Building Resilience into the Care of Autistic Children in Lagos State: A Social Worker's Perspective

Olaitan Oluwayemisi Abiodun^{1*}, Femi Rufus Tinuola² ¹Texila American University, Guyana ²Department of Sociology, Federal University, Gusau Nigeria

Abstract

There are centres in Lagos State, Nigeria specifically devoted to the care of children with autism. Such centres have developed various practices, methods, and interventions that over the years have become a standard. To curb the spread of Covid-19 in the year 2020, Lagos State Government imposed a lockdown and various social restrictions. One of the attendant consequences of the lockdown was that these centres, where autistic children were being cared for, had to be closed, made to offer skeletal services, or change the delivery of care to an online version. This research is a qualitative research that aims to show that the model of care offered pre-Covid was not resilient to withstand the sudden change brought by the pandemic and to proffer modification to the present model of care. The study was done through in-depth interviews of expert and snowballed sampled professionals involved in the care of autistic children. The study found that it was impossible to continue some interventions during the lockdown; while it was possible to continue some interventions online, it was difficult to deliver; for other interventions, the delivery was inadequate. This led to deterioration in the clinical, psychological, or social status of these autistic children. The researcher concludes that there is a need to redesign the model of care for autistic children in Lagos to make it resilient to all forms of future disruptions. It was recommended that home-based care and software applications and animations fit for local needs be developed for assessment and interventions.

Keywords: Autistic care, Intervention, Resilience, Social Work.

Introduction

Autism spectrum disorder (ASD/autistic) is a neurodevelopmental disorder of unknown origin which is characterized by the behavioral phenotype of impairment of development in language and communication skills and social interaction and reciprocity [1]. The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) views autism spectrum disorder as the occurrence of persistent impairments in social interaction and the presence of restricted, repetitive patterns of behaviour, interests, or activities. [2] estimated the global prevalence of autism to be 1 in 100 children. In Nigeria, the prevalence of autism is put at 1 in every 125 to 150 children, making a total of about 600,000 children [3]. There are more male children than female children presenting with the disorder [4].

Occasioned by this disorder, children with ASD are either slow in learning social skills or unable to learn some social skills, making them vulnerable in the social environment especially when there is a crisis situation that requires mustering beyond ordinary skills to cope successfully. The attendant consequence is for their special needs to be unrecognized or out rightly neglected.

Therapeutic and correctional interventions are attempts to recognize and cater for the needs of such vulnerable members of society. Most of these interventions originated in developed countries but the Nigerian society has borrowed some of the best practices in the care of children with ASD from the developed countries [5, 6].

Different researchers have argued about the need to indigenize some of these best practices as a way of increasing their effectiveness for people living with autism in Nigeria [5, 6]. Though, the care of children with ASD in Nigeria is still in its infancy as the scope of the care rendered in Nigeria is still limited and not yet generally accepted by the larger majority of her citizens. Even at that, some of the interventions rendered by both the governmental and non-governmental agencies at the moment, to say the least, have been effective to some certain degree.

The gains that have been achieved in the various interventions for children living with autism in Nigeria suffered a major disruption with the Covid-19 pandemic. Several reasons can be adduced for this. Firstly, to combat the Covid-19 pandemic and to ameliorate the socio-economic issues resulting from it, focus and funds were diverted globally to the pandemic; several medical conditions, autism spectrum disorder, for example, were temporarily neglected. Another adverse effect of the pandemic was the social restrictions put in place by the government to curb the spread of the virus.

This led to inaccessibility to care centres for the autistic children and their parents; nonavailability of professionals to continue working with these children; increased cost of living and medication, and difficulty in purchasing the necessary medications. Also, the pandemic brought about rapid changes to generally accepted business and organizational models and practices.

