

Evolving postpartum care: A new model for centers in Taiwan

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POLITECNICO DI MILANO
SCHOOL OF DESIGN
MASTER DEGREE IN
INTERIOR AND SPATIAL DESIGN A.A. 2021/2022



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ABSTRACT

In English

In recent years disrupting phenomena at global scale have massively influenced our daily habits as well as the way companies operate business, pushing us toward different levels of transformation. Also traditional customs are inevitably subjected to these changes, which often bring them to a new life that is more coherent with contemporary needs and behaviors. Among these we find the traditional Chinese postpartum recovery of 'sitting the month', which has evolved into modern postpartum care centers. Such centers cater to the needs of neo-mothers providing a wide range of services.

Under the premise that the postpartum period is a sensitive moment for women, this thesis explores how postpartum centers support neo-mothers to find a new identity after the changes brought by maternity, considering at the same time basic physical needs like diet, sleep, etc., and mental needs such as belonging, self-esteem, and self-realization. Several service systems proposed by postpartum care centers in Taiwan have been analyzed via field visits, questionnaires and user interviews, to better understand how to address the user demand. As a result, a new distributed postpartum service model has been developed that allows neo-mothers to customize their postpartum care by mixing multiple services, from location, to diet, to nursing. This is combined with a new spatial solution of a postpartum setting which can be located in different kinds of buildings, offering to mothers a brand-new experience that provides more opportunities for interesting activities and a better interaction among people living the space.

Keywords: Puerperal period; Matrescence; Mother identity; Zuo Yuezi; Custom; Postpartum care center; Decentralization; Ecllosion,

ABSTRACT

In Italian

Negli ultimi anni, i fenomeni dirompenti su scala globale hanno influito enormemente sulle nostre abitudini quotidiane e il modo in cui le aziende gestiscono gli affari, spingendoci verso diversi livelli di trasformazione. Anche i costumi tradizionali sono inevitabilmente soggetti a questi cambiamenti, che spesso li portano a una nuova vita, più coerente con le esigenze e i comportamenti contemporanei. Tra questi troviamo il tradizionale recupero postparto cinese dello "zuo yue zi", che si è evoluto in moderni centri di assistenza postparto. Tali centri soddisfano le esigenze delle neo-mamme fornendo un'ampia gamma di servizi.

Partendo dal presupposto che il periodo postparto è un momento delicato per le donne, questa tesi esplora come i centri postparto supportino le neo-mamme a trovare una nuova identità dopo i cambiamenti portati dalla maternità, considerando allo stesso tempo le esigenze fisiche di base come dieta, sonno, ecc., e bisogni mentali come appartenenza, autostima e autorealizzazione. Diversi sistemi di servizi proposti dai centri di assistenza postparto a Taiwan sono stati analizzati tramite visite sul campo, questionari e interviste agli utenti, per comprendere meglio come rispondere alle esigenze degli utenti. Di conseguenza, è stato sviluppato un nuovo modello di servizio postparto distribuito che consente alle neo-mamme di personalizzare la propria assistenza postparto combinando più servizi, dal luogo, alla dieta, all'allattamento. Ciò è combinato con una nuova soluzione spaziale di un ambiente postparto che può essere situato in diversi tipi di edifici, offrendo alle madri una nuovissima esperienza che offre maggiori opportunità per attività interessanti e una migliore interazione tra le persone che vivono lo spazio.

Parole chiave: Periodo puerperale; Matrescenza; Identità della madre; Zuo Yue Zi; Usanza; Centro di assistenza post-partum; Decentramento; Parto

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**Physiological and psychological
postpartum conditions
for women**

1.1 Physiological changes of the puerperal period

- 1.1.1 Reproductive organ
- 1.1.2 Breast tissue
- 1.1.3 Cardiovascular system
- 1.1.4 Musculoskeletal system

1.2 Psychological changes of the puerperal period

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Chapter 1 Physiological and psychological postpartum conditions for women

1.1 Physiological changes of the puerperal period

The puerperium, or postpartum period, refers to the phase of physiological and psychological adjustment of a woman after giving birth to a child, which starts immediately after delivery and the following six weeks, when the body returns to its pre-pregnancy condition (Ladewing, London, & Olds, 1990). Compared with the whole pregnancy and childbirth, this period seems to be a gradual fading condition (May & Mahlmeiser, 1990). That is, all the organs or physiological phenomena that have experienced changes during pregnancy and childbirth will gradually adjust to the new condition and recover from pregnancy. The original term of postpartum, 'puerperium', is composed of two Latin words "Puer" and "parere", which means 6-8 weeks after the birth of the baby, the placenta and the fetal membrane are peeled off (Yang, 2000). Puerperium is considered the fourth stage of pregnancy as it takes time to go through a stage of growth, whereas in obstetrics and gynecology nursing, the puerperium is divided into three periods: the first period is termed as 'the immediate period', which refers to potential anesthesia and postpartum complications that might occur within 24 hours after delivery (Novy, 1991); the second stage is 'the early postpartum period', which occurs within a week from delivery;

the third stage is 'the late postpartum period', which refers to the two to six weeks after delivery (May & Mahlmeiser, 1990) or the time it takes until the reproductive organ has been fully recovered to its normal size, which takes about six weeks after delivery (Novy, 1991). To sum up, puerperium is a period of a woman's body adjusting to new conditions after pregnancy and childbirth, during which period the body is anatomically and physiologically recovered to the state of non-pregnancy (Bryant & Overland, 1966; Novy, 1991). The period from the delivery of placenta to the recovery of normal uterus without pregnancy lasts about 6-8 weeks (Zlatnik, 1990); however, the period of puerperium might differ. That is, according to Willian & Beck (1991), the postpartum period refers to the 4-6 weeks from the beginning of postpartum until the body returns to the condition before pregnancy. Because of the women have gone through physical exhaustion, exertion and bleeding during childbirth, they are in the state of "deficiency in both blood and Qi", which leads to Qi and blood weaknesses. The following is an explanation of the physiological changes in postpartum women.

door to the public, it not only influenced visitors, but also employees. Despite the lockdown aim being to ensure everyone's safety and avoid this

1.1.1 Changes of reproductive organs

1. Involution of uterus

The so-called involution indicates the rapid diminution of the uterus or the recovery to the size before pregnancy (Ladewing et al., 1998). The weight of the uterus of a woman in non-pregnant state is about 50-100gm, and the weight of the uterus in pregnancy increases to 1000gm, which includes the weight of placenta, decidua and amniotic fluid (Bowes, 1991); The size, shape and weight of the uterus are increased about 11 times during pregnancy as compared with that of the non-pregnant state, but the uterus will immediately involute after delivery (Novy, 1991). When the fourth stage of labor is completed, the uterus begins to contract strongly. The involution is not only a reduction in volume, but also a decrease in the height of the fundus of the uterus. At the end of the postpartum period, the uterus can almost return to the weight and shape of the non-pregnancy state. In the early postpartum period, the uterus weighs 1000 to 1200 grams. By the end of the first week of the period, the weight of the uterus will drop to 500 grams; by the end of the second week, the weight of the uterus will drop to 300 grams in the pelvic cavity. By the end of the fourth week, the weight of the uterus will return to the weight of the non-pregnant state, which weighs about 50 grams.

