

Essential Elements in Children Hospital Environment: Role of Perceived Affordances

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Abstract— Conventional loose items and elements have proven to possess learning and stress-reducing properties in educational settings. In order to explore on the effective stress-reducing effects of loose items, the study investigates the stress-reducing effects of conventional loose play items on paediatric patients because such play items is perceived to be inherently attracted to children. An experimental study (ward: conventional loose items vs. no conventional loose items) was used in which participants (n = 13) were presented with a photo of a hospital ward setting with conventional loose play items with a setting that is commonly used in Nigerian context. Afterwards, perceived stress and the perceived affordances of the hospital room were measured. The study was conducted from November to December 2013 in a children paediatric ward at Bauchi, Nigeria. Subsequently, results shows that participants exposed to the hospital room with conventional loose items reported to develop lesser expression in the change of their behavior such as mood, anger and restlessness than those that are not exposed to such environment. Descriptive content analysis confirmed that conventional loose items in a children hospital room reduce their feelings of stress though there perceived inherent play attachment to such play items. This study confirms the stress-reducing properties of conventional loose items and elements in the built healthcare environment.

Index Terms— loose items, healthcare, paediatric, stress reducing, perceived affordance, elements and environment

1 INTRODUCTION

Healthcare facilities were built to deliver care in line with norms and practices [1]. However, several research findings support the concept of the healthcare environment to have an impact on the health outcome of patients [2]. There are aspects of the physical healthcare environment that can have effects on the health outcomes of patients “architectural features (e.g., spatial layout, room size), ambient features (e.g., lighting, odors), and interior design features (e.g., color, artwork, indoor plants). Interior design variables provide relatively easy and inexpensive opportunities to alter the atmosphere of healthcare environments” [3]. This may work especially with new facilities or those that exist and scheduled for renovation. The review from [2] explains that effects of interior design variables appear to be highly undecided, The knowledge of particular environmental stimuli and their influence on health outcome may facilitate the needed changes in an environment. In addition, understanding the underlying processes causing these effects may help us in providing healthcare facilities to accommodate more interesting features like loose play items that can improve on health restoration.

For children, hospitalization is generally associated with feelings of fear, uncertainty, and anxiety [4]. These feelings of stress and anxiety may affect the healing process. Research shows for example, that such psychological stress impairs wound healing in patients [5]. With regard to the idea of healing environments, aspects of the built healthcare environment

that can reduce this stress may therefore have beneficial effects on health-related outcomes. Research on restorative environments suggests that certain environments are capable of promoting recovery from stress, such as natural settings that has certain restorative qualities [6]. Considering the potential healing properties of nature, exposing patients to natural elements may be an effective way of reducing stress associated with hospitalization [3] However, most healthcare facilities are implemented and built with little or no features added that patients can be exposed to reduce stress in patients and in turn aid their recovery [7]

As a result, humans have an innate tendency to pay attention and respond positively to natural elements [8]. This tendency to select natural elements to man-made objects may be the explanation of the stress-reducing effects of nature. It might thus be hypothesized that natural elements affect feelings of stress through the perceived attractiveness of an environment. The purpose of this experiment was thus to investigate whether the stress-reducing effects of loose play items occur because an environment with such items is perceived as being more of affordances to children. The theory that natural element in the environment is beneficial than man-made objects may be the elucidation of the stress-reducing effects of nature. It might thus be hypothesized that natural elements affect feelings of stress through the perceived affordance of an environment; the following hypotheses will be tested:

H1: The presence of loose play items in children hospital ward leads to reduced feelings of stress in patients.

H2: The perceived affordance of the hospital ward facilitates this relation between loose play items and stress.

2 METHODS

This procedure has been shown to accurately simulate real environments, an experimental study using photos of (ward: with conventional loose items vs. ward with no conventional loose items) with (n=12) patients. They were presented with a photo of a hospital ward setting with conventional loose play items and other different settings that is generally used in Nigerian paediatric hospital context. The scenario described that participants involved have been hospitalized with symptoms of typhoid and malaria fever. In both conditions, participants were exposed to a photo of the two different hospitals setting where their behaviors were observed for period of 3 days. Prior to the commencement of the study, a written consent was obtained from the hospital ethics committee and parents of the participants.

3 RESULT

The descriptive content analysis of the photographic documentation of two different scenarios that has shown that patient in the hospital room with images of conventional loose play items perceived less stress than participants in the hospital ward whose photographs indicate a similar conventional setting with no loose items. The analysis, with perceived stress as the dependent variable and the presence of conventional loose play items as the predictor, generated a significant perceived relationship with participants perceiving less stress with the images of conventional loose play items. Another analysis, with the mediator (conventional loose play items) as the dependent variable and the presence of loose play items as the predictor, showed that the presence of loose play items increased the perceived affordance significantly, subsequently; it was observed whether the relation between the presence of loose play items and perceived stress was mediated by the perceived affordances of the ward.

4 DISCUSSION

The present study aimed to gain an understanding of the primary guide on environment and its features that may influence stress-reducing effects of natural elements such as conventional loose play item in the healthcare environment. Our results suggest that the abstract presence of loose play items in a hospital ward leads to a reduction of perceived stress in

patients. This finding supports the general notion that nature has stress-reducing properties [3,9]. Most importantly, the present results also demonstrate that these stress-reducing effects are mediated by the perceived affordances of the hospital ward. The presence of loose play items in a hospital ward leads to a higher perceived affordance of the cubicle and this, in turn, leads to reduced feelings of stress in patients.

However, the general knowledge by which contact with nature may reduce feelings of stress had never been empirically studied in Nigerian context. This experiment showed that the stress-reducing effects of nature are caused by the perceived affordance of the hospital ward. This result would mean that, by basically making the environment more playful, the environments can contribute to the health of patients. Since children generally prefer loose play items, the use of loose play items in healthcare interiors thus seems a straightforward and effective way to promote the patients' recovery.

The bound of contention here will be that the findings of such an experiment cannot be translated into actual healthcare settings. There is evidence available, though, that photograph can accurately simulate real environments and such studies show results similar to field experiments [10]. Moreover, if exposure to an imaginary hospitalization and a photo of a hospital ward with play is already capable of generating such a clear effect, this may be very promising for actual exposure of hospitalized patients to indoor loose play items. Furthermore, even if these effects only seemed in fairness to real healthcare settings, such a simple and low-cost mediation may well be highly cost-effective.

5 CONCLUSION

Looking at the positive effect of features in the environment that can influence healing of patients, children wellbeing has become really important in hospital setting. As such, this study confirms the stress-reducing properties of loose elements in the built healthcare environment. Although, most studies were not scientifically proven, it sheds light on the underlying features causing this stress-reduction. This experiment indicates that the stress-reducing effects of nature interventions to children in the built healthcare environment are the result of a higher level of perceived affordances of such environments.

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