

Illness behaviour of hospitalized children in an ideal hospital ward setting

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ABSTRACT

For hospitalized children, stress is a constant. Studies in the last two decades has shown that hospital norms, medical protocols and situational cues stress children's lives and delays their health restoration. The aim of this study is to explore the behavioural responses of children in hospital wards without intervention measures in northern Nigeria. Features and attributes in the ward that can sustain children's interest, physically, socially and cognitively are lacking. This study methodological approach uses observation and judgemental scale questionnaire on how illness and hospitalization define children's behaviour in relation to their healthcare settings. The study was conducted at Abubakar Tafawa Balewa University Teaching hospital Bauchi Nigeria. A total of 12 children were observed for 2 weeks and 15 nurses responded to the Analytical Hierarchy process (AHP) scale questionnaire respectively. The hermeneutic analysis of recorded videos and Expert Choice were categorized to relate with the domains of physical, social and cognitive activities. Action and behaviour shown by the children are physical behaviour (n=7), followed by social behaviour (n=4) and cognitive behaviour (n=4). Findings from Expert Choice (EC) revealed that children behaved regressively in the ward, they display more passive behaviour than active behaviour in the ward with being fearful and restlessness scoring the highest. It signified that the children were experiencing low, physical, social and cognitive functioning. The result of the study indicated an association between hospital norms, medical protocols with situational cues and their effect on children's behavioural outcomes. Even if the present understanding of the hospital norms and protocol is being considered favourable in caring for ill children, the study showed it hinders their restoration process.

Key words: Children, Hospitalization, Hospital norms, Medical protocols, Situational cues, Health restoration.

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I. INTRODUCTION

Situational cues are rarely used in phenomenological study on person-environment transaction of children in their hospital ward setting. Studies have revealed that children's hospitalization interrupts a child's usual routine by leaving their familiar environments (Frumkin, 2001; Roberts, 2010; Wilson et al., 2010). Example, from playgrounds, school and home, to an unfamiliar hospital setting with a number of other features and situations that can result into negative psychological and emotional state (DeMaso and Snell, 2013; Lerwick, 2013; Wilson et al., 2010). As such, the children exhibit passive behaviour such as, feeling of anxiety, boredom, anger, sadness, and worry as well as being isolated from peers, thus affording stress (Colwell et al., 2013; Livesley and Long, 2013; Adams et al., 2010; Pelander et al., 2007). The degree of the stress mainly depends on the physical setting and the cultural norms with medical protocols of the hospital (Whittaker and Chee, 2015). In this research context, children lack the freedom to independently move around, play and interact in the hospital wards (Coyne, 2006; Weaver and Groves, 2003). This is due to over stretched hospital ward facilities such as beds that covers more space and brings children to stay closely with strangers (Redshaw, 2002).

The lack of activities has also been attributed to other factors that includes individual differences and demographic factors relating to age and gender, where girls are found to have less autonomous mobility than boys (Pacilli et al., 2013). Place experience depending on child's familiarity with features found in their places (Brooks and Sorin, 2011; Castonguay, 2010). In addition, children place preference and attitudes towards place activities also differ from one child to another (Alexander et al., 2015). Furthermore, physical factors such as design and quality of their environment, as well as lack of facilities and accessibility to play elements also hinder the child's functioning and positive behaviour (Czalczynska-Podolska, 2014). Therefore, lack of functional play elements and features in a setting for children deprived them proper functioning (Maier et al., 2009; Prieske et al., 2015).

It indicates that there is a mismatch between the situational cues in the ward setting and the children's needs. Meaning that, for the past 20 years the children behaved regressively, displaying negative behaviours such as fear, discomfort, anxiety, boredom, crying, and clinging to their parents (Lansdown, 1996; Lau, 2002; Moore et al., 2015; Wilson et al., 2010). As a result, the children's functioning, particularly their physical actions, social interactions and cognition are reduced. Thus, negatively influencing children restoration process (Eisen, 2006; Gouin and Kiecolt-Glaser, 2011). This phenomenon is common in many children's hospital wards in north eastern Nigeria. Presently, the hospital for children emphasises on the provision of medical equipment and facilities that added functionality to some extent. The psychological aspect of the cure is rather inefficient in supporting the process of children restoration (Eke et al., 2014). This is common because the design of hospital from pre-colonization era from 1902 to date are still reflecting on early European concepts of designs that are meant to provide care for illness, reduce infection and house medical equipment (Ulrich, 2002).

