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THE POSITIVE INFLUENCE OF ARCHITECTURE IN AUTISM: A CASE OF NEUROLOGICAL DISORDER AND ARCHITECTURAL IMPACTS

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ABSTRACT

One billion people, or 15% of the world's population, experience some form of disability, and disability prevalence is higher in developing countries. Persons with disabilities are more likely to experience adverse socio-economic outcomes such as less education, poor health outcomes, lower levels of employment, and higher poverty rates. This is common in people with autism. Autism has in most part, been misunderstood, mis-diagnosed and seen as something different in Nigeria and especially, depending on one's cultural orientation. It has equally, been given different interpretations and names according to the regions and faith. This is a complex neurobiological disorder that inhibits a person's ability to communicate and develop social relationships. There is a serious and disheartening lack of understanding of autism in Nigeria and it is worrisome that over one million children and teenagers are suffering from the condition, with majority of them termed imbeciles, fools and even witches; an approach that makes medical and psycho-social help difficult. There is need for the urban actors to study and provide standard, and all the necessary facilities required in making comfortable, autistic people and their care givers. Most importantly, educate the general public on the need to see autistic people as human beings and to stop ostracizing and discriminating against them.

Keywords: health, development laws, treatment centre, architecture, discrimination

Introduction

Table Talk" by Martin Luther, was a story about a twelve year old boy who may have possessed characteristics of limited social exchange and imagination. Luther believed the boy was a soulless mass of flesh possessed by the devil and suggested that he be suffocated. Had he lived in the modern era, Luther would have described the young man best as having "Autism Spectrum Disorders." One billion people, or 15% of the world's population, experience some form of disability, and disability prevalence is higher in developing countries. One-fifth of the estimated global population or between 110-190 million people experience significant disabilities (WHO, 2019). Persons with disabilities are more likely to experience adverse socio-economic outcomes such as less education, poor health outcomes, lower levels of employment, and higher poverty rates (fig. 1).

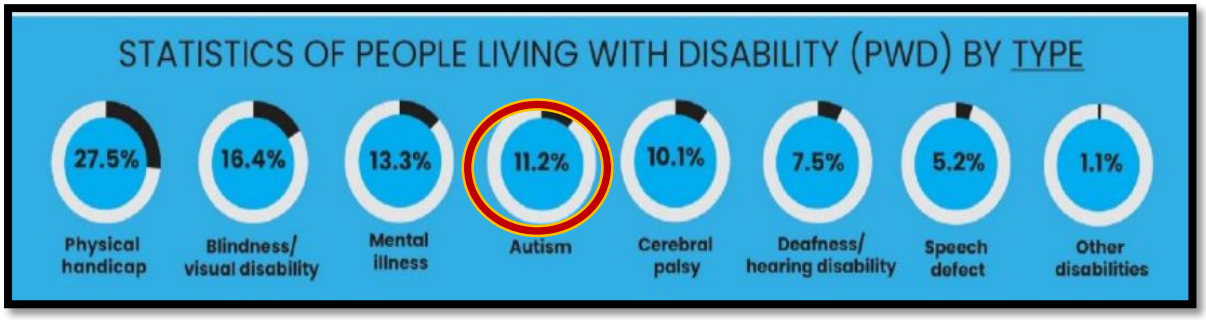


Fig 1. Statistics of people leaving with disability by type (image by author)
Source: review of PWD by CDC, 2014

Globally, autism is estimated to affect 24.8 million people as of 2015 (T,Allen et al, 2015). In the 2000s, the number of autistic people worldwide was estimated at 1–2 per 1,000 people. In the developed countries, about 1.5% of children are diagnosed with ASD as of 2017 from 0.7% in 2000 in the United States (WHO, 2019). It is diagnosed four to five times more often in males than females. The number of people diagnosed has increased considerably since the 1990s, which may be partly due to increased recognition of the condition (Mostafa, 2008). Knowledge and research about ASD globally is highly important and has been continually growing over the last four decades, including research on populations in sub-Saharan Africa, albeit at a much slower pace than research on populations in the western world. (Hosia, 2019)

Recent research studies from Nigeria have contributed significantly to the knowledge of ASD in sub-saharan Africa. The current study is a scoping review of literature on ASD in Nigeria with the goal of offering expert opinions on possible future research and social policy directions in the country (Mullick, 2009). However, the recent research from Nigeria, showed that 54 of the observed sample of 2,320 children had autism, and the condition is relatively more common among boys-45 males and 9 females were identified with autism in the study (Adewakun, 2012).

