Research Essay: Design Improvement of Diabetes Clinics

Introduction:

Findings discussed within this chapter are linked back to the purpose of the study which includes the design improvement of diabetes clinics. Such improvements can be made by addressing current issues with health-care environments, providing interactive educational experiences and enhancing the users' overall well-being within the built environment. This chapter will discuss the research questions and the findings from the data collection.

Description of Participants:

As discussed in chapter three, the findings were collected from the use of interviews, observations and field notes. Existing clinics located within the city and outside of the city were observed to gain a better understanding of current diabetes environments. In addition, the selection of interviewees was carefully considered to gain a wider perspective on the research study topic. The identities of the participants and the sites visited will remain anonymous and will be referred to in code names (see Figure 1). Two of the interviewees, P1 and P2, were from a health-care demographic and gave insight into patients and caregivers living with diabetes. Moreover, the other interviewee, P3, gave insight into the interior design field, specifically within the health-care industry. In the process of recruiting participants, it took me three weeks to find people willing to participate. The participants that agreed to partake in the study responded within a week and soon after arranged a phone call or an in-person interview. The participants who agreed to participate provided knowledge about the research topic and much more useful information that will assist the study in the future design process. Overall, the findings gathered revealed that environments and quality of current diabetes facilities need improvements to better accommodate the users within the space. Specifically, most clinics are geared towards adults and are lacking interactive educational tools to help young individuals become independent managers of their own health.

Findings:

The following presents the analysis of data and the discovery of themes reported through the interview questions. The findings describe the health-care industry's administrative staff perspectives on educational diabetes facilities and their opinion on how to improve patient and caregiver's education. In addition, the findings describe the interior design industry member's perspective on the design of health-care environments. The findings also describe and analyze the information that emerged from two different sets of interview questions, both containing eight to nine questions. These questions helped guide the interview and allowed for room for the interviewee to expand on each question.

Three main themes were discovered within each interview which included user's experience, diabetes education/care and healthcare design. Therefore, the interview questions will be discussed in relation to each theme and describe the information each participant provided for the study.

User Experience

Analysis of P1 and P2:

The interviewees were asked questions based on users' experiences within health-care environments, specifically educational diabetes facilities. Each interviewee's response differed based on factors related to their background knowledge and expertise. The questions were generally geared towards their perceptions of user experience created within diabetes facilities and how elements such as privacy, technology and spatial layout affect the users' experience in a positive or negative way.

Questions six and seven, located in Appendix C, are questions that assisted the study by gathering information on the topic of technology and the role it plays in diabetes facilities. The findings for these questions added to the information gathered in the literature analysis. Existing technology, such as insulin pumps, were both discussed by P1 and P2. These pumps were described to be devices that control the levels of insulin being administered to the patient. Sensor technologies were also discussed and described as small devices that remain attached to the diabetic to scan their sugar level. Specifically, P2 gives the example of a device called "G6" which monitors blood sugar levels throughout the day. This device can be linked to patients' phones to help themselves keep track and also share information with family member's phones. These devices were described to be beneficial to diabetics' daily experiences because they did not need to prick themselves every day to test their sugar levels. Both interviewees said that these devices have helped boost confidence in the patients and help them feel normal. Ultimately, a simple touch of a button allowed them to gain access to their health information.

The findings gathered about future emerging technologies were a surprise to the study as this information was not discovered through literature. According to both interviewees, digital technology is shaping the way patients interact with their health-care providers. Both P1 and P2 described that patients are more frequently not coming into the facilities due to the internet. They also explained, based on their own knowledge, that the internet is becoming a place where most patients go to gain knowledge and get answers to their questions. Thus, doctors, nurses and specialists are now conducting online consultations. Furthermore, P1 explains that based on their own experience they see patients are less frequently wanting to attend classes. P1 explains that the classes have become less useful to the patients because the internet provides an abundance of information. Thus, these findings suggest that the educational experience within current diabetes facilities is not effectively engaging users to learn. The future of the educational diabetes facility should encourage and invite users to engage with the space by creating an experience that will drive users to revisit the space. This will potentially shift the user's perspective to avoid solely visiting the internet for help.