The involution of the uterus after delivery may be affected by both positive and negative factors. Positive reinforcement factors, such as secretion of oxytocin, breast-feeding, getting out of bed as soon as possible after delivery, or moderate massage of the uterus, etc. When the mother breastfeeds, the nipple will be stimulated, and the oxytocin will then be secreted from the neurohypophysis, which motivates uterine contraction (William & Beck, 1991) Therefore, to facilitate uterine involution, postpartum women are encouraged to breast feed. There are also some negative factors that hinder uterine involution. The factors include postpartum bladder swelling due to voiding dysfunction, prolonged labor, anesthesia (Ladewing et al., 1990), multiple births, swollen rectum, intrauterine infection, residue of fetal mass, fibroadenoma, and hematoma of broad ligament (Stuart & Christoph, 2000).

In the process of postpartum uterine involution, if the puerpera lifts heavy objects in an excessive manner, the abdominal pressure may rise, which leads to uterine prolapse. Uterine prolapse is also called pelvic floor hernias, or uterine descent. This is the abnormal protrusion of the uterus through the pelvic floor, which is related to bladder prolapse or rectal prolapse.

Women who have the aforesaid issues may feel that "something falls" (Feng, Feng, 1994; Liu et al., 1980; Jeffcoate, 1975). A solid and moving lump can be felt in the lower vagina, and there is a sensation of fall in, heaviness in the lower abdomen or pelvis as well as lower back pain (Pauerstein, 1983) In addition, excessive work such as lifting heavy objects, coughing and going up and down stairs, will aggravate the discomfort, and uterine prolapse for three times will often lead to tingling and infection, and even produce stench and secretions (Liu et al., 1980). Also, there will be walking difficulties (Feng, Feng, 1994).

2. Discharge of lochia

The definition of lochia refers to the discharge of mucus from the uterus s after birth, which is mainly the residual fragments of the uterus after giving birth (Ladewing et al, 1990). Lochia lasts for 3-4 weeks after birth, and the process can be divided into three categories. Lochia rubra is bloody body fluid, which will be discharged about 1-3 days after giving birth; Lochia serosa is a pink secretion, which is mixed with some plasma, which will be discharged about 4-10 days after delivery; Lochia alba is yellow and white, which is mixed with some lymph fluid, which will be discharged about 10 days after delivery (William & Beck, 1991). The microscopic picture of the lochia shows red blood cells, decidua, epithelial cells and bacteria (Pritchard et al, 1985).

During the postpartum period, the lochia will gradually decrease in quantity and the color will become lighter. The postpartum lochia changes from the initial-color of blood, pink, and white to completely clean. The changes reflect the involution of the uterus and the healing of the placenta (May & Mahlmeister, 1990). If there is a large amount of lochia or red lochia after 3-5 days, it means that incomplete uterus involution or persistent postpartum hemorrhage; if the lochia is malodorous, it means that the uterus may be infected (Pritchard et al., 1985); if the color of lochia continues to remain red, there might be possibilities of infection or retained placenta (Stuart & Christoph, 2000).

3. Recovery of cervix and vagina

Hysteredema and lacerations might occur during labor and delivery. Symptoms of ulcers, lacerations and congestion will be found when the cervix is examined by colposcopy. The epithelial cells of the cervix will fall off within 4 days after birth, and the edema and bleeding will decrease after one week (Bowes, 1991). In the first few days after delivery, the cervix can be fit into two finger widths, but within one week after delivery, only one finger width can fit into the cervix. After two weeks after delivery, the internal cervix will be closed and the external cervix will be open, which is the feature of a multipara. (Stuart & Christoph, 20000). Some scholars indicate that for multiparas or those experiencing trauma during delivery, the appearance of the cervix cannot recover to the condition before pregnancy (Dickson, Silverman, & Kaplan, 1997).

Cervical lacerations are especially common on the side (Pritchard et al, 1985).

After delivery, starting from the loose and soft part, the vagina and vaginal orifice gradually become smaller, but the size of them cannot return to the condition before pregnancy (Pritchard et al., 1985). After delivery, the vagina may look swollen and bruised, and a small part of the surface may also have laceration, whereas the vaginal rugae has disappeared (Stuart & Christoph, 2000). There will be many lacerations in the hymen, and the torn hymen will not be anastomosed again, but rupture will slowly heal and some granulation tissue will be formed, which can help identify whether a woman has ever given a vaginal delivery (May & Mahlmeister, 1990). After about three weeks, the vaginal rugae will recover, and the laceration of vagina and perineum will gradually recover. The whole vaginal recovery process takes about six weeks (Stuart & Christoph, 2000).

4. Perineal healing

At the end of labor, the muscles of perineum stretch, swell and may have laceration, which might result in swollen, bruised and uncomfortable feelings. If the episiotomy is performed or laceration is repaired during delivery, there will be cicatricial-tissue in perineum (Dickson, et al, 1997). As for the laceration or perineal incision caused in the delivery process, the wound is usually healed after 5-7 days (Stuart & Christoph, 2000).

Regarding the waiting period of having sex after delivery, scholars suggest that having sex until lochia is not in the color of bright red or 4-6 weeks after delivery (O'Connor & Gourley, 1990). According to the results of Ryding (1984) survey, 20% of women have sex within three months after giving birth, and 21% of them might dislike having sex (Bowes, 1991). Glazener (1997) survey results show that 70% of British women will have sex within 8 weeks after delivery; another study on the postpartum sex life of 484 primiparas shows that 90% of the women will have sex within 6 months after delivery (Barrett, Pendry, peacock, Victor, thakar, 2000).

