the teachers will fill the this questionnaire on behalf of the learners.

Duration

This research will involve your child in filling the questionnaire which will take on average between 20 t0 30 minutes. The question will be filled by the teacher,
Your child will also be observed by the researcher and another specialist to see how they behave at school especially during class and play time with peers.

Please expect the following if you accept to take part in this study:

d) You may be asked questions requiring responses regarding the behaviour of the learner at home in line with concentration level, task completion, and impulsive behaviour.
e) The learner will be observed by the research team at school i.e. during class time and play time.
f) During the course of the study, the learner will be assessed in terms of; writing, numeracy, reading and literacy during the course of the study.
g) You will may also be requested to take part in the interview that will last for less than an hour at a later date during this study.

Risks.

There are no known risks associated with you or your child participating in this study. The only discomfort will be the inconvenience in terms of time spent during the filling of the questionnaire.

Covid-19 Spread Risk.

You are assured that there will be no risk of COVID 19 because the researcher is fully vaccinated, and she will ensure that she strictly implement the guidelines of prevention of spread of COVID 19 such as social distancing, masks wearing all the time, and hand sanitizing, on top of that every participant will be given free disposable mask to wear during the filling of a questionnaire.

(*continued*)

Benefits of Your participation in the study;
a) All participants in this study will get feedback on the findings and progress of the study.
b) Your opinion and experience will help the researcher understand the children better and add knowledge to this area of research and probably come up with approaches and strategies that might be used by the teachers, to help the children in primary schools acquire their true potential in academics and a fulfilling general life.
c) You and your child will not be provided with any incentive to take part in the study, however Every parent/guardian and their child, that will participate in the study will be given 5000 Ugandan shillings and 3000 Ugandan shillings respectively as a compensation for the time spent filling the questionnaire.

Confidentiality:
All information that you will share with the researcher team and information about your child will be treated with utmost confidentiality, soft copies of data will be protected by password, hardcopies files will be kept under lock and key and shall only be accessed by the principal investigator.
Your names and those of your child or any personal information will not be mentioned at all in this study or to any one in this world.

Alternatives:
You are free to excuse your child, or yourself to participate in this study and you can withdraw from the study at any one time should you desire to do so.

Questions:
For any clarification/ question you can reach the principal investigator on mobile; 0785076762/0705169902 and/or email addres:siribily2@gmail.com.

PART TWO; STATEMENTS OF CONSENT

Statement of voluntariness
Participation in the research study is voluntary and you may join on your own free will. You also have a right to withdrawal from the study at any time without penalty. If you have issues pertaining to your rights and participation in the study please contact the chairperson, Gulu University Research Ethics Committee, Dr Gerald Obai, Tel No..0772305621; email:lekobai@yahoo.com; or Uganda National Council for Science and Technology, on plot 6 Kimera road Ntinda, Kampala on Telephone: 0414705500.

Statement of consent to be signed by the participant (parent/ guardian)
I …… confirm that the researcher has explained to me well about the study, I understand that my decision to take part in the study will not affect me or my child in any way and I understand that my participation is voluntary. In the use of this information my identity or identity of my child will be concealed and that I or my child may withdraw at any time during the study. I understand that by signing this form I don't waive any of my or my child's legal rights but merely indicate that I have been informed about the research study in which I am or my child are voluntarily agreeing to participate. A copy of this form will be provided to me. I therefore consent to take part in the study.

Name of the child ……Date…….. …

Name ……Signature/thumbprint of the parent/ guardian ……. ……. Date.....

Name ……Signature/thumbprint of the witness ……. ……. Date.....

Name ……Signature of the interviewer …… ……. Date.....

End.