In addition, the arrangement of hospital ward space in this research context allows for 6 or more beds in a cubicle, as such the children do not have space that will allow them to play. Moreover, there is no provision of features such as toys that supports the play needs of children (Adeyemi and Oyewole, 2012). Gardens play provision and other landscaping features used in advanced countries to meet children preference are often not sustainable due to minimal rainfall, harsh weather, and in most cases it non-existent. By and large, the researcher being from the field of architecture is keen to explore the behavioural responses of children in hospital wards without intervention measures that can sustain their interest, physically, socially and cognitively. Studies by architects in healthcare setting has focused more on privacy, impact of facilities on wellbeing, safety, sustainability, ventilation, flexibility, innovations and so forth (Mourshed and Zhao, 2012; Reiling et al., 2008; Verderber et al., 2014). However, such studies are centred on form and function in relation to geometric relationships, thermal comfort which may not bother children functioning in most cases. For an overview of information gathered from public paediatric wards in Nigeria from 2013-2014, it indicates that almost all the wards lack intervention strategies that can assist children to cope with psychological and emotional stress of hospitalization.

II. METHOD

The behaviour of children in a hospital context is being elicited using video recording of children's activities and a judgmental scale questionnaire for caregivers using analytical hierarchy process (AHP). To elicit data on children passive behaviour and to ascertain which of the behaviour are most dominant in the ward without intervention measures that can sustain children's interest. The data obtained from both qualitative and quantitative processes were analysed separately using content analysis and Expert Choice II. Findings from each method were triangulated to obtain the reliability of the results which can be used in a broader sense, alongside other research that explores on the psychological benefits of play experience to hospitalized children. The methodology used in carrying out this research was tailored towards answering the study objective. Basically the research design was concentrated on identifying the passive behaviour of children in a hospital ward in the Nigerian context.

Background and Unit of Analysis

The unit of analysis of this study are children of early and middle childhood ($n=12$), aged 3 years to 12 years old. Children recruited for this study were admitted to recover from illness and diseases, such as sickle cells, typhoid and malaria fever. The children hospital ward of Abubakar Tafawa Balewa University teaching Hospital Bauchi was chosen for this study because; it is one of the 18th Teaching Hospitals of the Federal Government; It has 700-bed capacity with different generation of infrastructure from 1981; The hospital offers full services involving healthcare services, training and research; An average of 3400 patients are seen for different diagnosis from neighbouring state and districts per week.

Approach for Data Collection

The study uses pragmatist-phenomenological approach to ascertain person-environment transaction and children's adaptation, coping abilities, relationship with other patients and their caregivers. Thus, the study measures the result of events by interpreting the activities of children in a context (Goldstein, 2012). Pragmatist-phenomenology is employed in this study to straighten the mixed method adopted with qualitative approach as main domain which involves exploring and describing situated freedom actions of hospitalized children in a hospital ward (Lopez and Willis, 2004). Study by Walsh et al, (2010) emphasise that phenomenology examines and interprets human, in relation to their contextual situations, events, meaning and experience. The study of children in a ward setting entails observing children situated actions as it freely and naturally occurs in the course of everyday existence.

Measurement Strategy A: Video Recordings

Many studies have used video recording to observe phenomenological behaviour in a context. For example, study in paediatric setting by Green et al, (2015) uses web-camera to view hospitalized infants effect on their parental stress, anxiety and bonding. Likewise, Türk et al, (2013) uses a video camera to record children post-surgical follow up to observe on their reduction in fear and anxiety during the time they spend in their waiting room. This study equally employed the use of video recording of children's behaviours and functioning. The data collection process was carried out with digital video recorder, hidden to elicit covert data on children's behaviour. Wordings of children were elicited during their interaction with doctors, nurses, parents and other children in the ward. The purpose of using the video recording is to understand children's behaviour and their preference of a hospital ward setting. The observation provides an insight on children situated freedom, communication and relationship with their caregivers.

Measurement Strategy B: AHP Questionnaire

Analytical Hierarchy Process (AHP) is a multi-criteria decision making approach originated by Saaty(2008). It has been applied in group decision in related field of study like education and healthcare(Murat et al., 2015). It allows for a structure that represents and quantifies properties and attributes in relation to the overall objective. Contextual conditions of hospital ward settings with norms and protocols that affect children's behaviour were elicited via their caregivers using judgement scaled questionnaires. It is a method used to derive ratio scale from paired measurement involving subjective opinion, such as feelings and preference (Koczkodaj et al., 2014). This is to judge which entity has a higher influence and quantitative properties(Cuadrado et al., 2015). Perceptual judgement of children's behaviour associated with hospitalization.