Many organizations adopted the non-physical means of transacting businesses. Online services became a widely accepted model all around the world. The care of autistic children, like other businesses, was also affected. Some centres were shut down; some services were suspended; even for the centres operating, the capacity was reduced in line with the policy of social distancing. To ensure some measure of continuity of care for the autistic children, several centres have to adopt virtual delivery of care either as the sole method of delivery of care or blended with limited onsite delivery of care. Overall, no centre was spared of the disruption occasioned by the Covid-19 pandemic.

Coping with such monumental disruption in care calls for the ability to adapt fast enough to the evolving changes in virtually all aspects of life. For one, the fragile Nigerian health system had never witnessed such surging cases of an infectious disease; it is only natural to see it wobble under a pandemic. This fragility became evident in the care of autism as the conventional interventions used in the care of these children could not be continued under the uncertain conditions brought by the pandemic. The resultant effect is that autistic children, with pathognomonic features of inability to adapt to changes, had difficulties adapting to the rapid changes in our lifestyle caused by the Covid-19 pandemic. The attendant consequence is the deterioration of the clinical and psychosocial status of these children.

From all the above-mentioned experiences, it is obvious that the care framework being used in Lagos State autism centres is not resilient enough to adapt to the exigencies brought about by the pandemic and its restriction as the care rendered for autistic children was gravely affected during the lockdown. The study aims to investigate the weakness in the current model of care for autistic children with the main objective of suggesting practical ways in making the model of care resilient to survive future crises. The research question now is: how can the professional care provided for autistic children in Lagos State be made resilient to withstand future crises?

Materials and Methods

For this study, ethical approval was obtained from the Lagos State Office of Disability Affairs (LASODA), an agency under the Ministry of Youth and Social Development and the Research and Ethics committee of the Federal Neuropsychiatry Hospital, Yaba, Lagos. Personal visits were made by the researcher to the head of the Federal Neuro-psychiatric Hospital, Yaba, Lagos which is the apex care centre for neurodevelopmental disorders in Lagos State. From the visits, the researcher gained an insight into the various professionals involved in the care of ASD children in Lagos State.

The selection of the samples was based on expert and snowball sampling techniques. [7] discuss expert sampling and snowball sampling among different sampling methods. Expert sampling is described as seeking consent and collecting information from those that are experts in an area of study. Snowball sampling is viewed as a sampling method in which the design selection process is done through a network. In this study, the researcher knew a few people in the network and chose others in the network by recommendation from the initial few.

The in-depth interview guide was used as the main instrument in the collection of data for this study. Informed consent was obtained before the interview was conducted. Participants were then identified and classified according to their job description and their key role in the care of ASD children.

The study was conducted in Lagos State, Nigeria and covered the period of the full Covid-19 lockdown, spanning from March 31, 2020, to May 4, 2020. Using the snowball sampling technique, the first participant who was interviewed (a psychiatrist) was asked to give the researcher insight about other professionals involved in the care of ASD children. Data were obtained from fifteen (15) participants selected among professionals providing care to children living with ASD across care centres within the state. These include a psychiatrist, speech therapists/pathologists, psychologists, speech and behavioral technicians and a social worker. The interview was done with the use of a semistructured questionnaire and the interviews were recorded.

The interview was transcribed using a combination of manual transcription and software transcription using Google voice and Otter software. The transcription was saved on Microsoft Word. Important and relevant sentences and phrases were highlighted using the keywords outlined below and were then copied into Microsoft Excel. Analysis of data collected was done through a content manual analysis. [8] describes content analysis as one of the commonest methods of analyzing qualitative Keywords such as "intervention", data. "therapy", "use", "assessment", "diagnosis", "centre", "autism", "spectrum", "disorder", "care", "job", "entails", "professional", "design", "plan"; were used to identify the contents and themes used for analysis.

