



## ARTICLE CATEGORY: Original Article

**Factors Influencing the Utilization of Occupational Therapy Services among Adolescents with Substance Use Disorder in Western Uganda****Benjamin Betunga\*, Gladys Nakidde**

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**Abstract****Background**

Substance use remains high among adolescents in Uganda. The use of occupational therapy services has been found to restore cognitive function among individuals with substance use disorder, with limited data in Uganda.

**Objective:**

This study assessed the uptake of occupational therapy services and factors associated with the utilization of occupational therapy among adolescents with substance use disorder.

**Methods:**

A cross-sectional study was conducted using consecutive sampling to select 106 adolescents. Data were analyzed using SPSS, reporting descriptive statistics and influencing factors utilizing linear regression.

**Results:**

Overall awareness and utilization of occupational therapy services were 54.7% and 67%, respectively. However, the variables of age (aPR=0.48, 95% CI=0.32-1.70), religion (aPR=0.54, 95% CI=0.63-2.52), education (aPR=0.31, 95% CI=0.74-2.63), and occupation (aPR=0.86, 95% CI=0.43-2.78) did not show a statistically significant association with the utilization of these services at the multivariate level.

**Conclusion:**

The overall awareness and uptake of occupational services among adolescents remain suboptimal. For occupational therapy to effectively address substance use disorder in adolescents, it's crucial to define and deliver innovative services tailored to their needs proactively. Further research should focus on conducting qualitative studies to explore the barriers and facilitators that adolescents encounter in accessing occupational therapy services.

**Keywords:** Adolescents, Occupational therapy, Substance use, Uganda.**Corresponding Author:** Benjamin Betunga**Email:** [benjaminbetunga24@gmail.com](mailto:benjaminbetunga24@gmail.com)**Submitted:** 15<sup>th</sup> May 2024 **Accepted:** 19<sup>th</sup> March 2026 **Published:** 29<sup>th</sup> May 2026**Open Access Statement:** This is an open-access article distributed under the Creative Commons Attribution License.**Introduction**

Substance use remains high among adolescents. ([Read, 2018](#)). Globally, the prevalence of mental health disorders in children and adolescents due to substance use ranges from 6.7% to 13.4% ([Flisher, Parry, Evans, Muller, & Lombard, 2003](#); [Hale & Viner, 2013](#)) and 41.6% in sub-Saharan Africa by 2016, with the highest rate in central Africa at 55.5%. In Uganda, the prevalence of substance use among youth stands at 26%, of which Mbarara City accounts for 5.2% ([Bonar, Ashrafioun, & Ilgen, 2014](#)). More studies have looked at

adults with substance use disorder, leaving behind the most at-risk group, which is adolescents.

Continuous use of drug substances causes cognitive impairments among adolescents, such as limiting their individual performance in daily activities. ([Cox, 2012](#)). Furthermore, it has been demonstrated that individuals with substance use disorders have a restricted sense of themselves as active agents. ([Davidson & Strauss](#)) and are less autonomous in leisure activities and socialization compared to a non-disabled sample, which reduces productivity ([Robinson & Deane, 2022](#)).

Occupational therapy services are an important part of substance use rehabilitation programs as they enable clients to restore cognitive function and foster engagement in meaningful occupations and activities ([Evans, Padwa, Li, Lin, & Hser, 2015](#)). A historical review of the profession identified its strong foundations in the treatment of mental illness, originating in substance use disorder ([Agbese et al., 2022](#)). Factors such as sociodemographic characteristics, knowledge, and awareness have been reported to predict the use of occupational therapy services ([Rommel, Hintzpeter, & Urbanski, 2018](#)). A study done in a US psychiatric department identified physical factors like refusal of patients to participate in these activities and social-cultural factors to be associated with poor utilization of occupational therapy among people with mental disorders ([Islam, Khanam, & Kabir, 2020](#)).