Study Site

The study was carried out at Abubakar Tafawa Balewa University teaching hospital in Bauchi, Nigeria. It was formally a specialist hospital upgraded to a teaching hospital in 2010, being the 18th teaching hospital of the federal government. It has 700-bed capacity with different generations of infrastructure from 1918 that render health services to the populace. The hospital offers full services involving healthcare services, training and research. Being the major health facility in the state with a population of 4.6 million people it also serves patients from the neighbouring states. The hospital is the second teaching hospital in the Northeast geopolitical zone, which has a population of about 19 million. There is a high turnover of patients at an average of 3,400 patients is seen per week with a percentage bed occupancy rate of 72.8% for inpatient. Copyright ©2014 Abubakar Tafawa Balewa University Teaching Hospital, Bauchi. All rights reserved', (2016).

Ethical Clearance

Approval for the study was issued by the ethical and research committee of Abubakar Tafawa Balewa University Teaching Hospital Bauchi to conduct research with children. The hospital ethics committee instructed the researcher to register for a free course with Collaborative Institutional Training Initiative (CITI). That offers training and learning about human subject research in collaboration with the West African bioethics training programme, and the researcher was instructed to take courses in the following modules; (i) history and ethical principles, (ii) defining research with human subjects, (iii) regulations, (iv) assessing risk, (v) informed consent, (vi) privacy and confidentiality, (vii) research with children and (viii) conflict in research involving human subjects. Furthermore, the researcher had a session with parents and caregiver's, adding that participating is voluntary and they can withdraw their children from the study at any time. At the same time, written information on the nature of the study and consent forms in English and Hausa language were produced to obtain their approval. The forms were important requirement in conducting research with hospitalized children(Kassam-Adams Elana, 2002). The parents and guardians were required to consent on their child's participation.

III. RESULTS AND DISCUSSION

The physical settings in Nigerian children's wards lacks certain basic artifact and attributes that could contribute to the children movement and activities. This is because the ward from design stage to occupation gives less emphasis on issues that relates to children psychological and physiological health outcome. Meaning that, the concentration is on the housing of medical equipment and apparatus. The ward design is centred on policies and architect's views, without considering children preference and needs which include places for their play. The result from the analysis of recorded videos for 15 minute intervals identified the ward features and attributes that influence child regressive behaviour as shown in Table 1.1. The results were categorized to relate with the domains of physical, social and cognitive activities (Demetriou et al., 2015). The results were based on children's actions and behaviour in the hospital ward settings. Action and behaviour shown by the children are physical behaviour (n=7), followed by social behaviour (n=4) and cognitive behaviour (n=4). The outcome of

this activity and behaviour contributed to children's regressive behaviour such as crying, being bored and fearful. The result shows the actions and behaviour of children in the dominant ward setting are as a result of cause and effect of the properties and attributes in the ward (Patti et al., 2013).

Table 1.1: Classification of children's behaviour in controlled ward cubicle

	Observed behaviour	Themes	Domain
1	Staying quiet Creeping on the bed Hiding face Scratching Nails biting Teeth grinding Moving slowly (n=7)	Sedentary in their bed Being weak	Physical Functioning
2	Needing adult support Surrogate stimulation Nodding their head in response to caregivers Self play with hand phone (n=5)	Not interacting with peers Clinging to parents	Social Functioning
3	Thumb soaking Non-cooperating Frowning Open mouth (n=4)	Excessive crying Excessive fear Boredom Restless Discomfort	Cognitive Functioning

Physical Functioning

Result in Table 1.1 identified seven actions and behaviours demonstrated by children that include staying quiet, creeping on one's bed, hiding of face, scratching of the body, biting of nails, grinding of teeth, and slow movement. In other words, these behaviours and activities slow down patients physical activities and functioning that makes them behave regressively (Roberts et al., 2015). Children stayed quiet on their beds without talking to anyone except with their parents and a times to the nurses (Livesley and Long, 2013). This means that the children are lying ideal without any activities that would at least involve the movement of their thumb and fingers which may lead to the development of large muscles for sitting, crawling and walking (Lobo et al., 2014). In other words, these behaviours and activities slow down patients physical activities and functioning that makes them behave regressively (Roberts et al., 2015). This suggests that the ward condition delays their movement and coordination disposing them to limitations towards their physical functioning (Pitetti et al., 2013). Subsequently, lack of children's movement and coordination may cause them to develop a negative perception toward physical interaction in their settings (Bouhuys and Sam, 2000).

