



Trauma-Informed Design Approach For Women with PTSD Recovery Interior Design

Michelle Carissa Chayadi¹, Silvia Meliana², Ulli Aulia Ruki³

¹ Interior Design Department, School of Design, Bina Nusantara University, Jakarta, Indonesia 11480, ² Interior Design Department, School of Design, Bina Nusantara University, Jakarta, Indonesia 11480, ³ Interior Design Department, School of Design, Bina Nusantara University, Jakarta, Indonesia 11480

michelle.chayadi@binus.ac.id

uruki@binus.ac.id
silvia.meliana@binus.ac.id

Abstract.

Women are more prone to PTSD than men. The quality of life of PTSD patients affects their cognition and behavior, reducing life function, especially in women. Despite mental health awareness, few Indonesian hospitals address PTSD. Trauma-influenced reading, interviews, and observation studies can help PTSD women heal at home. The new trauma-considered design is unclear. A full patient history is needed for trauma-informed care. Trauma-informed design focuses on psychology and culture. Community-focused, secure, and inviting locations are crucial for a successful interior design PTSD Recovery Female-focused trauma center. Psychology, physiology, and culture must be considered in all physical environment decisions, including trauma-informed design and security. These include nature views, different lighting, home finishing, self-sufficiency, and control. TID settings must meet human needs in the interior activity and facility its include consideration of color, shapes that could be a therapeutic design.

Keywords: Interior, women Trauma center, post-traumatic stress disorder (PTSD), trauma-informed design (TID) approach.

1. Introduction

Post-traumatic stress disorder (PTSD) is a chronic mental health disorder that may develop after a person experiences a traumatic event [1]. Anyone can experience

PTSD regardless of ethnicity, race, or economic level [2]. Everyone has the potential to suffer from PTSD. Women are known to be twice as likely to experience PTSD because more traumatic events are likely to occur to women in everyday life [3]. People with PTSD tend to experience some difficulties in living their daily lives. They easily feel afraid and threatened, have difficulty regulating their emotions, tend to be more sensitive, find it hard to focus, experience sleep disturbances or nightmares, and have eating disorders [4]. *Komisi Nasional Perempuan* states that every year there are more than 250,000 cases of violence that occur to women in Indonesia, possibly leading to PTSD in victims [5]. *Komisi Nasional Perempuan* notes that 95% of victims of rape cases suffer from PTSD [5].

Even though awareness of the importance of mental health is currently quite good in society, the lack of knowledge about support services makes sufferers confused about which health facility to seek treatment for [6-9]. Hospital psychiatric services usually only focus on psychotherapy and medication, but not all PTSD sufferers can recover simply by undergoing psychotherapy treatment. In addition, institutional mental health facilities such as hospitals are less desirable because they put pressure on sufferers and are not good enough at handling trauma recovery because not all staff and nurses are educated to serve trauma patients. No recovery facilities in Indonesia specifically facilitate trauma and PTSD recovery activities, especially for women [6-9].

“Interior Design for Post-traumatic Stress Disorder Recovery for Women Using a Trauma-Informed Design Approach” was formed, presenting a healing environment and using a trauma-informed design (TID) approach in design elements to support the PTSD recovery process in women. The healing environment combines elements of nature, human senses, and psychology in the environment to support well-being and recovery [10]. 40% of the human recovery process is determined by environmental factors, both artificial and natural [11]. Natural and artificial natural elements can evoke positive feelings in the body, reduce stress and fatigue levels, and encourage rapid recovery for living things around them [12-13].

Trauma-informed design is a design concept that in its design, makes decisions based on the principles of trauma care. Safety, respect, connection and community, control, dignity, and joy, are influenced by the goals of the Trauma-Informed Design approach applied to interior design [14]. Ethics of care is an ethical system that is concerned with human relationships and needs. Its goal is to create harmony, preserving and enriching relationships, Ethics of care attempt to solve problems through human relationships and compassion to decide and avoid suffering [15]. The ethics of care is closely related to women because women are more sensitive to feelings and concerns [16]. In psychotherapy, the ethics of care emphasize caring and empathy, such as listening to and responding to clients that lead to a beneficial therapeutic relationship [17].