Mbarara regional referral provides a range of occupational therapy interventions that enable individuals and groups of people to participate in their occupations of self-care, such as brushing teeth or eating, productivity, such as going to work or school, craft making, tailoring, and leisure/play, such as swimming or soccer ([Edward et al. 2016](#)). Despite the availability of the services, low attendance is still recorded, and no study has been carried out in the mental health units of Mbarara Regional Referral Hospital to identify the factors influencing the utilization of these occupational therapy services among adolescents with substance use disorders.

Therefore, we determined the factors associated with the utilisation of occupational therapy services among adolescents with substance use disorder. The findings of this study will inform tailor-made interventions aimed at increasing access to and utilization of occupational therapy among adolescents with substance use in Uganda and other similar sub-Saharan African settings.

## Methods

### Study Design and Setting

This was a quantitative cross-sectional study. The study was conducted at the Mental Health Unit of Mbarara Regional Referral Hospital, situated in Mbarara city in the southwestern region. This hospital, government-owned and serving as a referral and teaching facility, is affiliated with the Medical School of Mbarara University of Science and Technology. It offers occupational therapy services to around 150 adolescents who are diagnosed with substance use disorder within a period of two months ([Rukundo Z, 2013](#)).

### Study population, size, and sampling

The study was conducted among adolescents (both male and female) aged 10 to 19, as well as caregivers of adolescents who could not provide the necessary information themselves. The Yamane formula (1975)

was used to calculate the sample size. The hospital receives an average of 400 people who are diagnosed with mental health illnesses, and approximately 150 clients are adolescents with substance use disorder who are recorded in a period of two months. Out of the 109 participants sampled and approached, 106 provided informed consent and participated in the study, resulting in a response rate of 97.2%. Only three participants declined to provide informed consent and participate in the study due to their unstable mental status. We employed consecutive sampling because of the limited number of adolescents in the rehabilitation program.

### Data collection procedure

A semi-structured questionnaire was used to collect data. The questionnaire was developed from the literature. The tool contained items on occupational therapy services, demographic characteristics, awareness of occupational therapy services, and utilization of occupational therapy services. Patients were identified from mental health unit records; the selected ones were taken to a secluded, quiet room to guarantee privacy and confidentiality. A researcher then obtained the patient's consent and conducted the interview. After the interview, the researcher thanked the participants for their involvement in the study.

### Data Management and Analysis

The data collected was carefully checked for completeness before safety storage. The data collected from the respondents was securely stored in a confidential manner, accessible only to the researcher and their assistants.

Data was entered into MS Excel and then transferred to the Statistical Program Statistical Package for Social Sciences Version 20 (SPSS) for analysis. Descriptive statistics were computed and presented as tables and frequencies. The sum score of each outcome was assessed based on Bloom's cut-off point ([David McKay, 1956](#)) and from the literature. Having a score above the cut-off point was equated with having high levels of awareness and better utilization of occupational therapy services ([Wesam Barakat Darawsheh et al., 2017](#)). Participants' overall awareness was categorized using Bloom's cut-off point ([Wesam Barakat et al., 2017](#)), as high if the score is between 75% and 100% (4 points), moderate if the score was between 60% and 74% (2-3 points), and poor if the score was less than 50% (<1 point). (No awareness, 0 points; little awareness, 1 point; moderate awareness, 2 points; high awareness, 3-4 points [Darawsheh, W. B. \(2018\)](#)).

Subsequently, the utilisation level was classified into good utilisation (>50%) and poor utilisation (less than 50%). In bivariate analysis, using descriptive statistics and binary regression at multivariate, significant variables of p-value <0.05 and CI 95% were considered.

### Ethical Considerations

Ethical approval was secured from Bishop Stuart University's research ethics committee, and administrative clearance was obtained from Mbarara Regional Referral Hospital.

Adolescents were presented with assent forms, empowering them to choose freely whether to participate in the study. They were also assured the right to ask questions, refuse to disclose information, seek clarification, or withdraw from the study at any juncture. Consent was obtained from caretakers of adolescents under 18 years who were not emancipated minors.

