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**Important considerations for creative professionals when designing for
users with mental health issues**

by

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Abstract

Creative professionals who design products, entertainment, application, websites, and even marketing are gradually beginning to realize the importance of evoking emotions and personalized communication to attract users' attention and improve the satisfying experience. Emotional-based design can profoundly influence overall user experience since emotions affect decision making, attention, memory, and meaning. Designers often apply emotional design by two main approaches. The first is based on the modification of objects' aesthetic appearances such as color, shape, and texture. The other focuses on engaging interaction mostly based on technology development (Van Gorp, Adams 2012). Both of these factors have significant effects on people especially for those who have mental health issues. The author bridges scholarship in emotional design and mental health science to empower designers in supporting people with mental health issues.

Key Words

Emotional Design; Mental Health Issue; Touch; Vision; Sound

1. Introduction

Mental illness is a disease that affects one's thoughts, feeling, and emotions. These conditions may affect a person's ability to interact with others and daily activity. Everyone has a different experience even with the same diagnosis. Every year, there are one of fifth of adults experience mental issues and one in seventeen people suffering from serious mental illness, such as bipolar disorder or schizophrenia (NAMI). In addition to patients' own pain, family members, friends, and communities can also be influenced.

Mental health is not the result of one event. There are many related reasons such as heredity, environment, and lifestyle. Work stress and unhealthy family life are the main facts to increase the possibility of mental illness. The burden of mental illness continues to increase in all countries of the world.

Nowadays, more and more people begin to pay attention to the problem of mental issues. People become more friendly to mental patients, social organizations and government agencies also put more investment to improve the psychological health care system. Designer also take this opportunity to exert their expertise. They combine modern technology with psychotherapy to create a more accessible treatment for more people.

This paper explains how to apply emotional design method in the design field and discusses some significant factors when designing products for people with mental issues. This information will provide designers some suggestions as well as guidance for designing for mental issues.

2. Inter-relation between physiology and psychology

Physical health issues are considerably more usual for people with chronic mental problems than normal people. Some studies have pointed out that patients with mental disorders die on average 25 years earlier than expected (Parks, Svendsen, Singer, and Forti 2006). Bedeviled by both psychological and physiological issues, the quality, as well as the quantity of life, are reduced for people with mental illness. The common explanation of their physical health problems is the combination of patient factors, side effects of medication and lifestyle factors (C. Simon 2014). Thus it can be seen that psychology have a lot of influence on physiology.

Over the years, to reduce the sides effects of medicines and improve the quantity of life for mental illness patients, increasing people use complementary and alternative methods (such as physical exercise, meditation, and yoga) combining with traditional therapies to help with recovery.

Physical exercise has consistently been found to improve mood and well-being following a single exercise session. Recently, many researchers believe that exercise training is one intervention treatment that may act in two ways, reducing symptoms in people with depression and decreasing the risk of depressive episodes in free from depression (Brendon and R. Simon 2018). Therefore, the improvement of physiological health can benefit mental health widely.

Mindfulness, the maintenance of a moment-by-moment awareness of our thought, is widely used during the therapy. Mindfulness technique is useful in dealing with problems relevant to emotion dysregulation, including various types of avoidance behaviours, numbing, and so on (Follette, Palm, and Pearson 2006).

Concentration is the foundation of meditation and the cornerstone of mindfulness (Pollak 2014). It can serve as an anchor every time that people are distressed or overwhelmed. Usually, mindfulness starts with a comfortable body posture and breathing exercise. Deep breathing is one of the best approaches to reduce stress and prepare for concentration. This is because that when breathing deeply, it transmits a signal to the brain to relax. The brain then sends this message back to the entire body (Michigan Medicine 2018).

Mental illness is a complicated illness which is associated with distress or problems functioning in work, social or family activities. For designers who work on any projects which target users are those with mental issues, starting with researching on complementary and alternative therapy might be an easy way. In addition, though those non-traditional therapies have been widely accepted, some scholars believe that they cannot replace the traditional treatment and might cause other problems. As a result, checking with doctors and keeping touch with users are quite essential.

3. Design and emotions

3.1 Relationship between design and emotion

Emotion has a paramount effect in human daily lives (Damasio 1994). It builds experience and makes lives colorful. When we use products, we experience emotional responses that are no different from the responses we experience with real people (Desment 2002). As time passes, the emotional signal that people perceive in both human and products can be identified as “personality traits” (Van Gorp 2006). However, unlike the personality traits of human beings, the personality traits of products are given by designers or even users, especially for those traits do not intend to be given during design. The personality traits of products decided by its appearance, feeling, emotion tone, which is known to attract consumers with certain tastes. They play powerful roles in design and even determines the success or failure of the products.