The presence of this design is expected to ease women with PTSD to get services and carry out recovery activities with the support of adequate facilities, as well as

being able to provide education to the public about trauma, PTSD, and how to handle it.

2. Methodology

Post-traumatic Stress Disorder Recovery for Women Using a Trauma-Informed Design Approach" was carried out through research stages through qualitative data collection and design thinking process. Data collection will be carried out through literature studies, observations, and interviews.

Literature studies were conducted by reviewing books, journals, theses, or official sources in online media that related to PTSD, women with PTSD, PTSD recovery interior design, ethics of care, and trauma-informed design approach. This research conducted interviews with four psychologists and psychiatrists who actually play a role in psychological recovery and mental health to obtain further information and understanding about PTSD and the conditions and needs of existing facilities. The interview results were used as a reference in the design.

Observations were made by conducting field surveys through direct visits and web observations at places related to design. Due to the absence of a PTSD recovery centre currently in Indonesia, the field survey was conducted in places that have similar facilities to PTSD recovery centres, which are psychology clinics, yoga studios, and welfare institutions. Meanwhile, web survey observations focused on obtaining information about PTSD recovery centres which operated outside Indonesia.

The design thinking process of this research is divided into 4 stages, empathize, define, ideate, and prototype.

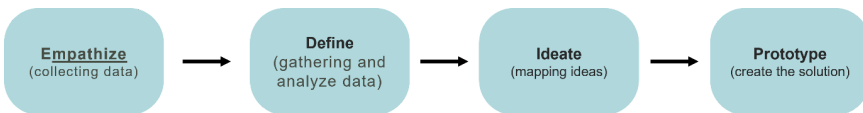


Fig 1. schematic of the design thinking process.

2.1 **Empathize**

The first step of design thinking is to collect information about the users of the design. The designer observes the users' behaviour, issues, activities, needs, habits, and psychological conditions. Observation of current facilities, space, design, TID, and healing environment is also included in this stage.

2.2 **Define**

At this stage, all the information obtained is analyzed so that the main problems to be solved in the design can be mapped. Macro and micro analysis of design buildings, user analysis, analysis of the application of TID in health facilities, and analysis of the current condition of facilities in Indonesia and abroad is carried out through all qualitative data that has been collected previously.

2.3 **Ideate**

At the ideate stage, the designer maps out all the ideas that are elaborated from the problem points that have been mapped. In this design, ideation is done by mapping ideas using lotus blossom and mind mapping.

2.4 **Prototype**

The prototype is the final stage of the design thinking process, where the solution ideas obtained from mapping existing problems are implemented into the design elements of the recovery interior design of PTSD for women. In this design, the results implemented are based on the TID value, which aims to assist the recovery process for facility users.

3. **Result**

3.1 **User Analysis**

Users of the design are categorized into 4 user groups, namely clients, guests, therapists, staff, and nurses. Each user in the design has a different activity flow that affects the user flow in the design. User activities from the design are mostly meditation, yoga, massage therapy, individual therapy, group therapy, and buying medications to support their recovery process.

3.2 **Design Concept**

Determining the design concept began with mapping ideas using a lotus blossom as a medium to help the brainstorming process by elaborating 8 points related to the design: facilities, activities, trauma-informed design, environment, users, materials, colours, and interior of the design.



(a)

(b)

Fig 2. (a) lotus blossom; (b) mind map of design concept.

The design concept '*Kepak Asa Jiwa Tenteram*' was taken based on 7 things that are related to the design, which are trauma-informed design, design function, healing environment, PTSD, life, women, and recovery. '*Kepak Asa Jiwa Tenteram*' is inspired by TID values and the dove bird which means peace and hope [18]. Recovery is a struggling process for PTSD sufferers in which they try their best to recover through a series of sessions and activities, various emotions facing back painful feelings they had before. Just like a bird trying to flap its wings to fly, the recovery process requires hope, enthusiasm, peace, serenity, and a sense of security because it encourages self-disclosure which is the first step in the recovery process.