Results

A total of fifteen (15) professionals were interviewed in three autistic centres in Lagos State (Federal Neuropsychiatric Hospital, Oshodi Centre, Shade of Life and Nurture CDC). They include one psychiatrist; psychiatry nurse, two speech therapists (one of them is a speech and language pathologist; the other is a speech technician); two occupational therapists, two behavioral technicians (including an applied behaviour analysis technician), five psychologists (including а developmental clinical psychologist, psychologist, and educational psychologist); one social worker and an autism spectrum technician. The working experience of these professional's ranges from two years to ten years and they have various board certifications and university qualifications.

Of the three centres included in this study, only the Federal Neuropsychiatric Hospital, Yaba offers the full complement of interventions used in the care of autistic children and serves as a referral centre for all these other centres. Other centres only offer behavioral, psychosocial, and educational interventions. The flow of work and common interventions among the professionals are outlined below:

Flow of Work

- 1. Initial assessment.
- 2. Designing of intervention/treatment plan.
- 3. Group sessions: This includes circle time and social playtime.
- 4. A one-on-one session between child and individual professional.

The Interventions used by the Professionals

The behavioral therapist applies behavioral analysis principles, psychological and emotional support in their intervention. The speech/language pathologist and technician employ oral motor exercises, facial massage, verbal behaviour management, speech/language/communication, feeding, swallowing and voice disorder management and the transfer of technology knowledge in their intervention.

The occupational therapist deploys sensory integration therapy, training in basic life skills and conducts follow-up home visits. The psychiatrist applies pharmacological therapy and psychotherapy. The social worker conducts advocacy, sources for material and financial support and conducts home and school followup visits. The psychologist applies psychoeducation, cognitive behavioral therapy, parent management skill training and social skill training. The special needs teacher employ learning disabilities and special needs training in and outside the classroom environment in their intervention.

Analysis of Intervention

On the question "Did you provide any professional care to children with ASD through the period of the lockdown?" 80% of participants responded "Yes", while 20% of participants responded "No". All the professionals interviewed responded that they could not offer the full services that they usually offer to autistic children pre-Covid during the lockdown. For those centres that were still offering services in a bid to prevent the discontinuation of care, all adopted some form of the virtual platform.

The most popular virtual platforms were Zoom video calls, WhatsApp, voice calling and recorded training sessions. All the professionals interviewed expressed difficulty in adapting their methods of delivery of care to online platforms. Some professionals said they could not offer some interventions via online platforms. The speech therapist clearly stated that it was impossible to do speech therapy online. Of the 15 participants interviewed only one said that the use of an online platform for the delivery of care for autistic children was convenient for her. The same participant also expressed the difficulties experienced by the parents of autistic children.

All professionals who offered services during the lockdown had to involve and work through the parents or other caregivers. This shows that parents and caregivers of autistic children have an important role to play in the effectiveness of autistic care delivery. [9] advocate that the family is the main agent of socialization and that their actions are a major factor in the developmental outcome of the child. For parents to be effective in delivering care to autistic children they need to be trained [10].

The most common challenges experienced in the delivery of care online were poor network connectivity, poor or lack of electricity supply and the high cost of purchasing network data. Parents were also having difficulties following instructions given by the therapist during online sessions.

Deterioration in the progress made by these children pre-Covid was expressed by all the professionals. The deteriorations include feeding difficulties, retrogression, weight loss, seizures, and worsening speech impairment.

Interview Responses

Question: What does your work with children with autism spectrum disorder entail?

Responses are as follows:

"My work with children with autism spectrum disorder involves some assessments, diagnosis, management, follow up and then management of other comorbidities associated with the condition" (Psychiatrist).

"As a clinical psychologist...I want to know the level of care and intellectual ability...so I am able to design plan in order to help them" (Clinical Psychologist).

"Communication is one of the core things that I do as a certified speech and language pathologist" (Speech Pathologist).

"We assess their behaviour. We also work with the parents to find out how they can cope with the children at home" (Psychiatric Nurse).

"It involves physically training them basic life skills in activities of daily living. Helping them develop skills to help them function independently" (Occupational Therapist).