5. The reappearance of menstruation

There is still not much known about the mechanism of amenorrhea in lactating women, but many reasonable hypotheses suggest that breastfeeding inhibits the secretion of hormones in the anterior pituitary corpus luteum. Although breastfeeding can be a form of natural contraception, the contraceptive effect does not exceed 10%. Therefore, many women in developing countries will use breastfeeding as a contraceptive (Stuart & Christoph, 2000). In addition, the recovery of postpartum menstruation varies as it depends on whether the mother breastfeeds. The ovulation of breast-feeding people will begin 2-4 weeks after the delivery, and they will get their first menstruation 6 to 8 weeks after the delivery (William & Beck, 1991).

1.1.2 Changes of breast tissue

During pregnancy, estrogen, progesterone, human chorionic gonadotropin, prolactin and insulin stimulate the development of the breast, which will then slow down quickly after delivery. However, the time it takes for the concentration of hormones to return to the level before pregnancy depends on whether the woman breastfeeds (Bobak, & Jensen, 1993). Before breastfeeding, the breast is soft and secretes yellowish liquid called colostrum (Bobak, & Jensen, 1993). Colostrum occurs from the third trimester of pregnancy until the first week after delivery. The milk is initiated from the third day after delivery. The increase in the vascular system around the breast results in the congestion and swelling of the breasts, and the breasts therefore become larger and harder as well as more sensitive and painful when being touched (May & Mahlmeister, 1990). If the woman decides not to breastfeed, the anti-prolactin mechanism will be activated, and the concentration of prolactin will decrease rapidly (Bobak, Jensen, 1993).

1.1.3 Changes of the cardiovascular system

The increased 40% (about 1-2 liters) of the total blood volume during pregnancy is sufficient for coping with the blood loss during childbirth. Women who give natural delivery may lose 300-400 ml of blood (Bobak & Jensen, 1993). The postpartum stage places the heart in a critical condition not only due to the loss of blood during delivery, especially the potential accumulated amount of 500ml during natural-labor, but also the automatic return and perfusion mechanism of the uterus after delivery. Postpartum uterine contraction facilitates about 500 ~ 750ml of blood circulation (Nugent, 1992). The increased blood in the body during pregnancy tends to slow down after the childbirth, and about one week after delivery, the blood volume will return to that of the non-pregnant state (William & Beck, 1991; Pritchard et al., 1985). During pregnancy, the heart rate will increase by 15 times per minute, which is mainly due to the increase of total blood volume during pregnancy. Decrease in blood transfusion might lead to symptoms such as bradycardia after delivery, while heartbeat 50~70 times or even 40~60 times every minute is normal (Dickason et al., 1997).

In terms of blood, the blood test value should return to normal state six weeks after delivery. Due to bleeding during delivery, red blood cells are reduced by 14% (Stuart & Christoph, 2000), but the number of red cells should return to normal state within 2-6 weeks after delivery. After delivery, white blood cells would increase to 15000-20000 / mm³, even 30000 / mm³ (William & Beck, 1991; Pritchard et al., 1985). The increase in coagulation factors during pregnancy can be explained as the cause of the low extremity varicose in the early stage of the puerperal period (Ladewing et al, 1990; William Beck, 1991).

1.1.4 Changes of the musculoskeletal system

During pregnancy, rectus muscles will be separated, and the condition is termed diastasis recti abdominis. Pregnant women can thus touch the uterus and bladder when lying down. The abdominal muscles, fascia and pelvic floor stretched during pregnancy will gradually recover during the puerperal period. During this recovery process, women should avoid excessive labor (May & Mahlmeister, 1990). In addition, women may experience fatigue and pain in muscles of the whole body, which is related to the physical exertion and the posture during delivery (Zhuang, 2000).

1.2 Psychological changes of the puerperal period

After experiencing the life-and-death moments in childbirth, postpartum women need to adapt to both physical changes and psychological changes. These psychological changes are complex and involve multiple factors.

1.2.1 The maternal identity Process

Postpartum psychological adjustment is generally based on the stages of how a woman adopts to her role as a mother: Rubin (1961),

- Stage one: taking in

Rubin (1961) suggests that 1 to 2 days after delivery is the period of acceptance. There are several important points during this period: mothers will focus on themselves, talk about the needs of sleeping and food, repeatedly mention the delivery process, and might show more passive and dependent behaviors. However, with the change of times, some scholars found that the aforesaid behaviors of postpartum women in the acceptance period only appear within 24 hours after delivery (Ament, 1990).

- Stage two: taking hold

During the taking hold phase, the parturient has gradually recovered from fatigue and thus begins to pay attention to the newborn. Rubin (1961) indicates that the taking hold phase is the timing to teach the mothers to take care of the newborn. The feature of this period is that the behavior oscillates between dependence and independence.

At this moment, the parturient's attention has been extended to newborns, is capable of independent self-care, talk about the functions of the newborn's body, and receives the guidance of taking care of herself and the newborn. However, there might be a lack of self-confidence.

- Stage three: letting go

During this period, women must readjust themselves so that they can adapt to the role of a new mother. According to Rubin (1961), the letting go period is about one week after delivery. A mother during this period may spend more time taking herself and the newborn. The mother can also recognize that the newborn and herself are individuals, manage to let go of some of the original roles and expectations, and develop a rapport with family members to adapt to the arrival of the newborn.

1.2.2 Postpartum Fatigue

In addition to the aforementioned changes and adjustments of the maternal role in postpartum psychological adjustment, the parturient may also be subject to fatigue and depression due to postpartum physical exhaustion and sleep disturbance. (Gardner & Campbell, 1991). Research shows that postpartum fatigue includes physiological and psychological stressors, which can be attributed to the disturbance of sleep cycle. According to the research on the influence of postpartum fatigue on postpartum physical and mental condition done by domestic scholars, postpartum fatigue has a high incidence rate of 90-96%, with the degree being mild to moderate and the symptoms being a mixture of physical and mental conditions. Among the physical and mental factors, depression tendency, breastfeeding problems, low sleep quality and low social support were significantly correlated with postpartum fatigue (Ge, Lyu, 2003).

Regarding social aspects, it is recommended that 2 weeks after the childbirth, which is when mothers are physically recovered from childbirth, that the visits made by relatives and friends would not cause much burden to mothers.

Regarding the preservation of physical strength, it is recommended that mothers take time to take a nap, adopt a comfortable posture when feeding, and seek help from relatives and friends when needed. The planning of the environment should take the cost of stamina and time into consideration (Yang, 2000).

