Mental and behavioral health settings: Importance & effectiveness of environmental qualities & features as perceived by staff

Mardelle McCuskey Shepley [a], [*], Angela Watson [b], Francis Pitts [c], Anne Garrity [b], Elizabeth Spelman [b], Andrea Fronsman [a], Janhawi Kelkar [a]

[a] Cornell University, Ithaca, NY, USA
[b] Shepley Bulfinch, Boston, MA, USA
[c] Architecture+, Troy, NY, USA

ABSTRACT

This paper describes research on the design of behavioral and mental health facilities. Using input from clinical staff, the purpose of the study was four-fold: to develop and test a tool for the evaluation of mental and behavioral health (MBH) facilities, to evaluate the importance and effectiveness of specific environmental qualities and features, to generate design guidelines for MBH facilities, and to make recommendations for future research. A draft version of a tool that was intended to measure the importance and effectiveness of environmental qualities and features in MBH facilities was developed using a multi-methods approach. This survey, the Psychiatric Staff Environmental Design (PSED) tool, was distributed to psychiatric nursing organization members (N = 134). The researchers determined that the PSED was suitable for future research with minor modifications. Other findings included staff support for private patient rooms, staff recognition of the critical role of positive distraction, and the importance of aesthetics.

© 2017 Elsevier Ltd. All rights reserved.

Providing appropriate physical environments for patients and staff in mental and behavioral health (MBH) facilities is a critical contemporary issue (Papoulias, Csipke, Rose, McKellar, & Wykes, 2014). Although the need to support these populations is clear and new facilities are being developed, research to inform the design process is limited (Chrysikou, 2013; Ulrich, Bogren & Lundin, 2014). Studies on non-psychiatric acute care settings are more common (e.g., Chaudhury, Mahmood, & Valente, 2009), but the operational goals of these settings are different from MBH facilities relative to patient length of stay, delivery of care, medication and treatment protocols and staff-patient interaction. Fortunately, the emergent use of evidence-based design strategies in healthcare settings has opened the door for dialogue and research.

This paper describes the development and testing of a survey on mental and behavioral health (MBH) environments. Mental health and behavioral health are terms that are often used interchangeably (Torres & Estrine, 2015). The U.S. Department of Health & Human Services (1999) describes mental health as a condition

demonstrating "successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and an ability to adapt to change and to cope with adversity." Torres and Estrine (2015) define behavioral health as mental, emotional and physical states influenced by individual choices. For this study. the ambiguity in definitions suggested coupling the terms to cover a spectrum of integrated conditions.

While several instruments have been used to evaluate patient and staff experiences in mental and behavioral health (MBH) facilities, the scope of these tools and a focus on the development of content is often limited. Predecessor tools are helpful regarding specific topics such as safety (e.g., The Safety Risk Assessment (Center for Health Design, 2015) and the Mental Health Environment of Care Checklist (Watts et al., 2012)), or specific building typologies such as substance abuse (e.g., Timko, 1996). Others address physical healthcare environments more broadly (e.g., NHS Estates, 2008) or deal with the physical environment tangentially relative to the psychosocial and operational environment (e.g., Moos & Houts, 1968; Rice, Berger, Klett, Sewall, & Lemkau, 1963). However, to our knowledge no tool has been developed that seeks to address the full range of important MBH physical environmental issues. The tool described in this paper overcomes the limitations of other tools by identifying the spectrum of critical topics while

* Corresponding author. Department of Design & Environmental Analysis, 3429 Martha Van Rensselaer Hall, Cornell University, Ithaca, NY, 14853, USA.
E-mail address: mshepley@cornell.edu (M.M. Shepley).

maintaining focus on the MBH physical environment.

As this research represents the exploration and development of a new tool, staff, rather than patients, were selected as participants. This approach allowed us to avoid overburdening vulnerable psychiatric patients prior to thoroughly testing the tool. Additionally, we decided to focus on clinical staff, rather than administrators, due to their daily contact with patients and greater familiarity with patient perceptions. Design researchers have previously studied the relationship between the MBH environment and staff behavior and perceptions, particularly in the context of pre- and post-occupancy evaluation (e.g., Devlin, 1992; Tyson, Lambert, & Beattie 2002), but the research is limited.

Research on the parallels between staff and patient perceptions regarding healthcare environments vary in their outcomes. Some researchers have found that staff provide more positive evaluations of psychiatric settings (Rossberg & Friis, 2004; Schjødt, Middelboe, Mortensen, & Gjerris, 2003). However, according to Curtis, Gesler, Fabian, Francis, and Priebe (2007), patients and staff make similarly positive appraisals of environmental qualities such as lighting, access to nature, availability of private spaces, and a sense of 'homeliness.' Overall, we did not encounter research that suggested widely disparate perceptions between these two populations.