"It entails, first, drawing up schedules for the children to ensure that their needs are met, appropriately and proportionally/professionally and it also involves providing care for children depending on what condition it is they have. As it was lacking and basically for the children" (Developmental Psychologist).

"I do apply behaviour therapy... we teach the children socially significant behaviour... we also work on reducing problem behaviour or challenging behaviour" (Behavioral Technician).

'It entails teaching them basic needs in selfhelp, academic, social and communication, fine and gross motor skills'' (Educational Psychologist).

"We work with family, the client, that's the patient, that's the child, then community" (Social Worker).

Question: What professional care did you provide to these children and their parents?

Responses are as follows:

"After the assessments and the diagnosis involves prescribing medication, recommending non-pharmacological treatments for their condition, for their parents involves counselling and psychoeducation, follow up and managing any family dynamics that may be contributing to the child's problem" (Psychiatrist).

"We actually engage in what we call parent management skill training...whereby we teach these parents skills, of how to manage children... that are on the spectrum" (Clinical Psychologist).

"We use applied behaviour analysis ABA to work professionally....and then we use it with the parents also" (Behavioral Technician).

"Ok, the professional care that is being provided for these children at my place of work is majorly to manage the speech, language and communication disorder that is present in those children with autism spectrum disorder as well as the learning disorder, specific learning disabilities that we see in this children anytime they come around, so that is the most present and presenting thing that is common in children that we manage in the clinic" (Speech Pathologist).

"We need to work with them to see how we can refer them either to their occupational therapy, speech therapy, the educational therapist or to the psychologist to see how we can actually help these children to be independent as much as possible" (Psychiatric Nurse).

"Depending on the population, on the presentation of the child, it may entail fun programs, it may involve sensory integration therapy; EDL training that is activities of daily living training and so on and so forth like that we use a coaching model here, so we train them here, we simulate activities, and we follow up with what happens at home" (Occupational Therapist).

"For the parents, we have parents screening, and we teach them basic things that they should know. For the children we have therapy sessions for them in house and at home so that we can generalize whatever it is they are learning assessments are drawn, so they know what this child is, they know the strength and weaknesses of this child and we draw their program accordingly we have empowerment sessions, you know, training for the parents" (Developmental Psychologist).

"First and foremost, like we always say no two children with autism is the same, so they are all unique and different in their own way. So, for each child, the behaviour analyst has to conduct an assessment and then we'll look at the gaps in the child's developmental goals so what we do basically is to implement these goals, to implement this objective depending on the need of the child" (Behaviour Technician).

"Applied Behaviour Analysis for children. Psychological and Emotional support for the parents" (Behaviour Therapist).

"It varies what we do, that is first of all, is the education we do, psychoeducation" (Social Worker).

Question: How did you provide this care during the lockdown?

Responses are as follows:

"We also deploy some ways to try and mitigate this. For example, those having speech therapy, physiotherapy, there were online sessions organized, online classes, so at least puts people in WhatsApp groups, you know, those that had contacts of other people. They added them, the record staff added them; and there was some demonstration just to bridge that gap that the lockdown created at that time" (Psychiatrist).

"We used Zoom with the parents or caregivers the centre sent out the objectives, we send out the objectives to the parents and then we encourage them to get the materials that we would need or put them together most of them have materials at home that we work with the children, so we use Zoom to work with them" (Behavioral Technician).

"During the lockdown we actually practiced what we call tele therapy, we were engaging these children at tele therapy and at a time we had to send them audio of what we do and then We sent audio of what we do because the parent could not fully participate in the tele therapy class so we have to send them audio through WhatsApp so that they can learn" (Speech Pathologist).

"Basically, we had to use our mobile phones call the ones we could follow up or some of them even put calls across to us over the phone, also social media especially WhatsApp and for some who wanted extra coaching and the rest; we also use video calls, zoom and the rest" (Occupational Therapist).

"Yes, during the lockdown everybody had to go online We are telling them what to do via the internet; but we also have cases whereby the therapist may have to go; we were gathering everybody together" (Developmental Psychologist).