1.2.3 Postpartum depression

Postpartum depression (PPD) affects the health of women and is an important factor that contributes to family relationships. Previous studies have demonstrated that PPD impairs the mother-child attachment, impacts the marital relationship, and may cause family dysfunction. Although PPD is a common phenomenon, the concept of PPD may be misunderstood as postpartum blues and postpartum psychosis, and the misunderstanding may result in delayed prevention and treatment. With Walker and Avant's (2011) concept analysis methodology, this research points out the definitions, characteristics, antecedents, and consequences of PPD as well as offers empirical screen measurements and examples of the model, borderline, and contrary cases in order to differentiate the concepts of PPD and from those of other disorders. Three defining characteristics of postpartum depression were identified: first, depression begins four to six weeks after delivery and lasts for at least two weeks; second, over 5 depressive symptoms are being identified; third, postpartum depression may disrupt puerperal women's lives by making it difficult for them to care for their babies and to concentrate on daily tasks. This article thus aims at enhancing nurses' expertise in detecting PPD as early as possible and promoting the quality of care received by postpartum women and their family members.

Similar conditions

Because postpartum depression shows similarities with postpartum blues and postpartum psychosis, an integrated analysis of the three symptoms is demonstrated. First of all, in terms of starting time, postpartum depression arises four to six weeks after deliver, whereas the onset time of postpartum blues is shorter than the other two, and postpartum psychosis might suddenly take place two weeks after delivery. Secondly, in terms of symptoms, the common symptom is depression. The differences are the fact that postpartum depression mainly display crying, while postpartum psychosis is often accompanied by confusion, delusion, illusion and other serious situations. Finally, in terms of social function, postpartum depressed mothers are afraid of hurting their children and unable to take up the role of mother while. Postpartum psychosis is more likely to have serious impact on social function as compared with the other two. The symptoms include hurting themselves and their children. Postpartum blues, however, usually does not affect social function (Doucet et al., 2009; Schanie et al., 2008; Seyfried & Marcus, 2003).

The causes and effects of postpartum depression

Before clarifying the concept, we should first consider the antecedents and consequences of the concept. Antecedents refer to the situation that happened prior to or factors of the concept; consequences are the events or effects that resulted from the concept (Walker & Avant, 2011). The following is a discussion on the causes and consequences of postpartum depression.

With regard to the cause, the discussion is taken from the perspective of physiology. Scholars suggest that the secretion of estrogen, lutein, and other hormones increases during pregnancy, which is followed by a rapid decrease 48 hours after delivery, resulting in the decrease of the role of hormone and mood-related neurotransmitters. The changes thus result in postpartum depression (Doucet et al., 2009; Ross, Sellers, Gilbert Evans, & Romach, 2004). According to current studies, estrogen signaling in the third-trimester monitoring gene map can predict the occurrence of postpartum depression, with its accuracy is as high as 88% (Mehta et al., 2014).

In addition, from a psychosocial point of view, postpartum women are dissatisfied with their physical appearance, and the lack of a healthy lifestyle or inability to deal with life pressure such as increased economic expenses, changes in family life, or disharmony with their spouse might altogether result in postpartum depression (Logsdon, Hertweck, Ziegler, & Pinto-Foltz, 2008; Seyfried & Marcus, 2003). Taking care of the baby for a long time leads to sleep deprivation and physical exhaustion, which makes the pregnant women physically and mentally tired. Besides, the psychological resistance to interact with the baby is also a sign of postpartum depression (Burke, 2003; Zauderer, 2008).

The results of postpartum depression include emotional instability, depressive symptoms (Doucet et al., 2009; Ross et al., 2004), high-stress sensitivity, difficulty in social adjustment, weak parent-child relationship and even child abuse. (Logsdon et al., 2008; Seyfried & Marcus, 2004). In the end, the depression impacts the health of family members. That is, the social, cognitive and emotional development of children in the future might not be as healthy due to the mother's postpartum depression. (Burke, 2003; Zauderer, 2008).

2

The postpartum care “Zuo Yuezi”
in the Chinese tradition and
in Taiwan

**2.1 The custom of postpartum period among
Chinese women**

2.2 Zuo Yuezi customs in the Taiwanese society

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2.3 The rise of postpartum care centers in Taiwan

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Chapter 2 The postpartum care “Zuo Yuezi” in the Chinese tradition and in Taiwan

2.1 The custom of postpartum period among Chinese women

"Zuo Yuezi" is specific to traditional Chinese culture, and is considered a rite of passage adhered by Chinese women. The aim of postpartum care is to carry out a compulsory rest plan, which nurtures physical health, alleviates the mental burden and melancholy endured by postpartum female, offers help for the newborn, adapts to the change of roles and seeks social support, which altogether further consolidates one's relationship with the society.

"Zuo Yuezi" is a ritual behavior that Han women have to go through after childbirth. It lasts for a whole month from the birth of the child to the full moon ceremony, so it is also named "Sitting the Month" (Weng 1993). After ten months of pregnancy, a woman is about to welcome the birth of a new life and the joy of being a mother. At this time, the mother also needs to recover from the physical changes caused by pregnancy and childbirth. In western medicine, the period of postpartum recovery of the mother's body, mind and reproductive organs is called "puerperium", which means that the mother has experienced 280 days of pregnancy and childbirth, and has undergone physical and physiological conditioning and rest. In Eastern culture, Hokkien is called "Yue Nei", which refers to the period from childbirth to the full moon. The traditional custom is 30 days. However, depending on regional customs, there are also 40 days, two months, or one hundred days (Chen, 2001).

The recuperation and maintenance during the postpartum period has a dramatic effect on the recovery of the postpartum body and future health. The folks call this special period of recuperation as "Zuo Yuezi" (Lai, 1998). Some scholars have said that confinement is a way to adjust the situation of postpartum women becoming a new mother and a factor to confirm whether they are healthy in the future (Liu Jiang, 1995). Chinese medicine believes that due to the trauma and blood during childbirth, as well as the emotional changes during pregnancy and childbirth, a lot of vitality is lost. A little carelessness can cause disease. Therefore, the mother should pay special attention to their daily life and diet (Lin, 2001).