To guarantee privacy and confidentiality, selected participants were interviewed individually in a secluded, quiet room. Their names were omitted from all study documentation to maintain participant anonymity.

### Results

The majority, 87(82.1) % of participants were male and adolescents aged below 18 years, with a median age of 14 years (60%) and an interquartile range of 2 years. Most participants (63.2%) had resided in the city for more than 5 years, with a median of 6 years. The majority (77.4%) identified as Christians, with 82 (77.4%) being single and holding primary (80.0%) or ordinary-level certificates (24.5%). In terms of occupation, the majority (81.1%) were engaged in subsistence farming, followed by commercial farming (9.4%) and other occupations (9.4%). Regarding income, most (78.3%) earned a monthly income ranging from 100,000 to 200,000/=, and finally, a majority (58.5%) of participants resided or stayed within 1-5

**Table 1: Demographic characteristics of participants (N=106)**

Variable	Category	N (%)
Age	9-12	29(27.4)
	13-15	60(56.6)
	16-18	17(16.0)
Gender	Male	87(82.1)
	Female	19(17.9)
Marital status	Not married	82(77.4)
	Married	24(22.6)
Religion	Catholic	32(30.2)
	Anglican	41(38.7)
	Pentecost	31(29.2)
	Moslem	2(1.9)
Occupation	Subsistence farming	86(81.1)
	Commercial farming	10(9.4)
	Any other	10(9.4)
Salary (UGX)	0-100000	83(78.3)
	100000-200000	7(6.6)
	above 200000	16(15.1)
Education	None	51(48.1)
	Primary	29(27.4)
	Ordinary	14(13.2)
	Advanced level	7(6.6)
	Tertiary	5(4.7)

### Awareness of Occupational Therapy Services

Recognizing that prior to the awareness of occupational therapy is crucial for its utilization, we asked participants to define it and identify the services they were aware of, along with the sources of this knowledge. The majority, 58 (54.7%) of the participants, were familiar with the definition of occupational therapy services, and a significant portion (88%) knew more than one service. Notably, the dressing was recognized

by 55 (51.9%) participants, followed by self-care/hygiene with 42 (39.6%), tailoring with 41 (38.7%), the development of morning/evening routines with 36 (34.0%), craft-making with 28 (26.4%), and other services with 21 (19.8%). Furthermore, the majority of 102(96.2%) had gained awareness of occupational therapy services from healthcare workers (Table 2).

**Table 2. Awareness of occupational therapy services.**

Variable	N%
<b>Occupational therapy services definition</b>	
Yes	58(54.7)
No	48(45.3)
<b>Services</b>	
Self-care/Hygiene	42(39.6)
Dressing	55(51.9)
Development of morning/evening routines	36(34.0)
Tailoring	41(38.7)
Craft making	28(26.4)
Any other	21(19.8)
<b>Source of information</b>	
Health worker	102(96.2)
Media/TV	3(2.8)
Any other	1(1.0)

**Utilization of Occupational Therapy Services**

The findings indicate that most participants in this study, 71 (67.0%), had utilized one or more occupational therapy services within one year. The most commonly used service was dressing, with 55 participants (51.9%) reporting its use, followed by self-care/hygiene with 42 participants (39.6%), tailoring with 41 participants

(38.7%), development of morning/evening routines with 36 participants (34.0%), craft making with 28 participants (26.4%), and any other service with 21 participants (19.8%), Majority, 105 (99.1%), did not incur any expenses for occupational therapy services when they utilized them (Table 3).

**Table 3. Utilization of each occupational therapy service**

Variable	N%
<b>Have you ever used occupational therapy services?</b>	
YES	71(67)
NO	25(33)
Self-care/hygiene	33(30.0)
Tailoring	23(24.0)
Dressing	41(37.0)
Craft making	19(17.9)
Development of morning/evening routines	21(19.8)
Any other	18(17.0)
<b>Source of information</b>	
Mbarara Regional Referral Hospital	106(100)
<b>Pay for services</b>	
Yes	1(0.9)
No	105(99.1)

**Factors associated with the Awareness of Occupational therapy services**

In the bivariate analysis, the results reveal that Occupation ( $p < 0.001$ ), marital status ( $p < 0.001$ ), age of the participants ( $p < 0.001$ ), level of income ( $p < 0.001$ ), education ( $p < 0.001$ ), and gender ( $p = 0.000$ ) are statistically significantly associated with awareness of occupational therapy services, unlike religion ( $p = 0.924$ ).