Autism can be described as a complex neurobiological disorder that inhibits a person's ability to communicate and develop social relationships, in other words, can be termed as a behavioural defined disorder characterized by impaired social interaction, delayed disordered language, repetitive behaviour and isolated areas of interest. Autism is one of the most challenging developmental disorder (Mostafa, 2008). In the ASD population, it is a common tendency to be sensitive or unusual in reacting to sensory stimulation through taste, touch, smell, hearing or site. A person with ASD may have a time delayed response to learning, or may be incredibly good at other skills. One child with the disorder could show severe physical and cognitive impairments, the other child could have incredible skills in science, art, math, and memory, but may be deficient in their social skills. Other traits include, having the inability to control emotions, reactions, and behaviours (Mostafa 2008),

The statistics for prevalence in Nigeria is scarce, but based on the CIDEA report; current research has stated that 1.2 million Nigerians are affected by this disorder (Adewakun, 2012). The effort to recognize autism as a disability in its own class and to address its many challenges started in the United States, in the early 1940's through 1960's till date and there is still a low level of awareness among parents in Nigeria (Egbochukwu et al, 2010)

Martins (2007), opined that lack of awareness of this disorder has resulted in most sufferers of autism ending up in the streets as insane people in rural areas. Children are at risk if they are not diagnosed early, they are rejected by regular schools and those accepted are labelled as slow in learning and not given opportunity to develop at their pace and the built environment. Unfortunately, diagnosis of autism is often delayed in Nigeria, due to factors such as lack of knowledge about ASD, inadequate number of trained personnel and healthcare facilities, and financial obstacles to getting help (Amaechi, 2008). The built environment provides the setting and backdrop by which humans live and impacts senses, emotions, participation in physical activity and general wellbeing (Buttersworth, 2000).

The use of the built environment as a place for healing can be traced back to early Asian, Greek, and Roman cultures (Larson, 2010). It follows that the built environment performs a crucial function to some extent in health and mental wellbeing. In an attempt to create an environment that is safe and where they can achieve a sense of wellbeing as well as provide social considerations to meet their needs and alleviate the difficulties they face in their daily lives (Ulrich, 1991). The theory of supportive design explores the ways a designer can utilize the built environment to reduce stress, providing an understanding about the physical needs of the users for example the need for outside connections, control of temperatures, and appropriate light levels. Strategies and approaches for achieving supportive design address diverse occupant needs (Ulrich, 1991).

This work looks into the necessity for a fresh approach in designing educational and rehabilitative spaces for a supportive environmental intervention for autistic children. Individuals diagnosed with autism spectrum disorder, or ASD have the same rights to functional, accessible spaces that the non-ASD world enjoys, hence there is a necessity for a behaviour-centred design which focuses on: Assessing what the child is capable of (their skills, strengths and abilities, accepting the limitations caused by the brain disorder. With a thorough understanding of these aspects, a trained professional is able to identify what support the child needs in order to get back and communicate with the typical (Alfred, 2019).
Spatial articulation in the design of an autism for children can be employed in the task of enhancing user circulation by improving way finding and supportive ability of users- Introducing strategies in which spaces are articulated and grouped according to functional relationships to enable users to be able to navigate the facility (Mostafa 2008).

CIDEA (2001), discussed the importance of structuring a way of finding and supportive system around the design of spaces. Way

finding requires designers to organize and communicate the dynamic relationships of space and the environment to allow people to: Determine their location within a setting by identifying and marking these spaces, identify their specific destination by grouping and linking similar spaces,

Develop a plan that will take them from their location to their destination by linking and organizing space through both architectural and graphic means in a safe barrier-free direction of travel. Building circulation is a key organizing mechanism of layout and communicating space as it connects exterior and interior areas and reflects the overall spatial organization of the building. The circulation system is often referred to as a "skeleton" that forms the supporting structure of the building (Jiang and Liu, 2010). Its efficiency depends on making the destination evident to the user, so that users can easily direct their movement towards their goals. Thus, circulation reveals in a powerful way, how patterns of space and configuration affect users through movement (Natapov et al, 2015).

The majority of the real world architectural settings are not based on a single pattern of navigation, but comprise a combination of circulation patterns that can be constructed from various geometric rules or by combining elements from the different types. There is no firmly established circulation Typology; it has been defined rather informally in architectural literature (Clark et al, 2015). Passini (1996), suggests that gestalt or 'good primal form' of spatial organization Contributes to way finding performance. A 'good form' of the circulation system (e.g. A square, a Cross, an L-shape) can support understanding the complexity of the layout as soon as the person notices the specific single-shape as an underlying ordering principle; this in turn can inform and thus support way finding behaviour.