The tradition of postpartum confinement, or "Zuo Yuezi" in Chinese medicine can be dated back to the Ming dynasty. In Ming dynasty, the Yuezifang (postpartum room), set prior to childbirth, is prepared for serving the needs of delivery. Therefore, the term "Yuezi", or "Yuenei" in South Fukien dialect, refers to the first month after child delivery. (Chang 2009, Wong 1994).

According to ancient medical records, postpartum female are instructed to close the windows, avoid any cold air and cold water, not bathe or wash hair, which might open one's pore and yield to the entry of cold air and suffering of illness (yueneifeng).

The Encyclopedia of Gynecological Health written by Zi-Ming Chen from the South Song Dynasty seems to be one of the early contributors of postpartum confinement. It is read that "Postpartum female is not expected to talk much, laugh, panic, feel worried or angry, cry, overthink, leave the bed, sit too long, do needlework within one month after giving birth. One should also avoid raw and cold food, fruit and vegetables with hard texture and meat with too much fat. Cold air and washing are prohibited as well. Failure of adhering to the aforementioned rules might not see immediate results, but might result in fatigue and illness such as ache over hands, feet, waist and legs, which is an incurable illness". Taboos and approaches to postpartum confinement are thus introduced in the book. (Wong, 1994)

The custom of postpartum confinement involves meal options based on Chinese medicine. The recommended meals might include soup (made with five Chinese herbal medicine: angelica sinensis, cnidium rhizome, peach kernel, rhizoma zingiberis preparata and honey-fried licorice root), peanut and pig knuckle soup that increases breast milk supply, sesame oil chicken soup, pig kidney seasoned with sesame oil and eucommia leaves, mud crab stewed in Chinese medicinal herbs. One should avoid drinking raw water and consuming uncooked food. Taboos related to daily practices are as followed: no leaving the house, no exposure to sunshine, no washing or exposure to wind (might result in headache), no taking sponge bath with rice wine, no lifting heavy objects (prevention of prolapse of uterus), no reading or crying (might result in failing eyesight). The meal recommendation and taboos are thus all meant to treat postpartum fatigue and increase stamina.

According to the dual principle of yin and yang in traditional Chinese medicine, pregnancy and childbirth are considered to exhaust women's yang, leaving women in a transient functional imbalance status of having relatively more yin, which resembles illness. Yin originally means 'shady' and is related to the phenomenon of cold, winter, and darkness. Also, yin symbolizes femininity, internality, inferiority, and negativity. Yang is translated as 'sunny' and is associated with heat, summer, and brightness; it symbolizes masculinity, externality, superiority, and positivity. Professor Zhuang once said, "New mothers must stick to the custom during postpartum period as the practice of postpartum confinement contributes to one's future health."

Mothers should be particularly aware of the taboos during this period and be patient with the rules and restrictions." The one-month postpartum period plays a vital role as it is during this period that the hormone secretion reaches its peak, which further promotes metabolism. Illnesses such as cold syndromes, hypotension, gastoptosis, anemia, or backache caused by splachnoptosis before pregnancy can be alleviated with proper postpartum care (Ruan, 2007). It is therefore important to follow the practice of postpartum confinement.

2.2 Zuo Yuezi custom in the Taiwanese society

In the Chinese culture, which attaches great importance to inheritance, traditional Chinese family has the responsibility to ensure that the family continues by having children. Therefore, in Taiwanese families, the tradition of "Zuo Yuezi" has its origin in the emphasis on women's childbirth.

However, with the changes in the family and social values in modern society, Taiwan has evolved from a big family in the early agricultural society to a small family in the current industrial and commercial society. It has become more and more obvious in recent years that most newly married couples form small families after marriage, and very few live with their parents or parents-in-law. The demands of the working environment has further increased the number of people leaving their hometowns for work. This situation is particularly noticeable in metropolitan areas. The social changes have brought changes in terms of the family support women receive after childbirth.

Due to the increase in Taiwan's GDP, the economic capacity is far better than that of the previous society. Coupled with the changes in the family structure, most families no longer solely rely on husband as the only breadwinner. The rise of feminism also lead to the majority of women sharing the family's financial resources together. Therefore, there is an increasing number of couples who are both break winners and support themselves, which also relieve the financial burden of the family. To maintain their health, women after pregnancy often take body autonomy into consideration. Thus, couples will do their best to seize the opportunity to optimize the resources they have to restore energy in postpartum period (Chao, 2004).

2.2.1 The traditional concept of Zuo Yuezi

The purpose of “Zuo Yuezi” can be generally summarized into three points:

- Replenish energy and get the body in balance
- Consume more nutritious food to help secrete breastmilk
- Recover and prepare for the next birth

Methods of traditional “Zuo Yuezi” can be discussed from two main aspects: the first is from the behavioral point of view, and the second is from the perspective of diet.

Taboos



Figure 1. Behavior taboos "avoid bathing"

After giving birth, the mother pores and crevices of the whole body are opened. The deficiency of both qi and blood will aggravate if the mother take a bath in the “Yuezi” period because the wind chill will enter the body and remain in the muscles and joints, leading to stagnation of qi and blood in the whole body. Poor circulation will cause irregular menstruation, body joint and muscle pain in the future.



Figure 2. Behavior taboos "avoid washing hair"

For the period after childbirth, the scalp pores are wide open, and shampooing can easily cause damp and cold pathogens to enter and remain in the scalp, leaving an incompletely cured diseases, namely frequent scalp pain, headache, hair loss and neck pain.

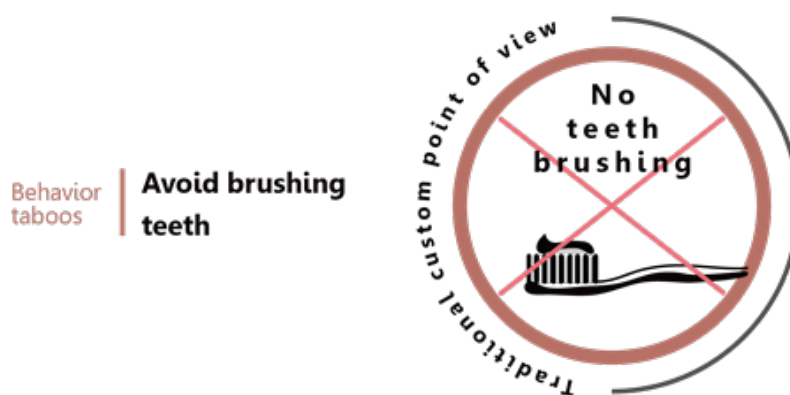


Figure 3. Behavior taboos "avoid brushing teeth"

There is an old saying that "gain a child and lose a teeth ". It is believed that mouth washing during confinement will make the teeth wiggle, harm the gums, and cause premature loosening, loss of teeth, or bleeding of the teeth. Therefore, many new mothers, if possible, would choose not to brush their teeth easily during the "Yuezi" period.