3.2 Why design for emotion

All design is emotional design (Van Grop 2012). There are few differences between physical products, websites, software applications, and services, as long as anything building a complex social relationship with users and having their own personality traits. Emotion dominates the public’s choice and only emotional design can be conformable to public taste, keep up with the trend and reach a destination for business. To achieve the business goal and meet the needs of users, designers must prioritize emotional needs: identifying the most significant emotional considerations for the context of use. In a word, if you want your products to be successful in the market, it must be emotional.

Moreover, mental health, as the foundation for emotions, learning, thinking, resilience, communication, and

self-esteem, is the key element to relationships, emotional and personal well-being as well as has huge social influences. People suffering from mental illness is a large group of patients being more special and sensitive. Designing for this group of people, designers should pay more attention to the decision of emotional design.

4. Factors to be considered when designing for people with mental issues

4.1 Touch

From the time of infancy, touch is our main way to explore the outer world which plays a key role in social interaction and emotional development. It demands a close interaction that able to change the affection and evoke stronger emotions.

There are two different tactile experience: object perception via touch and social touch (Uğur S, 2013).

Touch is a complicated sensorial experience having a variety of forms, like pressure, hardness, temperature, flexible, weight and vibration. These features are perceived by two kinds of activities: passive and active touch. Passive touch perceives properties passively, such as feeling temperature and pressure, while hand actively moves in order to figure out other properties with active touch, such as texture and shape (Gibson 1962). These two activities do not always work independently. The combination of active and passive touch is called haptic touch (Lederman and Klatzky 2009).

Social touch is ones that playing the main role in social interaction between each human. As an intimate and immediate way of emotional communication, touch plays a critical role in interpersonal relationships (Thayer 1986). The touch from mother to infant represents comfort; the touch between lovers may represent love or even sexual desire; the touch between co-workers may show trust or encouragement. The meaning of social touch is various which is determined by the type of touch (e.g., stroking, rubbing, patting) and the social relationship.

Touch also functions as a therapeutic element to treat psychological disorders and decrease pressure.

Affection touch, such as massage or hug can produce oxytocin increasing while stress-related adrenalin hormones reduction (Light, Grewen, and Amico 2005). For example, there are a lot of people who want to reach deep sleeping and rely on weighted blankets (Fig.1). Weighted blankets use the technique of deep touch pressure therapy—deep pressure generates relaxing and calming (Grandin 1992). It is the same thing with hugging a baby, they will be more likely to fall asleep for feeling safe and calm. That is, the personality trait of weighted blankets is similar to the personality trait of intimate partners. In Heavy blanket and vest can prevent panic attacks and help people to continue normal activities (Champagne and Mullen 2005).



Fig.1 Weighted Blanket

Not only physical touch could help people release stress but also imagined touch can reduce stress. A lot of people spend short or long periods of time away from their significant others (e.g., parents, partners) when they travel or work. In this situation, individuals cannot receive touch support, but they may benefit from recalling and imaging touch support from their partners (Jakubiak and Feeney 2016). With the help of virtual reality technology, imagined touch may play a greater role for people with mental issues.

4.2 Vision

Visual perception of an object and its impacts on emotional appraisal depend on different visual characteristics: such as color, shape, or size (Uğur S, 2013).

Color can arouse strong emotional responses. Levy (1984) suggested that warm colors could evoke arousal, while cold colors could reduce it. Boyatsiz and Varghese (1994) found that light colors (such as yellow and blue) were related to positive emotions and dark colors (such as black and grey) were connected with negative emotions.

Color psychology, also known as “the psychological effects of color”, refers to a series of associations, affective, cognition, and behavioral responses related to specific colors (Van Wagner, 2009). Even though medical science may avoid the idea of color therapy and “color therapy” is not a venerated term in the medical literature, it does admit impacts and actions in the field of the psychic. Kopacz claims that “Biological consequence of color responses can be a valuable tool in health management” for the treatment of various kinds of ailments. Groups of people, such as marketers, advertisers, and graphic artists, also believe that color influences consumer behaviors (Paul and Okan 2011).