Question: How convenient was the method of care used during the lockdown?

Responses are as follows:

"It was difficult at first because the children were not used to conversing with us over the screen...so it was it was difficult at first but with time it got better" (Behavioral Technician).

"For us it was so convenient, for the parent it was not convenient" (Speech Pathologist).

"It was not very easy...it was really really, really challenging for most of the parents during the lockdown, it was not easy" (Psychiatric Nurse).

"It wasn't convenient and more, it was also financially tasking because most of the internet data and the rest had to come from your pocket" (Occupational Therapist).

"I don't think it was convenient, it was a challenge everybody had to rise up to all over the world. it was a challenge, everybody and each sector had their own peculiarity" (Developmental Psychologist).

"It wasn't that convenient, we adjusted into it, because we too we were trying to psychologically adjust to these things in motion" (Clinical Psychologist).

"The virtual is not convenient at all, for me as a person. I will never opt to work at home except I'm working with a child at home. I will never opt for virtual because the amount of control that I can exalt over a particular situation is very very limited" (Behaviour Technician).

Question: What were the challenges encountered during the sessions held during the lockdown?

Responses are as follows:

"Yes, there were a lot of challenges. Number one, the issue is network-based, some had issues with the network, some complained about the cost of getting the data, and then so at a point, we said, okay, it won't be like a live meeting, we won't set time, the tutors just pre-record, and then put the recordings on the group...But the major challenges were the costs, the network issues, some didn't have phones that could be, that could be used for those kinds of purposes" (Psychiatrist).

"But it took a while for us to gain instructional control over the screen and then it took a whole lot of play and just making funny faces doing things that we would normally do with them here .and doing a lot of demonstration just to get them to participate" (Behavioral Technician).

"We had issues whereby they tell you I don't have data; I can't subscribe. My child is now getting used to laptop all the time. They keep giving us those excuses, sometimes we have this network issues that the signal will not be connecting so it is not convenient but despite the fact that we try to manage the situation we begin to see that on the part of the parent it was not so easy" (Speech Pathologist).

"Most of our parents were not able to assess the facility during the lockdown" (Psychiatric Nurse).

"I think it was basically getting the patients to continue with their home programs at least, because that was what we were basically concerned with, that if the home programs were continuing, going on, shouldn't have much problem even after the lockdown, so that was I think a basic" (Occupational Therapist).

"The bulk of the challenges encountered will be the case of some parents not knowing exactly

how to carry out what they are required to carry out" (Developmental Psychologist).

"It was a bit difficult to do the normal procedures, because of the social distancing, you know, wearing of masks, or, you know, a lot of these autistic children. know, it's just, it's just because it was a pandemic, it was very difficult for them to even keep their masks on the ones that were restless, you know, and, you know, an aggressive" (Clinical Psychologist).

Themes Identified from the Study

Care Delivery Pattern

All respondents have a similar workflow pattern that consist of assessment of the patient or client to determine the area of deficiency or pathology. Findings show that an intervention plan is designed after the initial assessment to specifically address this deficient area or areas. The overall aim of the various intervention plans is to assist the patient or client to have at least a near normal state of health. The intervention plan is then implemented, and outcomes are monitored regularly through follow-up visits. This has been the conventional method of care delivery to children living with autism.

Adoption of Virtual Delivery of Care

During the lockdown and as a result of the restrictions imposed by government, i.e., social distancing, wearing of face masks, and others the various professionals were either not offering any form of care or were offering limited forms of care through the virtual platform, i.e., through the use of Zoom, WhatsApp or pre-recorded videos.

Various adaptations were made to ensure the virtual delivery of care was as effective as possible, keeping in mind the constraints brought about by the restrictions imposed during the lockdown; though virtually delivery of care was largely inconvenient for the professionals, the caregivers, and the autistic children, it was still the most conducive platform of care delivery at the time.