3.3 Ambiance

The space is designed by paying attention to the use of color, shape, facilities, as well as lighting, ventilation, and atmosphere in the design according to TID values, environmental healing, and care ethics of PTSD sufferers to build a hopeful and calming atmosphere that can evoke happiness for PTSD sufferers and support recovery process. A clean, bright, calming, natural, warm, and embracing space fulfills the value of peace of mind and hope from a trauma-informed design and healing environment, which is also in accordance with the design concept of "*Kepak Asa Jiwa Serene.*" Bright spaces provide a spacious room effect that could help PTSD sufferers who feel trapped in their thoughts to calm.

3.4 Shapes

The study of shapes is inspired by 'life' and 'doves.' Design elements inspired by the ups and downs and flow of life will be applied to the wall elements in the design entry area. The dove has the meaning of peace and hope. Inspired by the posture of a flying dove spreading its wings, symbolizing hope and freedom, the resulting design elements will be applied to signboard patterns, furniture shapes, partition patterns and laser cut patterns.

The concept of form in the entrance area illustrates that despite ups and downs, life goes on, and in the design the user can find peace and hope, which are expected to free them from trauma.

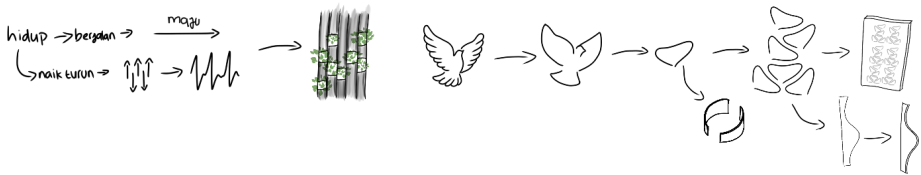


Fig 3. shape study

3.5 Color Scheme

The colors used in the design are taken based on color considerations from TID, healing environment, and women's colors. The healing environment contains natural colors as well as colors based on their effects on human psychology. Trauma-informed design has bright, natural, white, blue, and green colors, while the women's colors according to Hendy (2015) are light blue, pink, purple and gold. Based on these considerations, it is determined that the colors used in the design fall into 3 color categories, dominant, subdominant, and accent color [19].

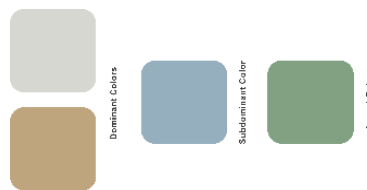


Fig 4. colors used in design.

The dominant color in the design uses brown and white bones. Brown is the color of the earth element that can give a feeling of being one with nature, warm and safe. White Bone is a white color that has a bit of yellow and gray color in it. White bone color means grounded, stable, and humble. The dominant color is mostly applied to the wall and ceiling elements in the design. Blue as a subdominant color symbolizes professionalism and honesty. It gives a calming, relaxing, and confidence effect to a person. In design, this color is applied to the furniture and some accents on the ceiling. Green as the accent color in the design is a natural color that gives a sense of relaxation, and freshness. It can also encourage one's empathy. Green color, which means healing is believed to reduce stress levels. This color is applied to the interactive area floor, and to the plants in the design.

3.6 Material and Sustainable Concept

The material used is non-slip, easy to clean, non-injury, non-toxic, has a natural texture and can muffle noise. The materials used in this design are vinyl with wood texture, wood terrazzo, terrazzo, homogeneous tiles, wall texture, Limestone, recyclaxUV artificial plants, recyclable synthetic rattan, HPL, and aluminum. The use of durable, eco-friendly materials, recycled materials, low VOC, non-toxic, and recyclable materials is to implement sustainable concepts in design. The use of terrazzo timber material aims to help reduce the amount of wood waste in the environment because Indonesia produces large amounts of wood waste which is then disposed of in rivers and causes water pollution [20]. Timber terrazzo is recycled material from small wood chips from factory waste which are then reprocessed into building materials.