It was found that, children creped on their bed from time to time, demonstrating a repetitive unusual movement. It means that, the children are restless, bored and weak in the ward. This suggests that there is no any source of distraction measures that will keep them engaged while hospitalized. Consequently, the children were noticed to frequently scratch most part of their body. Meaning that the children were experiencing an intense irritation that made them scratched their body (Kader et al., 2015). However, tolerance to this consistent scratching was difficult as a result of the effect of medication for malaria and the stress of hospitalization. This suggests that when children lay down without doing anything, the creeping and scratching becomes a routine activity that occurs more often because the children are restless and bored in the controlled ward. Their restlessness and boredom delayed children to engage in physical activity involving their free movement and coordination.

Another physical activity and behaviour identified to occur simultaneously was nail biting, which further encourages them to grind their teeth while hiding their face. It means that children use their mouth to perform activities other than speaking and eating (Roberts et al., 2015). In other words, the children did not have anything to keep their mind occupied because there was nothing to interest them (Santana-Mora et al., 2014). This suggests that the ward conditions without a play intervention makes the children's experience boredom and weakness. As such, the children turn to their nails and teeth to keep themselves occupied. These are parallel to findings in studies of anxiety disorder by Snorrason and Woods (2014) that nail biting and teeth grinding are the result of patients frustration and loneliness. The result further reveals that children are slow when getting down from their beds to ease themselves (to pi and pup). It means that they are reluctant and slow in performing functions, rather they clung to their parents for support. This suggests that there is no activity to keep the

children active while in the controlled ward because there is no provision of space for children to engage play and socialize with their peers in the ward.

Social Functioning

Results in Table 1.1 reveal four social behaviour and actions in the hospital ward cubicle. The actions and behaviours were normally performed by children on their beds, they included needing adults support, nodding head, watching a play from far and playing alone. They engaged in these activities and behaviour because they lack space to interact and relate with others in the ward (Rapoport, 2014). Needing adults support means that the children relied on their parents and caregivers for physical and emotional support in the ward. The result indicated that children receive support from their parents and caregivers through friendly interaction, communication and caring facial expression to the children (Duzkaya et al., 2014). The support included helping a child to adjust his headrest, feeding, rubbing and placing ice block on swollen arm due to injection and cannula or when they needed to take their bath (Foglia and Milonovich, 2011). Inasmuch, as this finding is peculiar to Nigerian context, caregiving in developed nations such as the United States of America are being provided by the caregivers. For example, a caregiver is responsible for placing a child's hand on a heating pad or when there is the need to change and clean them (Roberts, 2010), however, this is not available in Nigeria.

Furthermore, children's social performance in the ward included nodding. This means that they agreed on taking their medication. This finding affirms with studies in infants behaviour and development by (Fusaro et al., 2014) found that children used to nod in indicating their self-assurance. However, studies by Kim et al., (2014) suggests that nodding is as a result of low self-esteem, social distress and social anxiety as the reason children use nodded in communicating with the nurses and their parents in the ward. This suggests that the children nod their head in approval, which to some extent further straighten their relationship with caregivers in the ward.

Cognitive functioning

The result reveals four actions and behaviours in the hospital ward cubicle that demonstrated children cognitive performance. The behaviour was performed on their bed either lying down and sometimes when they were seated. These behaviours included thumb sucking, non-cooperating to medication, frowning of their faces and opening their mouth. Thumb sucking is an inappropriate habit, reluctantly done by children, mostly using right hand to comfort themselves (Hepper et al., 2005). This implies that children suck their thumb because they lack incitement from the ward that will motivate and enhance their functioning. This also suggests that the children were using their thumb to relieve themselves from the ward conditions that causes them to behave regressively. It means that the children were helpless in the ward that created a discrepancy between the demand of their situation and the cognitive resources available to them as children (Liaw et al., 2011; Monteiro et al., 2014).

Likewise, the result shows that the children refuse to cooperate with their caregivers during treatment and medication in the ward. It means that the children do not relate well with the nurses when giving them drugs, injection, taking their blood sample, and when replacing cannula. The results further show that children frown their face whenever there was a nurse presence at their bedside or in their ward cubicle. This finding suggests that the children were scared of the nurses. The children's perception was that they were responsible for inflicting more pain in addition to their illness. In paediatric nursing, Albert et al., (2013) also found that the nurses white colour uniform scared the children's which resulted to their negative emotions.