Questions seven and eight, located in Appendix C, asked for the interviewee to explain, based on their own observations, the elements working and not working within their current healthcare environment. The findings discovered for these questions were surprising because both participants had experience working within a co-clinic. Both participants described diabetes as a multifactorial disease, which is a disease that involves many different health factors. They both believed that working in a co-clinic with different specialists in the health-care field helped to connect their patients to other specialists depending on their healthcare needs. An example of

this was given by P1, who discussed her own patient who was diagnosed with type 2 diabetes and was experiencing heart complications. The cardiac clinic was located on the same floor of the facility which allowed P1 to connect with specialists in that field to help her patient's needs. Moreover, through this co-clinic design, the users' experience can become more advantageous because it allows patients to connect with other health advisors and gain different education on their health. This new finding was not found in the literature review and was not expected to be viewed as a positive factor due to spatial limits and layout.

While the co-clinic design has many positive effects on the user's experience, findings also showed that it can cause negative effects due to the lack of space. P1 and P2 both explained, in question nine of the interview guide, that there was a lack of space for the diabetes facilities. This, in turn, caused storage limits, privacy issues and lack of permanent office spaces. Due to the space being shared, P2 explained that the offices were also shared amongst other specialists throughout the week. In addition, P1 explains that CR is small in size and only allows for the occupancy of four people at a time. P1 also described how the lack of privacy within the space made it difficult for two consultations to occur because one could hear the other conversations taking place in the next room. The lack of space and privacy are key factors that can affect a user's experience, which can ultimately alter the user's experience in a negative way. These findings did not come as a surprise as the literature discussed above showcases that attending clinics often evoked feelings of stress, anger and anxiety (Lesley, L., Eddy, D., Channon, S., McNamara, R., Robling, M., & Gregory, J. W. 2015, p.58). Ultimately, these findings revealed the importance of privacy and spatial planning for different health-care specialists in a space. These factors can play a key role in the positive or negative effects on the user's overall experience within the educational diabetes facility.

Analysis of P3:

P3 gave answers based on their background and expertise in the interior design field. The guiding interview questions, located in Appendix D, asked general questions about users' experiences within health-care environments. Topics such as wayfinding, technology and the positive/negative effects a healthcare environment can have on users were discussed.

Questions two and three, as stated in Appendix D, are questions that assisted the study by gathering information on the topic that discusses the positive and negative effects of healthcare environments. The findings to these questions added to the information gathered in the literature analysis in chapter 2. P3 agreed that health-care environments can cause negative experiences for users if they are not thoroughly thought out through the lens of the user. P3 gave examples such as crowded furniture, lack of privacy or sense of personal space, lack of positive distractions and/or views, brightly lit spaces and poor control over sound are all factors that can contribute to a user's negative experience. In contrast, P3 also describes the many ways health-care environments can create a positive effect on the user experience. An example of this is by providing spaces and amenities, such as water bottle filling and snack stations. P3 states that these stations are important to the overall user experience because they provide users with the freedom to eat and drink when they please. Spatial planning, in conjunction with inclusive wayfinding strategies, alters the user's experience by becoming a lot less stressful or overwhelming. Furthermore, P3 describes the importance of providing users with different seating options, varying in size to be inclusive for all users. Providing users with varying positive distractions can also allow the users to distract themselves if negative emotions arise. Positive

distractions can include views of nature, artwork, technology and more.

In addition, questions four and seven, as shown in Appendix D, touch upon the topics of wayfinding and technology. P3 explains that signage is a key element that is essential for all health-care environments and that nowadays good signage is more carefully considered and designed within the built environment. With careful consideration of fonts, contrast, pictograms, accessible mounting heights and braille lettering, wayfinding design is becoming more inclusive. P3 believes that the most user-friendly and inclusive wayfinding systems are when good signage is accompanied by landmarking through art and interior design. In addition, technology is also a tool that affects and shapes the user's experience. P3 discusses how more healthcare organizations are going digital through the use of artificial intelligence. Artificial intelligence is being introduced to inform many aspects of healthcare delivery including how healthcare spaces are designed. P3 explains the example of virtual patient encounters that assist with wayfinding. Therefore, artificial intelligence is becoming the driving force for the future of health-care design creating more digital experiences that promote efficient health-care services.

Overall, these findings revealed the important role of some interior design elements and the bad or good effects they can have on the user's experience. Findings also revealed that key topics, such as wayfinding and technology, inform the built environment and play a critical role in the user's experience. The analysis of these findings has helped the research study by giving insight through an interior design lens. This, in turn, will help shape the future design of the educational diabetes facility to enhance the overall wellbeing of the users.