**Table 4: Shows the association of Demographics with Awareness of Occupational therapy services.**

Variable	Poor awareness (<49) (n=count, % of total)	Good awareness (>50) n (%)	Asymp. sig. (2-sided)	Unadjusted prevalence ratios (PR)
<b>Occupation</b>	48(45.3)	58(54.7)	0.060	1.00 0.998(0.056-0.000)
Subsistence farming	48(45.3)	38(35.8)		
Commercial farming	0(0.0)	10(9.4)		
Any other	0(0.0)	10(9.4)		
<b>Age</b>	48(45.3)	58(54.7)	0.000	1.00 0.582(0.514-3.275)
12-17	38(35.8)	22(20.8)		
18-24	10(9.4)	11(10.4)		
>24	0(0.0)	25(23.6)		
<b>Religion</b>	48(45.3)	58(54.7)	0.924	1.00 0.910(0.078-0.000)
Christians	47(44.4)	57(53.8)		
Others	1(0.9)	1(0.9)		
<b>Education</b>	48(45.3)	58(54.7)	0.000	1.00 0.003(0.113-0.641)
Primary and <	48(45.3)	32(30.2)		
Secondary and >	0(0.0)	26(24.5)		

**Factors associated with the utilization of Occupational Therapy Services.**

The factors age (p-value 0.00), education (p-value 0.02), and religion (p-value 0.03) were not statistically significant at the multivariate level (Table 5).

**Table 5. Association of demographics and use of Occupational Therapy Services.**

Variable	1 and +(Yes) (n=count, % of total)	No service (No) (%)	Asymp. sig. (2-sided)	adjusted prevalence ratios (aPR) aPR (95% CI)
<b>Gender</b>	71(67.0)	35(33.0)	.493	1.00 0.769(0.563-2.664)
Male	57(53.8)	30(28.3)		
Female	14(13.2)	5(4.7)		
<b>Occupation</b>	71(67.0)	35(33.0)	.624	1.00 0.862(0.425-2.779)
Subsistence	56(52.8)	30(28.3)		
Commercial	8(7.5)	2(1.9)		
Any other	7(6.6)	3(2.8)		
<b>Age</b>	71(67.0)	35(33.0)	0.000*	1.00 0.485(0.325-1.704)
12-17	39(36.8)	21(19.8)		
18-24	15(14.2)	6(5.7)		
>24	17(16.0)	8(7.5)		
<b>Religion</b>	35(33.0)	71(66.6)	.003*	1.00 0.547(0.637-2.528)
Christians	34(32.1)	70(65.7)		
Others	1(0.9)	1(0.9)		
<b>Education</b>	71(66.9)	35(33.1)	.002*	1.00 0.311(0.735-2.628)
Primary and <	53(50.0)	27(22.5)		
Secondary and >	18(16.9)	8(7.6)		

All the factors that were statistically significant at bivariate analysis were not significant at multivariate analysis.

### Discussion

This study investigated factors that influence the utilization of occupational therapy services among adolescents with substance use disorder attending Mbarara Regional Referral Hospital in southwestern Uganda. While previous studies have looked at the use of occupational therapy in adults, this study addressed factors influencing the use of occupational therapy services among adolescents with substance use disorder.

The findings of this survey suggest that awareness about occupational therapy services among the majority of adolescents was above average (54.7%). The overall use of occupational therapy services was 67%, and the most utilized services by adolescents were rehabilitation, dressing (37%), hand hygiene/self-care (30%), and tailoring (24%).