Issues with Internet Network Connectivity

One of the major challenges experienced during the virtual delivery of care was the issue with internet connectivity because of poor network, lack of funds to subscribe to available network and poor knowledge and skills of the caregivers in the use of computer and other accessories needed for the virtual care.

Limited Knowledge of Parents in Providing Care

In other not to discontinue the provision of care to autistic children during the lockdown the care professionals had to adopt the virtual delivery of care, but this method needed the involvement of parents or caregivers in administering the care adequately. This posed a challenge to professionals because it was discovered that the parents had little or no knowledge of what was required to deliver the care as instructed by the professionals or adequately carry out the home programs. They were either too impatient to follow instructions or had no idea how to manage meltdown by the children. They also could not be assertive with the children during therapy sessions.

Discussion

From the findings of this study, the method of delivery of care for autistic children in Lagos State is basically conventional. There was no evidence from the data collected that the virtual delivery of care was adopted and used by any of the professionals interviewed before the Covid-19 pandemic. [11] listed onsite pharmacological therapy, behavioral analysis, speech therapy and occupational therapy as conventional methods of care delivery for autistic children. The effectiveness of the conventional interventions has been previously and variously questioned by various researchers [11, 12].

The conventional interventions as practiced by centres providing care to autistic individuals in Lagos State were designed around the onsite presence of both the professionals, the caregivers, and the autistic children. Sessions such as circle time, social plays, speech therapy, and facial massages can only be done through the physical presence of the professionals and the children. Any factor that disturbs or prevents physical presence will invariably cause the disruption of services. Such factors abound in Nigerian society. Industrial actions by professionals like doctors and nurses; scarcity of petroleum products which is a common in Nigeria; public occurrence nuisance frequently created by hoodlums; all these can prevent the professionals and the children from being able to access the care facilities.

This is a major weakness of the conventional onsite delivery of care. Apart from these, Nigeria has continuously been losing its professionals to developed countries. The World Health Organization recommends a 1: 600 doctor to population ratio for Nigeria. As of the time of this study, the doctor to population ratio stands at 1: 5000. This gross deficiency of professionals like speech-language pathologists was mentioned by [13]. The meaning of this is that many autistic children, a lot of them in the rural areas, are not receiving any care and there is presently no plan to reverse this.

Furthermore, the effectiveness of conventional interventions like applied behavioral analysis (ABA), which is the main approach used by behavioral technicians in Lagos, hangs on continued care. Most autistic children will need 20 - 40 continuous sessions of ABA started at a young age for it to be effective. [11]. Findings from this study, show that a lot of the children skip sessions before the pandemic and most especially during the pandemic. [12] express doubt that the therapists can ensure that the children are present in every therapy session. Even when they are present, they can become uncomfortable and not finish the session.

The justification for use of pharmacological therapies by psychiatrists has been argued by various researchers because of the lack of research showing its effectiveness. [14], in a systematic review, conclude that "there is currently scant reliable research available to guide clinicians about the effectiveness or safety of pharmacological treatments."

Just like most organizations around the world, autistic centres in Lagos State were unprepared for the pandemic. (Report of the Review Committee on the Functioning of the International Health Regulations, 2005). There was no pre-existing policy to guide the care of autistic children during a pandemic, so the model and method of care adopted during the lockdown were formed on an ad hoc basis and in keeping with the common method (that is, virtual delivery of services) seen in other non-health organizations. Since there was no proper planning for virtual delivery of care for autistic children, its effectiveness cannot be guaranteed. Also, challenges such as poor electricity, poor and unaffordable internet facilities, poor computer literacy inadequate and or unavailability of government policies on digital communication, contributed all to the ineffectiveness of the virtual delivery of care adopted by the autistic centres in Lagos State. This is in keeping with findings by [15] who investigated the effectiveness of virtual learning in public universities in Nigeria.