While recently, there are some questions in the negative point of view about color psychology. Zena retorted that a quantity of sources supporting color psychology is frequently based on anecdotal evidence and many imply that color-related claims sound empirical but loose medical science support. For instance, Kopacz mentions the limits of evidential support for his claims but brings the work of other eight designers,

writers, and psychologists. However, the previous remarks have been outdated and superseded. Besides, no matter the depth and breadth of contemporary empirical researches focusing on the associations between human and color, the findings of those studies are rare (O'Connor 2011). Therefore, as a designer, it is better to check with a psychologist or medical practitioner before applying any color therapy or color psychology information from magazine articles, Internet websites or even seemingly authoritative studies.

Shape is another important visual factor that influences emotions. There are already many pioneers having deep researched in this field and made the conclusion that unstable and sharp shapes (such as “V” shape) were related negative emotions and round and curved shapes could evoke positive emotions (Larson et al. 2007; Pavlova et al. 2005; Aronoff et al. 1988).

Color, shape, size, all of those visual factors do not act independently but interact with each other and work together on emotions of humans. What designers should do is not only choose visual factors wisely by following medical practitioners suggestions but also learn their target audiences cause consumers' preferences depend on many factors including age, gender, and culture or even their life experiences. Also, it is helpful to test the product with representatives of target audiences.

4.3 Sound

Sound is one of the significant incentives that can evoke emotions. For premature infants, maternal sound shows the potential benefits for heart rate by improving autonomic stability and providing a more relaxing environment (Rand and Amir 2014). Some researchers found that rhythm perception is helpful for

regulating the psychological state and inducing changes in pulse, breath and heart rate. Roessler (1969)

found that intensity sound can accelerate the heart rate. Moravscik (2002) claims that short scale rhythm is the time frame that corresponds to the human heart rate.

From the drumbeats of our ancient ancestors to pop music of today, music is an integral part of the human experience. In ancient times, people used drumbeats to encourage soldiers going to the battlefield. Now, people use music to assist in the treatment of mental illness. Music offers an elegant and simple method to cure anhedonia, the loss of happiness in everyday lives. It has been broadly applied to treat a number of mental disorders, such as schizophrenia, bipolar disorder, and depression. Usually, it works in combination with other forms of therapies (Castillo-Pérez et al. 2010).

For the helpfulness of music therapy, many designers have begun to apply it to their products.

Kenneth(2015) created a music therapy platform called synchrony that helps children with autism and their parents build intimacy and improve understanding of each other through improvised music play. Parents and child can play together in a shares space, communicate nonverbally by creating music and achieve therapeutic goals at the same time. (fig.2)



Fig.2 Synchrony

Participation in music making is one essential factor for the therapeutic effort (Bruscia 1998). Many designers contribute a lot to optimizing instruments in order to facilitate therapy clients with special limitations, such as disabler and deformity. Besides, with the development of smart devices, improving the accessibility of music therapy constitutes a majority effort in music therapy equipment design. Technology applications and electronic instruments might become the main solution for music therapy practice.

5. Technology leads the future of emotional design

Digital technologies, including the Internet, mobile applications, and sensors have the potential to improve the accessibility of health interventions. It is expected that these technologies will raise patient outcomes by increasing the reach of existing treatment and by using new technologies to measure behaviors. In particular, the growth of mobile phone applications for health has increased quickly and provided opportunities to expand current traditional treatment relationships (Aguilera 2015).

Another benefit of digital technologies is that allowing multiple emotional design factors work together. Compared with traditional breathing training method based on audio CDs, current breathing training apps which combine sound and visualization together works better to help people adjust breathing (Chittaro and Siono 2014). Virtual Reality is another application of technologies which bring vision, sound, and touch together. VR technology could build a realistic scene (such as the trigger scenario of PTSD patients) in a safer environment. By exposed to those triggers, patients will become more used to the triggers of their problem (Mishkind et al. 2017).

Even though the application of technologies shows many benefits for psychiatric treatment, there are still many problems worthy of attention. Some people worry about the intrusiveness and the invasion of privacy (Proudfoot et al. 2010). Besides, despite the popularity of technology, there are still barriers to access them (Aguilera 2015). For example, lower acceptance and hard accessibility of smart devices may exist between the elderly group. Technologies are not panacea, but they are powerful tools to improve the impact of interventions.

6. Conclusion

Many people suffer from mental illness and they are a sensitive group of people. When Designing for this group of people, there are many factors that need to be considered and emotional design is a good way to approach. Touch, Vision, and Sound, these three are the most influential factors when designing for emotions. Nowadays, applying technologies to emotion design become a popular trend. However, there are still many problems through the application of technologies. As a result, for designers, it is better to check with doctors before any decision making. Besides, rigorous customer research and quantities of user testing are the promises of the design succeeded.

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