This study explored staff perceptions along three lines of inquiry: 1) how important are the specific environmental features and qualities described in the survey (a means of validating the survey content), 2) how effectively are these features provided in existing facilities, and 3) what characteristics are most appropriate in supporting desired goals?

1. Literature review

The following literature review was generated to formulate the content for a survey and is based on a summary that was published in 2013 (Shepley et al., 2013) and updated in 2016 for the purposes of this project. The importance of these topics to MBH facility design was confirmed via a study involving 19 expert interviews (Shepley et al., 2016). In the following summary, the design strategies are sorted into two categories: design concepts that were part of the previous literature review and supported by the interviewees, and additional topics that were raised by multiple participants during the interview process. The former are summarized in Table 1 in order of the percentage of interviewees who endorsed the design strategy as a critical component of a future survey.

1.1. Design topics from the literature review

Sixteen design topics were identified in the early literature review and reaffirmed for inclusion in the survey during the interviews (Shepley et al., 2016). Private rooms, daylighting, indoor/outdoor therapy and deinstitutionalized environment were recognized by all 19 of the interviewees as important considerations for evaluating MBH environments. Ninety-three to 94% of these experts supported the topics of: nurse station observation, seating mix and visual and physical access to nature. Autonomy/spontaneity, well-maintained environment, orderly and organized, damage-resistant, furnishings, and social interaction were supported by 83%—88% of interviewees. The remaining categories were supported by 64%—77% of respondents; those topics in descending order were: staff support, suicide resistance, staff safety and smoking rooms (See Table 1.). Staff support covers topics such as amenities for staff respite. Suicide resistance refers to environmental features that impede ligature. Environmental interventions that support staff safety include places that allow supervision from other staff. Smoking rooms are spaces dedicated for use by patients who wish to smoke.

1.2. Design topics raised by interviewees

Several additional survey topics were raised by interviewees and are described in the following section in three clusters: aesthetics and comfort, noise and facility/staff demographics.

1.2.1. Aesthetics and comfort

Fout topics fell under the umbrella of aesthetics and comfort: positive distraction, comfortable furniture, appropriate electric lighting, and comfortable restroom facilities. Maslow and Mintz (1956) found ratings in beautiful spaces to be more positive. The impact of aesthetics on mood, behavior and preferences has been examined by researchers and, according to Chatterjee and Vartanian (2014), may have biological origins.

The major features associated with positive distraction include views of nature, art, music, interactive technology and social interaction (Shepley, 2006). While all of these items have been applied to other healthcare settings, the only studies that specifically mention positive distraction in MBH facilities are those by Ulrich et al. (2014) and Nanda, Eisen, Zadeh, and Owen (2011). Ulrich and colleagues included elements of positive distraction as part of a bundle of design interventions in a study on incidents of aggression. Nanda et al. (2011) found that the presence of nature art reduced agitation and anxiety in a psychiatric lounge.

Regarding the design of furniture and furnishings, more than 80% of staff in a substance abuse recovery facility felt comfortable lounge furniture supported treatment goals (Grosenick & Hatmaker, 2000), and introduction of a comfort room with a reclining chair resulted in less need for seclusion and restraint (Cummings, Grandfield, & Coldwell, 2010). Comfortable furniture also has been found to be important to the psychological support of patients in other healthcare settings (Ingham & Spencer, 1997; Shepley et al., 1999).

The aesthetic design of electrical lighting also appears to play a role in the MBH environment experience. Researchers at a state geriatric psychiatric facility found that improved lighting, in combination with other modifications, increased positive behavioral outcomes (Bakos, Bozic, Chapin, & Neuman, 1980). In this review, we found no research on MBH electric lighting alone, although, in general, designers suggest avoiding institutional lighting fixtures and homogeneous, undifferentiated light distribution.

Lastly, interviewees recommended that we address single occupancy bathrooms as a means of achieving comfort through personal privacy. Apart from increased costs, the debate around private bathrooms centers on privacy versus patient supervision. The importance of opportunity for privacy has been generally acknowledged (Mooradian, 2009). However, Novotna, Urbanoski, and Rush (2011), report that staff caution against increased privacy as it may obstruct supervision and make it more difficult to prevent adverse events such as self-injury. One study reports that 37% of the total suicides of patients who were part of observational protocols took place in the bathroom (Meehan et al., 2006), although it was not reported whether the bathroom was shared or private. Shared bathrooms have been found to be the location of suicide attempts in other research (Shepley, 1995).

1.2.2. Noise

Asking patients to assess whether their unit is noisy is a question that has been included in at least one evaluation tool (i.e., Rice et al., 1963), however, to our knowledge, an evaluation of the impact in MBH settings has not been done. The most closely related study, which took place in a school setting, was an evaluation of the impact of noise on children with autism (Kanakri, Shepley, Tassinary, Varni, & Fawaz, 2016). However, high noise levels have been documented. Holmberg and Coon (1999) measured sound