Before the Covid-19 pandemic, various researchers have suggested that virtual delivery of care for autistic children has more potential benefits compared to conventional and interventions. [16-19]. Although, the benefits of virtual delivery of care over the conventional intervention cannot be clearly proven by this study because of various challenges encountered during its use during the lockdown; the fact that the conventional interventions were stopped or modified during the lockdown is a pointer that effectiveness its was doubted by the professionals.

ASD children have been observed to have preference for visual stimuli. [12]. Children with autism have been shown to be less resistant to the use of technology in learning, showing that the likelihood of them accepting the use of virtual delivery of care is high. [20]. Various researchers have shown that games played on computers provide a "safe, secure, and less anxious environment" with autistic players of the games learning from their mistakes and while they are playing the games, they learn new things and can become so engaged in the games that they forget it's a therapy session [12, 16, 18].

On the potential of virtual delivery of care to be used to extend care to autistic children in the rural areas, [17] opine that the availability of cheaper and wearable VR devices will help to reach autistic children in rural places that have not been reached before. This was also supported by [21] whose study on the "Development of an affective-based e-healthcare system for autistic children" a wearable emotional-based e-Healthcare controller, opined that the adoption and integration of this prototype will provide access to quality healthcare for children with ASD and help to monitor their physiological state.

For the virtual delivery of care to autistic children to be effective and far-reaching, parents and other caregivers close to the children need to be adequately and appropriately trained on some autistic intervention methodologies and tools and the use of some virtual devices [13, 22].

Conclusion

It is safe to conclude that employing proactive interventions armed with foresight and with considerations for the changing times will no doubt be beneficial and stand the test of time when employed in the care of autistic children. This will go a long way in preventing breaks in the continuity of care of these children because of any future crises. The virtual delivery of care, because of its universal reach and its ability to remain undisturbed by physical disruption, offers loads of potential and benefits in the care of autistic children.

This study has highlighted the vulnerability of the present model of care delivery with the hope that it will create awareness among policymakers in Lagos State on the need to remodel the care provided to autistic children and develop policies guiding the provision of this care in a way that it is resilient to the vagaries of the prevailing environment and extend the reach of the care to hard-to-reach population. The government should through public-private partnership facilitate the deployment of faster and more affordable internet connectivity and better electricity supply.

This study has also filled a research gap on the need to modify the care framework for autism in Lagos State. The government can take proactive steps in identifying, supporting, and collaborating with local IT specialists and researchers within the country, like [21] to raise awareness of the use of technology to design,

References

[1] Shah, P.E., Dalton, R., Boris, N.W., 2007, Pervasive Developmental Disorders and Childhood Psychosis, edited by Kliegman, R.M., Behrman, R.E., Jenson, H.B. & Stanton, B.F. *Nelson Textbook of Pediatrics*, 18th Edition (Philadelphia: Saunders Elsevier), pp. 133-136.

[2] Zeidan, J., Fombonne, E., Scorah, J., Ibrahim, A., Durkin, M.S., Saxena, S., Yusuf, A., Shih, A., Elsabbagh, M., 2022, Global prevalence of autism: a systematic review update. *Autism Research*, 1-13.

[3] Lesi, F.E.A., Adeyemi, J.D., Aina, O.F., Oshodi, Y.O., Umeh, C.S., Olagunju, A.T., & Oyibo, W., 2014. Autism in Nigeria: a call for action. Journal of Clinical Sciences, 11(2), 33-34.

[4] Loomes, R., Hull, L. & Mandy,W.P.L., 2017, What is male-to-female ratio in autism spectrum disorder? A systematic review and meta-analysis. Journal of the American Academy of Child & Adolescent Psychiatry, 56 (6), 466-474.

[5] Levy, S., Okoye, U.O., Ingram, R., 2022, Making the 'local' visible in social work education: insights from Nigeria and Scotland on (re)balancing and contextualising indigenous and international knowledge. The British Journal of Social Work, 00, 1-19. develop and provide virtual resources tailored to the need and care of autistic children in Lagos State and Nigeria as a whole.