Behavior
taboos | **Avoiding eye
fatigue**



Figure 4. Behavior taboos "avoid eye fatigue"

The eyes must be fully rested during "Yuezi" period. If overuse or fatigue is likely to cause eye diseases. Therefore, it is suggested that mothers avoid reading books and watch TV, especially crying and shedding eyes, for the behaviors are more likely to cause eye diseases.

Behavior
taboos | **No outdoor
activities**



Figure 5. Behavior taboos "no outdoor activities"

When new mother gives birth, the entire body's bone suture is opened, and it is easy for the wind chill to enter through the opened bone suture, which causes "seven-day wind". The 'seven-day wind' means convulsions within 7 days after delivery. Moreover, the wind evil will stay in the bones for a long time, leaving an incompletely cured disease. Therefore, mothers must wrap their body tightly during "Yuezi" period and at the same time, seal up the cracks between the doors and windows at home so as to avoid air circulation, not to mention going out.

Behavior
taboos | **Avoid walking
too much**



Figure 6. Behavior taboos "avoid walking too much"

New mothers use up a lot of energy and physical strength when giving birth, which leads to weaknesses in physique. Therefore, to quickly restore strength, mothers must lie in bed during confinement and cannot get out of bed to move around as getting out of bed will hurt the body. It is not easy to rebuild the strength and the body will become weak in the future.

Behavior
taboos | **Avoid having
sex**



Figure 7. Behavior taboos "avoid having sex"

In addition, refraining from sexual intercourse is considered necessary because having sex leads to hygiene issues and brings bad luck to both sides. During the postpartum period, to avoid doing harm to one's husband, the new mother should stay in another room and avoid sexual intercourse. The rationale of the restriction is to avoid bad luck caused by filthiness. Also, there are also some mentioning that the lochia is rather filthy, which brings bad luck to whoever encounter it. Since women during postpartum period is in the process of discharging lochia, the body is considered filthy and unclean.

Dietary restrictions

Dietary restrictions | **Avoid raw foods**



Figure 8. Dietary restrictions "avoid raw foods"

New mothers often suffer from weakness of the spleen and stomach. Thus, to prevent frequent gastrointestinal discomfort, easy diarrhea, or even dental issues in the future, it is better not to eat vegetables and fruits during "Yuezi" period.

Dietary restrictions | **Avoid salt in the food**



Figure 9. Dietary restrictions "avoid salt in the food"

During the period of "Yuezi", breastfeeding mothers should avoid salt in order to avoid excessive sodium content in the milk as excessive sodium affects the baby's kidney development.



Figure 10. Dietary restrictions "replading water with water distilled from rice wine"

Since the molecular cluster of water is large, water consumption within two weeks after delivery might direct the water into the uterus, internal organs and muscle layer, causing the uterus, internal organs to droop, gain weight, and the lower abdomen might be unable to become flat as it used to be.



Figure 11. Dietary restrictions "food as medicine"

In traditional Chinese culture, food is considered medicine. Food provides it is new mothers with postnatal qi and blood and is essential for full recovery.

2.2.2 The modern concept of Zuo Yuezi

The modern way of “Zuo Yuezi” is based on scientific research. In addition, since there are not as many big families, there may be no guidance from the elders in the family. Therefore, in addition to some traditional customs that people already know, new mothers nowadays consult Chinese and Western medicine doctors or obtain knowledge from books. Some of the traditional taboos are not entirely groundless. After an accumulation of experiences and support from modern technology, there is more access to procedures and standards of ‘Zuo Yeizi’.

The three purpose of modern “Zuo Yuezi”, which are different from the traditional ones, are as followed:

- Take full rest
- Replenish the body with proper nutrition
- Get the body in balance

In this section, the traditional concept of “Zuo Yuezi” will be examined from the perspective of modern medicine so as to discuss the modern way of “Zuo Yuezi”.The section is divided into two parts in detailed explanation: one is the concept of taboo, and the other is the concept of dietary taboo (Lin,1996).

Behavior taboos

Avoid bathing

New mothers should bathe in the ‘Yuezi’. But why does the custom, which has lasted for thousands of years, stipulates that new mothers should not take a bath in the “Yuezi”? The custom can be traced to the poor living conditions and new mothers did not have access to good bathrooms and heating facilities. In order to enable the head of the fetus to be delivered smoothly, the pelvis joint is open under the influence of hormone, and the joints of the body will thus become loose. Therefore, the body is very weak after the delivery, which makes it easy to catch cold and the body also has difficulty recover due to physical weakness.

The living conditions nowadays are different from those in the past. There are a quality bathing environment and facilities for pregnant women, which greatly reduce the chances of catching cold. Therefore, the custom that has been passed down for thousands of years should be revised because avoiding bathing goes against the principles of recovering maternal rehabilitation. New mothers sweat a lot during postpartum period, which might pollute the skin. Also, the lochia produced and the leaked milk will also make the skin dirty.

A variety of body fluids might altogether let off an odor, which makes the mother uncomfortable and poor mental state. A large number of bacteria accumulated on the skin and mucous membrane will take advantage of the condition and further cause folliculitis, endometritis, mastitis, and even sepsis (Lin,2000).

Note

- In summer, it is suggested that the temperature of the bathroom be kept at room temperature. When it is cold, the bathroom should be warm and windproof. The temperature of bath water should be around 35 °C - 37 °C . In summer, cold water should not be used to shower so as to avoid difficult discharge of lochia that causes abdominal pain, future menstruation and body pain.
- To avoid the infection caused by dirty water entering the vagina. It is recommended that new mothers take a shower instead of a bath to If the new mother still feels weak, taking a shower in a standing pose should be avoided. The new mother can instead use to wipe the body.
- The temperature in the bathroom in winter should not be too high, or a large amount of water vapor will be filled in the bathroom, which leads to hypoxia and makes the weak maternal body unable to stand steadily.
- To avoid catching cold, wipe off the water from your body as soon as possible after washing and put on warm clothes before leaving the bathroom.

Avoid washing hair

This restriction is not based on any scientific theories, and neither observes hygienic nor stays in line with modern medical knowledge. Also, the rule also does harm to maternal physical and mental health.