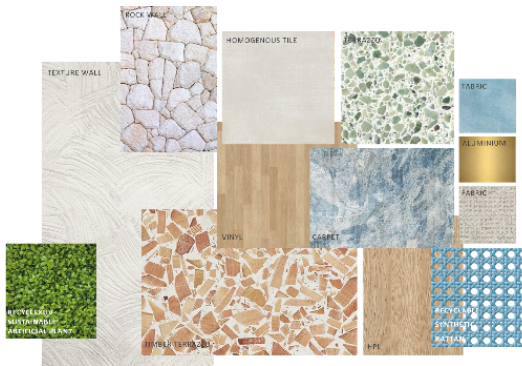


Fig 5. material board

Apart from materials, the electricity, ventilation, and lighting as well as smart systems in design reduces the use of electricity so it helps environmental sustainability.

3.7 Lighting Concept

The design uses natural lighting and artificial lighting. Natural lighting from the sun in the design is utilized through wall and ceiling openings and windows. Artificial lighting is used to illuminate areas which are less accessible to natural light. The design uses three types of artificial lighting. They are downlight, spotlight, and LED strips with a 3000-degree Kelvin temperature or also known as warm white light. In the therapy room, the artificial lighting used has a dimming system that allows the user to adjust the intensity of the light used. In addition to the lights placed on the ceiling, the design also uses wall lights for the lobby and consultation areas, while table lamps and standing lights are in the therapy room.

3.8 Ventilation Concept

Good ventilation supports the creation of good room thermal conditions. Ventilation in the design is divided into 2 types of ventilation, natural ventilation, and artificial ventilation. Natural ventilation is obtained through wall and ceiling voids, and window openings. Natural ventilation uses cross-ventilation and single ventilation systems. In design, cross-ventilation and single ventilation systems are used in public

and semi-public areas. The design also uses artificial ventilation using fans and air conditioners. Fans are used in public and semi-public areas to help the area reach natural ventilation in the room, while air conditioners are used in therapy rooms, offices, lounges, and the therapy room corridor on the second floor. The type of air conditioner used in the design is a split air conditioner.

3.9 Acoustic Concept

Acoustics are useful for reducing noise levels. The design uses noise armor material on walls and ceilings to dampen the sound. Noise Armor is a sound-absorbing material that is environmentally friendly. It is also fireproof so that it meets green building standards. This acoustic system is applied to the individual therapy rooms and group therapy walls. In addition, the selection of materials such as carpet and acoustic underlay on the floor is useful for dampening noise from the second floor to the first floor and to dampen building vibrations due to footsteps.

3.10 Technology and Safety Concept

The technology in the design is applied to the design operating system where the design uses fingerprint access and access cards for access door security, an automatic window closing system makes it easy to open and close the louvre window in design, and the use of touch screen monitors for user experience in interaction areas that make it easy to updating content in the future through the system so that the experience felt by users can change easily according to existing requirements at any time.

Safety is important to pay attention to because it is very important to maintain user happiness both physically and psychologically. The security system implemented in the design includes:

1. Use of CCTV in corners of public areas.
2. Use of access doors with fingerprints and access cards.
3. A fire extinguisher or fire extinguisher to extinguish the fire in case of fire.
4. Smoke detector to detect if smoke from a fire occurs in the building.