The findings of this study suggest that awareness and utilization of occupational therapy services among the majority of adolescents were above average (54.7%,67%), which is high compared to studies conducted in Jordan, Australia, and Hong Kong, which ranged from 35-45.4%([Carlsson, 2018](#); M. Sidenvall,

2017; A. Söderback, I, Ternstedt, 2012). The higher awareness of occupational therapy services in this study can be attributed to two main factors. First, most adolescents received services from Mbarara Regional Referral Hospital, where they were well-informed about occupational therapy. Second, the availability of various occupational therapies contributed to their awareness, as they were introduced to these services during rehabilitation. This contrasts with the reasons for poor awareness and utilization in other countries, where limited access to occupational therapy services, a lack of adequately trained physicians, and community perceptions contribute to lower awareness among adolescents. ([Anaby et al., 2017](#)). Based on the findings from this study, it is evident that increasing awareness and utilization of occupational therapy services among adolescents with substance abuse disorders can be achieved through targeted strategies. First, establishing more comprehensive OT programs within regional hospitals, similar to those at Mbarara Regional Referral Hospital, can ensure that adolescents receive the necessary information and support. Additionally, improving the availability and variety of OT services during rehabilitation can significantly enhance awareness and engagement. Furthermore, addressing community perceptions through public awareness campaigns can help demystify occupational therapy and highlight its benefits, thereby encouraging greater

utilization among adolescents struggling with substance abuse disorders.

Other studies have indicated that unsustainable public and private healthcare spending growth, an increased prevalence of chronic health conditions, and rising demand for healthcare services because of the ageing of the population and the expected growth in the number of people with health insurance, interfere with occupational therapy services among adolescents with substance use disorder due to competition for the scarce services. (Roberts, Farmer, Lamb, Muir, & Siebert, 2014). Although the overall awareness and utilisation of occupational therapy services among adolescents with substance use disorder in this study is above average, gaps still exist that require increasing accessibility of occupational therapy services among adolescents with substance use disorder and addressing community perceptions about people who use occupational therapy services. (Roberts et al., 2014). So, more training of occupational therapists is highly needed, and more education programs about occupational therapy services should be implemented to increase awareness. It is essential to increase accessibility to these services, addressing the competition for scarce resources caused by unsustainable healthcare spending, the rising prevalence of chronic health conditions, and the ageing population. Additionally, efforts should be made to address community perceptions about individuals who use occupational therapy services.

Additionally, this study found that the majority of participants, 96.2% (102/106), received information about occupational therapy from health workers, while a small percentage, 2.8% (3/106), obtained information from TV or other media. This is likely because TV requires a subscription, and most participants practised subsistence farming, earning less than \$27.70 USD per month. As a result, they could not afford the subscription fees and were unable to access information through the media. The government should increase public sensitization to raise awareness of occupational therapy and boost the utilization of these services, especially since many people cannot afford to watch TV or listen to other media sources.

In this study on the utilization of occupational therapy services, it was found that the uptake of occupational therapy was 67%. The most utilized services by adolescents in rehabilitation were dressing (37%), hand hygiene/self-care (30%), and tailoring (24%). This utilization rate is higher compared to a study conducted in Germany. (Rommel et al., 2018). Utilization of individual services aligns with existing literature. The most utilized occupational therapies include self-care/hygiene at 41%, dressing at 34%, development of morning/evening routines at 27%, and shopping, tailoring, and use of assistive devices at 13%. (Rommel et al., 2018). On the same note, our results align closely with those of a study conducted in the USA among children with Bell's palsy, where dressing and self-care