Montello (2007), also argued that layouts which resemble a 'good form' may be easier to understand; i.e. single, simple shape layout pattern would thus be easier to cognitively process. Physical characteristics of circulation systems can be categorized with the following primal forms: Linear, circular, networks or other. In a health care centres , the purpose of way finding and supportive systems is to direct children, visitors and staff from entryways and car parks to their destinations and back again. Hence, the autism Centre must be properly organized to be able to enhance the child's well-being, impact on their health, help enhance confidence, self-esteem and motivate them. With public awareness remaining at an appalling level, autistic individuals face major challenges associated with stigma, adverse discrimination, abuse, severe isolation and lack of access to support. Thus, most striking feature of autism is social disconnection. Despite the high prevalence of autism, architectural design guidelines are yet to be developed catering specifically to the scope of autistic needs (Mostafa, 2008).

CIDEA (2014), estimates that approximately 1 in every 88 children are diagnosed with some level of autism and frighteningly distant rate from one in 10,000 cases seen in the 1980s. The prevalence rate of autism in Nigeria is 1 in 250. The government only recognized the

disorder in 2001, in 1980s, there were reports that autism didn't exist in Nigeria (Aniokor, 2009).

Aim

Autism is a complex neurobiological disorder that inhibits a person's ability to communicate and develop social relationships especially, in children. Unfortunately, it has been misunderstood, mis-diagnosed and seen as something different in Nigeria and especially, depending on one's culture and cultural orientation. It has equally, been given different interpretations and names according to the regions and faith and that is what this work wants to correct.

Research Method

The authors adopted content base analysis, qualitative research method where they carefully analyzed and interpreted works of other authors and used them in buttressing their points as applied to the issue at hand, autism.

Findings of the Study

In Nigeria, many autism children are either not diagnosed or misdiagnosed and the few that are diagnosed, have fewer facilities that have been provided to cater to their needs. Little or no consideration has been given to the environment for their care, to make it inclusive and for them to be integrated into the society. From literatures, attention has been focused mostly to the adult healthcare as a result, most of the medical facilities and health centres in the country carter to the adults. It is a common knowledge, that because of the quest and interest in money making in the country, children are left at the hands of private health centres and most of them, poorly equipped and maintained. Hence, the need for a well-established medical health facility for the autistic children that can enhance the environment of care for autistic individuals as well as their care givers.

Autism has in most part been misunderstood, mis-diagnosed and seen as something different in Nigeria and especially, depending on one's culture and cultural orientation. It has equally, been given different interpretations and names according to the regions and faith. This is a complex neurobiological disorder that inhibits a person's ability to communicate and develop social relationships. Simply put, it is a behavioural disorder in mostly in children, generally characterized by impaired social interaction, impaired language and communication. Autistic children generally isolate themselves with questionable social behaviour disordered easily noticeable and misinterpreted for one spell or another in the villages, churches and native doctors.

In general, most autistic children are blessed with different skills irrespective of their shortcomings and behavioural challenges. A behavioural challenge and developmental disorder early in life, the children have the tendency to be sensitive with unusual capacity to react to stimulus with strong sense of taste, hearing, touch and smell. In all these, of common concern in autistic children is their major trait. Their inability to handle and control emotions are their major challenges, outburst and in some cases, explosive confrontations when provoked have in most cases, subjected

them to all kinds of stigmatization and ostracization.

Conclusion

There is a serious and disheartening lack of understanding of autism in Nigeria and there is about 135 million established cases of autism globally and it is worrisome that over one million children and teenagers are suffering from the condition in Nigeria, with majority of them termed imbeciles, fools and even witches; an approach that makes medical and psycho-social help difficult .These alarming rates of increase call for attention by all the fields and clearly architecture has been ignoring the effect of the built environment in their development. Therefore, there is a necessity for a behavioural centred design, the design of this centre will help educate parents on how to handle their autistic kids, especially immediately after being diagnosed. The specific goal of this centre is detecting autism-related differences in brain connectivity that emerge in early childhood, with the goal of identifying objective biological markers that can one day, be used to improve early intervention efforts and also the selection of treatments.

The need for spatial articulation through functional and strategic organization of space and effective circulation cannot be overemphasized. Failure to consider requirements and principles at the design stage would be detrimental to its functionality.

Recommendations

The urban actors should study and provide standard, and all the necessary facilities required in making comfortable, autistic people and their care givers. They should provide autism centres that will serve as models for subsequent efforts with related interest in the field and with all the necessary information for duplications for those who have related interest. Most importantly, educate the general public on the need to see autistic people as human beings and to stop ostracizing and discriminating against them.

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