3.11 Layout

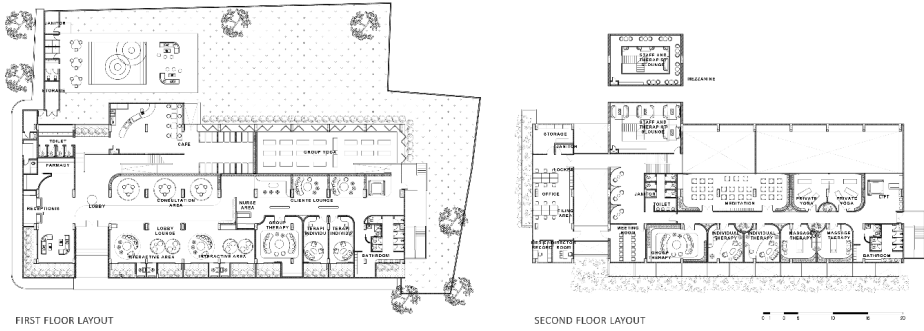


Fig 6. layout

The design consists of 2 floors and has two access stairs leading to the second floor. Therefore, to divide circulation between guests and clients in the design, one stair access is intended for meeting guests, staff, and nurses, while other access stairs are specifically for access to clients and users related to the therapy room on the second floor. This is intended to limit guests entering the therapy room or private area, so the area always remains private. In addition, to facilitating circulation access for wheelchair users, the design is equipped with elevators/lifts that connect each floor in the design.

3.12 Lobby Area

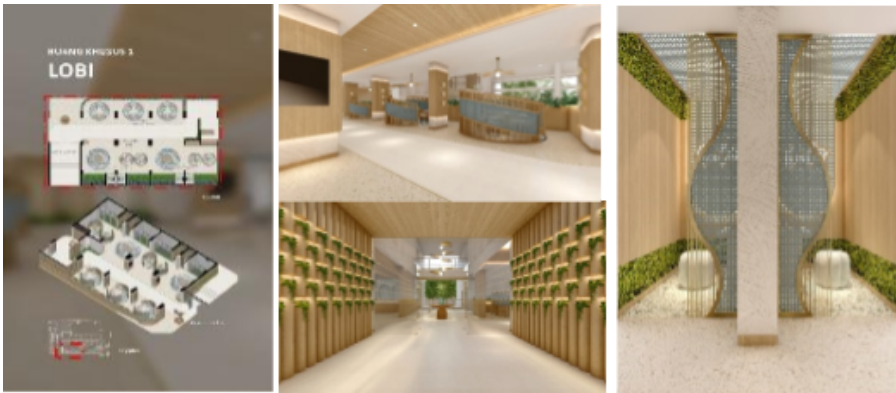


Fig 7. lobby area

The lobby is the first area that every user enters. It is designed to give a welcoming and spacious atmosphere. Even though it is a public zone, the seats are arranged and designed to provide a personal space for the users by using a rotating partition and a variation of seats. This area is equipped with interactive and branding areas seeks to build trust and embrace clients.

3.13 Group Yoga Room



Fig 8. group yoga room

The group yoga room is used for yoga group activities with 18-24 people capacity. The room has windows that can open completely to unite the room with the garden area. The room is equipped with split air conditioning and dimmable lights that enable users to adjust the room atmosphere according to their conditions and wishes. The laser-cutting pattern on the wall is inspired by the shape of a flying dove's wings which gives the impression of hope and recovery.

3.14 Individual Therapy Room



Fig 9. individual therapy room

Individual therapy rooms are intended for psychological therapy sessions between clients and therapists. The room's atmosphere is designed simply by using wood and plant elements to create a natural atmosphere. The use of blue color gives a calm psychological effect while brown color gives warmth to the users. Dimmable lights and split AC make it easy for users to determine the room's light intensity and thermal conditions according to their wishes.

3.15 Conclusion and Discussion



Fig 10. TID framework

The primary goal of the design is to assist women suffering from post-traumatic stress disorder (PTSD) with accessible services and adequate facilities that promote empowerment and support rehabilitation. TID is applied to the outcome in the concept and process. The 'Kepak Asa Jiwa Tenteram design idea,' developed from the values of 'peace of mind' and 'hope' inspired by TID, strives to provide a safe, relaxing, pleasurable, and inclusive environment for users. For additional research, strategically use interior components, color schemes, geometric forms, circulation patterns, lighting arrangements, home finishing materials, and a sense of optimism to improve the users' chances of recovery. The space's design also focuses on providing a healing environment, which is accomplished by mixing natural elements into the interior. The therapeutic approach employs sensory stimulation to help the individual develop a sense of ground. Individuals gain security, respect, connection, community, control, dignity, and joy with time.