emerged as the most utilized occupational therapy services by retired soldiers. (Shah, Hawks, Walker, & Egede, 2024). These services are key to the effective restoration of individuals with cognitive impairment as a result of substance use disorder. In reducing substance use in adolescents, Welty et al. (2019) recommend school-based interventions such as yoga, animal-assisted therapy, skills-building, 12-step programs, self-driven virtual interventions, motivational interviewing, and multidimensional family therapy have also been found effective in restoring cognitive impairment. (Shah et al., 2024). A smaller percentage (1.0%) had utilized alternative occupational services such as swimming, which were not offered by the hospitals. Others mentioned activities like bricklaying, which were not available at the rehabilitation center. Therefore, it's crucial to emphasize activities that can be done at home to keep adolescents with substance use disorder engaged and to expedite the restoration of cognitive function. Additionally, this approach eliminates the need for patients to travel to the hospital for these services since they can access them from their homes. Consequently, this would enhance service delivery and increase the utilization of occupational therapy services. The findings of this study suggest a link between awareness of occupational therapy services and factors such as age, education, and religion. Participants who had completed secondary education or higher demonstrated a greater awareness of occupational therapy services compared to those with only primary education or no formal education. Interestingly, participants' occupation, gender, and marital status showed no significant influence on awareness of occupational therapy services. This aligns with a study conducted in the Eastern Cape, which investigated factors impacting the utilization of occupational therapy services among individuals with mental illness. That study revealed a higher awareness and utilization of occupational therapy services among educated patients compared to those with lower levels of education. (Doğu & Özkan, 2023). Education increases awareness of occupational therapy and the benefits it offers. This could explain why there was a high uptake of services among educated patients. Therefore, more community sensitization efforts should be undertaken to increase awareness among adolescents with substance use disorder and enhance the uptake of occupational therapy services.

Moreover, the age group of 12-17 showed a strong correlation with awareness of occupational therapy services. This is primarily attributed to the fact that during this developmental stage, many adolescents misuse drugs, leading to mental health issues and subsequent enrollment in rehabilitation programs that offer occupational therapy services. Consequently, they become acquainted with these services. Additionally, their receptiveness to guidance from caregivers during review and attendance of occupational therapy sessions

further enhances their awareness. This assertion finds support in the 2014 report by the National Institute on Drug Abuse (NIDA) (Doğu & Özkan, 2023), which highlights the prevalence of substance use among adolescents and the rising utilization of occupational therapy services among both adolescents and Alzheimer's patients.

Association of Demographics with Utilization of Occupational Therapy Services.

Unlike previous studies that found an association of demographics with the use of occupational therapy services. In this study, we found out there was no association between Age, Occupation, Education, and Level of income, length of stay, and use of occupational therapy services. We realised most of the participants were not working and thus had no source of income; this could explain why occupation was not associated with the use of occupational therapy services. Furthermore, the majority were not educated and thus had no good ideas about the use of occupational therapy services. Education increases knowledge of the benefits of those services, which most have not attained.

### Strength and Limitations

This study illuminates the utilization of occupational therapy services among adolescents with substance use disorder at a regional referral hospital, a topic not thoroughly explored in previous research. Consequently, the study's findings can inform the enhancement of occupational therapy utilization among adolescents with substance use disorder in lower district health facilities with mental health units.

However, the obtained sample size was smaller than initially calculated. This reduction occurred because many patients were discharged from the unit, while others were scheduled for review after three months. Additionally, some caregivers failed to provide the accurate information required regarding their children. Future research should consider conducting the study in more than two facilities to obtain a more precise sample size.

### Conclusion.

The overall awareness and utilization of occupational services among adolescents still remain inadequate. To effectively address substance use disorder in adolescents through occupational therapy, we must proactively define and deliver innovative services tailored to their needs. Further research should prioritize qualitative studies to explore the barriers and facilitators adolescents encounter in accessing occupational therapy services.

Communities need to actively engage in healthcare reform and advocate assertively for occupational therapy services in their midst, as there exists widespread misperception among those who could benefit from such services. Lastly, health professionals

must collaborate with other experts and engage with consumers and their families to promote enduring mental health practices and policies, leveraging a broad base of support.

Future research endeavours should prioritize qualitative studies to delve into the barriers and facilitators adolescents face regarding the utilization of occupational therapy services.

### Declarations

#### Consent for publication

Not applicable

#### Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

#### Competing interests

The authors declare that they have no competing interests.

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#### Authors' contributions

**Conceptualization:** Benjamin Betunga, Gladys Nakidde

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