A lot of sweat during childbirth, which is followed by an increasing amount of postpartum sweat will make the scalp and hair very dirty and let off odor. Research shows that by washing and combing hair, the dust and dirt in maternal hair can be removed and bacterial infection can be avoided. Combing the hair can stimulate the scalp and the meridians on the scalp, refresh the new mother, bring a sense of comfort, promote the blood circulation of the scalp, increase the nutrients needed for hair growth, and avoid hair loss. There is also evidenceshowing that postpartum women who wash and comb their hair every day do not have headache, scalp pain or hair loss (Tian,2006).

Note

- Massage your scalp with your finger pulp when washing your hair. To avoid influence from cold air, dry the hair with a hair dryer immediately after washing.
- Shampoo water temperature should remain moderate and not too cold. It is best to maintain the temperature at about 37 °C
- Generally speaking, new mothers tend to have greasy hair during postpartum period. To avoid hair loss, do not use shampoo that is too stimulating.

Avoid brushing teeth

During pregnancy, under the influence of endocrine hormone, pregnant women might show symptoms of gingival bleeding, edema and bleeding phenomenon, especially when brushing teeth. In addition, since few people had access to relevant self-care knowledge in the past, pregnant women were not aware of the intake calcium nutrition during pregnancy, resulting in a lack of calcium poor teeth condition after giving birth. As a result, many people think that pregnant women should avoid brushing their teeth.

In modern medicine, it is believed that new mothers must brush their teeth and gargle during “Zuo Yuezi”. New mothers have to consume enough carbohydrates and high-protein foods every day. Most of these foods are soft and do not have as many self-cleaning effects during chewing, which offers an advantageous conditions for the formation of dental plaque. If new mothers do not brush their teeth, these food residues will remain between the teeth, which will cause tooth decalcification under the action of bacteria, form dental caries or periodontal disease, and bad breath and oral ulcers (Lin,1996).

Note

- Pay special attention to calcium intake and oral hygiene during pregnancy. Brush teeth with warm water, and soak the toothbrush in warm water before brushing to prevent excessive cold stimulation on teeth and gums.
- Finger rinse can be practiced 3 days after delivery. That is, wash the index finger and wrap gauze on the finger, squeeze the toothpaste on the finger to make it function as a brush head, wipe the teeth back and forth, up and down, and then massage the gums several times. This method can activate blood circulation, strengthen teeth and avoid tooth loosening.

Avoid activities outside the home

The so-called "seven-day wind" refers to the high fever induced by maternal infection during the "Zuo Yuezi" period. In the past, maternal nutrition, living environment and medical care are poor, which makes a weak immune system and the vulnerable body can be easily infected. The infection might lead to fever and even higher fever. Nowadays, people's living standards have been greatly improved, which can ensure adequate nutrition and a good living environment for new mothers, and medical care has also been greatly improved. As a result, the maternal body's has a stronger immune system than before.

Therefore, avoiding outside activities seems unscientific today. During the "Zuo Yuezi" period, regardless of winter and summer, should be in good air circulation and the body does not need to be covered too much. Therefore, if the temperature is not properly adjusted, it is possible to cause maternal heatstroke and even cause convulsions, especially in hot weather.

Note

- Avoid the wind blow (natural wind or air-conditioned wind) directly entering the maternal body.
- Clothes should be changed according to the season. When it's hot, do not wear long sleeves, trousers.

Excessive physical activities are discouraged

The formation of this custom has its background in the old days. In the past, women had to undertake heavy housework. As long as women get out of bed. after childbirth, they have to do heavy housework, which will definitely do harm to the body of the new mother. The reproductive organs cannot be fully recovered, and the mother might suffer from long-term illnesses. As a result, the traditional values have led to the so-called custom of "not getting out of bed during confinement".

Modern women generally don't have to do heavy housework after childbirth. Medical research has shown that if a long period of inactivity after delivery can easily cause lower extremity venous thrombosis and intestinal stickiness in women whose blood is already in a hypercoagulable state, especially for women undergoing cesarean section. At the same time, the musculature at the bottom of the pelvic cavity after childbirth cannot hold the uterus, rectum or bladder due to lack of exercise, leading to bulging.

If the new mother does some moderate activities after giving birth, the contractility of the abdominal muscles can be increased, and the recovery of the uterus, the rectum, and bladder can take place as soon as possible.

At the same time, doing some moderate activities also helps the discharge of lochia, prevents constipation and urinary retention, and the mother can thus maintain a comfortable mood and chances of postpartum depression will be reduced.

Note

- If there is no wound in the perineum and the body fatigue has disappeared, the new mother can sit up and eat 12 hours after delivery, and get up 24 hours later for having some activities such as sitting in bed for a while or leaving for the bathroom. 48 hours after delivery the new mother can get out of bed to change diapers for the baby and other minor activities, or walk around the room 2-3 times a day.
- If possible, cesarean section mothers should try to get out of bed 24 hours after delivery and gradually increase the amount of activity, so as to avoid intestinal adhesion or thrombophlebitis of lower limbs caused by a lack of movement.
- According to Traditional Chinese Medicine, childbirth makes a woman's body weaken as she continues to be the primary source of nourishment for her new baby. It is thus important for the new mother to replenish herself with food, rest, warmth and support so that she is able to be the caregiver.

Dietary restrictions

Avoid consuming fruit and raw vegetables

New mothers should eat more vegetables and fruits during confinement. Maternal body rehabilitation and milk secretion require more vitamins and minerals. Vitamin C in particular can stop bleeding and facilitate wound healing, and vegetables and fruits contain a lot of vitamin C. In addition, new mothers are prone to constipation or difficulty in bowel movement during the "Zuo Yuezi" period. Vegetables and fruits contain a large amount of dietary fiber, which can promote bowel movements and facilitate postpartum defecation.

Note

- Maternal gastrointestinal function is weak. It is suggested that new mothers start with a small amount of food in the beginning.
- Maternal gastrointestinal is very sensitive. Do not eat cold fruits and vegetables as food that is considered cooling leads to gastrointestinal congestion and affects digestive function.

Avoid salt in the food

Meals without salt might only result in poor appetite and weaknesses. Research shows that some salt in the meal is good for a maternal body. In the first few days of childbirth, the body sweats a lot, and the breast secretion is also highly activated. The body is thus in desperate need of water and salt. The lack of salt might thus affect the secretion of milk.