4. Acknowledgment

The first author would like to thank the second and third authors for their contribution in writing this journal and thanks to the psychologists and therapists, who were very helpful in sharing their knowledge and experiences.

References

1. Watkins, L. E., Sprang, K. R., & Rothbaum, B. O. (2018). Treating PTSD: A review of evidence-based psychotherapy interventions. *Frontiers in Behavioral Neuroscience*, 12, 1–9. <https://doi.org/10.3389/fnbeh.2018.00258>
2. Torres, F. (2020, August). What Is Posttraumatic Stress Disorder? American Psychiatric Association.
3. American Psychiatric Association. (2013). *DIAGNOSTIC AND STATISTICAL MANUAL OF DSM-5 TM* (5th ed., Vol. 2). American Psychiatric Association.
4. Haryu, H. (2018). GANGGUAN STRES PASCA TRAUMA AKIBAT DITINGGAL ORANG YANG SANGAT DICINTAI. *Al- Tatwir*, 5(1), 123–138.

5. KOMNAS PEREMPUAN. (2021). Catatan Tahunan 2021: Catatan Tahunan Kekerasan Terhadap Perempuan Tahun 2020. In Komisi Nasional Anti Kekerasan Terhadap Perempuan.
6. Giovani, S. (2022, February 28). Hasil Wawancara Pribadi.
7. Mahaputra. (2022, March 7). Hasil Wawancara Pribadi.
8. Saputra, A. (2022, March 10). Hasil Wawancara Pribadi.
9. Vadika, R. (2022, March 12). Hasil Wawancara Pribadi.
10. Lidayana, V., Ridha Alhamdani, M., & Pebriano, V. (n.d.). KONSEP DAN APLIKASI HEALING ENVIRONMENT DALAM FASILITAS RUMAH SAKIT.
11. Jones, K. (2015). *Health and Human Behaviour*.
12. Beukeboom, C. J., Langeveld, D., & Tanja-Dijkstra, K. (2012). Stress-Reducing Effects of Real and Artificial Nature in a Hospital Waiting Room. *Journal of Alternative and Complementary Medicine*, 18(4), 329–333. <https://doi.org/10.1089/acm.2011.0488>
13. Gillis, K., & Gatersleben, B. (2015). A review of psychological literature on the health and wellbeing benefits of biophilic design. In *Buildings* (Vol. 5, Issue 3, pp. 948–963). MDPI AG. <https://doi.org/10.3390/buildings5030948>
14. Larrabee, M. J. (2016). *An Ethic of Care: Feminist and Interdisciplinary Perspectives* (1st ed.). Routledge.
15. Held, V. (2006). *The Ethics of Care: Personal, Political, and Global*. Oxford University Press.
16. Elsner, A. M., & Vanessa Rampton. (2021). Ethics of Care Approaches in Psychotherapy. In *Oxford Handbook of Psychotherapy Ethics* (pp. 140–153). Oxford Academic.
17. Al-Sheikh, N. (2021). Metaphors Stemming from Nature in the Poetry of Mahmoud Darwish. *Indonesian Journal of English Language Studies (IJELS)*, 7(2), 80–91. <https://doi.org/10.24071/ijels.v7i2.3448>
18. Harte, J. D. P., & Roche, J. M. (2021, March 10). Form Follows Feeling: Trauma-Informed Design and the Future of Interior Spaces. *Archdaily*.
19. Hendy, A. M. (2015). Gender Differences Necessities in Interior Design. *International Design Journal*, 5(3), 1293–1302. <https://www.researchgate.net/publication/305619640>
20. Wayan Sutarman, I. (2016). PEMANFAATAN LIMBAH INDUSTRI PENGOLAHAN KAYU DI KOTA DENPASAR (STUDI KASUS PADA CV ADITYA). *Jurnal PASTI*, 10(1), 15–22.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