Conflict of Interest

The Author declares no conflict of interest.

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[6] Odiah, C.A., 1991, Identification of gaps in social work education in Nigeria. Proquest.

[7] Etikan, I. & Bala, K., 2017., Sampling and sampling methods. Biometric & Biostatistics International Journal, 5(6), 1-3.

[8] Stemler, S. (2000). An overview of content analysis. Practical Assessment, Research, and Evaluation. 7(17), 2000 - 2001.

[9] Opelusi, O.I and Omoruyi, O.L. (2021). Adopting coping strategies of parents with autistic school children in Tender Brain Remedial Centre, Oredo Local Government Area, Benin City, Edo State. Sapientia Global Journal of Arts, Humanities and Development Studies (SGOJAHDS), (4) 1, 23 – 31.

[10] Egbochuku, E.O. & Imoitseme, V.E., 2012. The efficacy of intervention strategies for parents in managing children with autism disorder. *Asian Journal of Management Sciences and Education*. 1(3), 39 - 48.

[11] Jain, S., Tamersoy, B., Zhang, Y., Aggarwal, J.K. and Orvalho, V., 2012, "An interactive game for teaching facial expressions to children with autism spectrum disorders," 2012 5th International Symposium on Communications, Control and Signal Processing, 1-4.

[12] Manap, A. A., Dehkordi, S. R., Rias, R. M., & Sardan, N. A., 2013., Computer game approach

focusing on social communication skills for children with autism spectrum disorder: An initial study. International Conference on Computer Graphics, Visualization, Computer Vision, and Game Technology, VisioGame 2013, 26–31.

[13] Nwosu, N. (2015). Practical steps in the rehabilitation of children with speech and language impairment in Nigeria. *Nigerian Journal of Paediatrics*, 42(4), 293.

[14]Broadstock, M., Doughty, C. & Eggleton, M., 2007. Systematic review of the effectiveness of pharmacological treatments for adolescents and adults with autism spectrum disorder. *Autism* 11(4), 335-348.

[15] Olatunde-Aiyedun, T.G., Ogunode, N.J., & Eyiolorunse Aiyedun, 2021. Assessment of virtual learning during Covid-19 lockdown in Nigerian public universities. *Academicia* Globe, 1-17.

[16] Irish, J.E.N. (2013) Can I sit here? A review of the literature supporting the use of single-user virtual environments to help adolescents with autism learn appropriate social communication skills. *Computers in Human Behavior*, 29(5), 17-24.

[17] Lorenzo, G., Newbutt, N., & Lorenxo-Lledo. A. (2022). Global trends in the application of virtual reality for people with autism spectrum disorders:

conceptual, intellectual and the social structure of scientific production. *Journal of Computers in Education*. 9, 225 - 260.

[18] Mumtaz, S., 2001. Children's enjoyment and perception of computer use in the home and the school. *Computers and Education*, 36(4) 347–362.

[19] Silva, J.C.A, Fels, S. & Villena, J.M.R., 2010, Design of a web-based therapist tool to promote emotional closeness. *Proceedings of CHI Extended Abstracts*, 3565-3570.

[20] Hassan, A.Z., Zahed, B. T., Zohora, F. I., Moosa, J.M., Salam, T., Rahman, M. M. Ferdous, H.S. & Ahmed, S.I. (2011) Developing the Concept of Money by Interactive Computer Games for Autistic Children. *IEEE International Symposium on Multimedia*, 559-564.

[21] Akinloye, F. O., Obe, O. & Boyinbode, O., 2020., Development of an affective-based e-healthcare system for autistic children. *International Journal of Computer Trend and Technology*, 68(2), 216-222.

[22] Reichow, B., Kogan, C., Barbui, C., Smith, I., Yasamy, M. T., & Servili, C. (2014). Parent skills training for parents of children or adults with developmental disorders: Systematic review and meta-analysis protocol. *BMJ Open*, 4(8), 1-5.