The results further showed that the children in the ward like to leave their mouth wide open for a long period of time. This behaviour was noticed to occur when the children are lying idle on their bed. This means that the children were restless with nothing to motivate them and keep them occupied. This implies that there are no provisions for play items to see, feel and grab to regain their cognitive functioning in the control hospital ward. In the context of cognitive behaviour, (Flessner, 2011) found that open mouth relates to unoccupied mind, with lack of physical and social integration that would improve on patients cognitive functioning.

Triangulating the result with findings from the Analytical Hierarchy Process (AHP) analysis with caregivers (n=15) with the from video recording, it consistently revealed that children behaved regressively in the ward cubicle. It was found that children display more passive behaviour than active behaviour in the control ward cubicles with fear and restless as the highest. It means that the regressive behaviour signified that the children were experiencing low, physical, social and cognitive functioning. Figure 1.1 indicated the ranking of children's regressive behaviour observed by their caregivers in the ward.

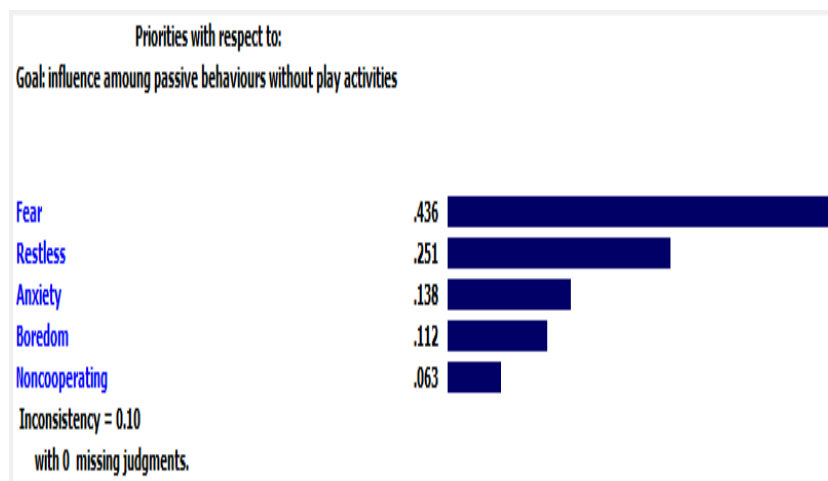


Figure 5.4: Ranking of children's behaviour in the control ward cubicle

The findings on the regressive behaviours which included being fearful, restlessness, anxiety, boredom and non-cooperative were consistent with findings in landscape architecture by (Said, 2006). It is also in line with paediatric nursing studies by Lau(2002) and Lindheim et al, (1972). These behaviours were due to fear of medical procedures and pains as well as unfavourable ward properties. This is synonymous with the literature in pain management nursing by (Foster and Park, 2012) which stated that fear and anxiety are among the most reported stresses that contribute to children slow recovery. The slow recovery means prolonged hospital stay, experiencing pain and increased the use of more sedatives. This suggests that lack of intervention such as play items and space for children's movement and interaction makes them to behave regressively.

IV. CONCLUSION

The hospital paediatric ward can be noisy, unfriendly, and uncomfortable. Most of the time, it is filled with beds and chairs. The walls are plain, the floors are bare and it is crowded with people, which at a glance looks like the children are confined in a cage. Despite the medical apparatus, illnesses and protocols, being in an unfamiliar setting with strangers and limited space for movement are a major contributing factor for stress to the children. As the ward being examined children were seen to show regressive emotional behaviours signs such as boredom, anxiety and clinging to their parents. Even with the show of regressive behaviours, thenurses and doctors together with parents want to see the children in bed receiving treatment and being cared for in the ward. Even though this was the common practice in this research context, hospitalization is centred on medical norms and hospital protocols. It is important to know that children are different because they like to satisfy their inert play desires even when hospitalized. Even with their parents present, only few affordable interactions like caregiving, feeding and physical support prevails which seem not enough for the child's physical, social and cognitive needs. At times, parents were seen bored as well in the ward and thus the children at times indulge themselves in their own ways of playing such as having hand phones at their disposals. This scenario has forced the child to perceive the ward as a setting that lack features and situations that fits with their needs and demands.

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