Note

- Maternal food should be added with a proper amount of salt so as to avoid dehydration caused by excessive sweating, affecting the body recovery and milk secretion.

Avoid contact with the 'cold' water

According to ancient Chinese medical books, rice wine can clear blood vessels, thicken intestines and stomach, expel pathogenic cold and dampness as well as pass through Twelve Main Meridians. This theory has been confirmed by modern medical research with certain scientific evidence. Drinking rice wine can prevent many diseases such as postpartum joint pain, and can promote blood circulation, facilitate the function of spleen and stomach and also milk secretion.

Note

- Since alcohol may dilate blood vessels and increase bleeding, it is not appropriate to overdose rice wine.

Cooked meals with Chinese herbs

It is known that it requires an increasing amount of nutrition for recovery, especially breastfeeding, after childbirth. As a result, the food supply during this period is high in nutrition. In addition to helping the new mother to recover after delivery, the nutrition also helps with breastfeeding and support the mother to go through this moment of transition.

The purpose of food is to nourish blood, qi, and yin, and yang, all of which are necessary for giving birth to a baby, breastfeeding and the mother herself. But the nutrition is being consumed during birth. Because of the necessity for highly nutritious foods, meat is generally the focus of nutrients intake, and the most commonly-seen dishes are soups and stews made of bone broths. Broth-based soups are the ideal postpartum food because they are a source of protein, iron, calcium, magnesium that is easily absorbed, and there is also gelatin, which supports the repair of connective tissue, and helps stop excessive uterine bleeding.

Note

There are a few foods that are worth mentioning for their nutrients needed in the postpartum:

- Ginger – Ginger is warm, nourishing, aids digestion and helps with blood circulation. It is thus one of the ingredients in traditional postpartum recipe. For new mothers who bleed a lot, only a small amount of ginger can be consumed. The intake of ginger can increase once the discharge of lochia is no longer as heavy.
- Black sesame – Black sesame is a traditionally known for increasing qi and lactation. They are full of essential fatty acids, b vitamins, calcium, magnesium, zinc, and tryptophan. Tryptophan is known for its mood stabilizing effect. However, if the mother has weak digestion, do not eat an excessive amount of black sesame.
- Black vinegar – Black vinegar is a warm, nourishing ingredient that purifies the blood and aids circulation, helps digestion and constipation, it also encourages perspiration. Perspiration serves to eliminate toxins and additional fluid after birth. It contains amino acids that are used in tissue repair and growth, and it is also a perfect match with bone broths.
- Pig's Trotters – These are the food of new mothers in traditional Chinese culture are encouraged to consume. They are warm, supplement the blood and yin, and nourish the kidneys, which are also called the gate of life. The functions of kidneys are thought to be diminished by pregnancy and birth. Pig trotters are the source of moisture and improve constipation or skin dryness. They are full of cartilage and produce nutritious gelatine that is ideal for replenishing, repairing tissue, replacing blood, aiding lactation, and providing mental support.
- Eggs – Eggs nourish the yin, benefit the heart, kidneys, liver, and spleen. They are a kind of highly nutritious food that are often included in postpartum recipes.

According to the aforementioned literature review, it is obvious that because living condition and nutrition were poor in the past, the purpose of postpartum care is to protect the new mothers, which means that allowing them to take full rest and receive optimal nutrition. The aim of postpartum care seems also to be in line with the purpose of preparing for the next birth.

2.3 The rise of postpartum care centers in Taiwan

Taiwanese people have been practicing 'Zuo Yuezi' for a long time. Although some new mothers may not be willing to follow the traditional practices at home, significant others may still manage to persuade the women to at least adhere to some elements of the custom. However, in recent years, there have been profit-making organizations that provide special postpartum confinement service, which is so-called postpartum nursing home, for pregnant women. The method of postpartum confinement based on modern medical knowledge is in line with the needs of modern women for postpartum care and recuperation. Thus, leaving home for the postpartum care center.

2.3.1 What is a postpartum care center?

The postpartum care center is a specialized maternal and child care institution that practices rituals of postpartum confinement and introduces a list of services. The targets of the service are the mothers and newborns who have just been discharged from the hospital. The care center provides a set of standardized professional services for infant feeding, health care, maternal physical recovery, and mental health.

The kind of new service has successfully guaranteed the health of new mothers and newborns, and the ancestral rituals of postpartum confinement has become an industry. Compared with other competitors such as "Yuesao" (Woman hired to take care of a newborn child and its mother in the month after childbirth.), the postpartum care center has advantages in medical professionalism.

The service provided by the care center mostly take 30 days, and there are also some mothers who choose the service that lasts for 42 days or 60 days.

The service provided by the postpartum care center include three key points: "Food, Housing, and People". "Food" and "Housing" refer to postpartum diet as well as living environment and relevant facilities. The targets of postpartum recuperation are the new mothers who seek body recovery and relatively vulnerable newborn. Therefore, it requires meticulous skills for risk control.

At present, the postpartum care center in Taiwan provides comfortable and spacious personal space with excellent landscape scenery, and some even resembles to the equipment in five-star hotels. Diet with traditional Chinese medicine, high quality medical care services, and exquisitely packaged derivative products make the postpartum care center a service industry that provides high class enjoyment. The following are the basic services of the postpartum care center:

1. Diet

In addition to rest, diet and recuperation is the most important thing for new mothers during postpartum period. Although western nutrition concepts are becoming more and more common in Taiwan, the traditional and deeply ingrained diet concept of yin & yang still deeply affects the diet of Taiwanese people during postpartum period. Also, professional nutritionists and traditional Chinese medicine practitioners are employed to allocate the daily diet and herbal diet for each mother. Care center usually offers three meals a day and extra snacks, including the special postpartum tonic food for the new mother and Shenghua decoction for several days.

In recent years, the care center has paid more and more attention to medicative food cooking. In the past, the professional knowledge for medicated food cooking may be insufficient, and most of the attention focused on the hardware and services in the center. But in recent years, care centers has changed the way they make medicated food. That is, while most of them still follow the ancient prescription, there will also be the formula specially conditioned by the traditional Chinese medicine doctors. Generally, care centers create two different kinds of dishes for the mothers to choose. It can thus be concluded that new mothers nowadays attach great importance to postpartum medicated food, and the industry has also started catering to the consumers.

2. Comfortable accommodation

To enable new mothers and even their family members to take proper rest, the postpartum care center provides comfortable accommodation, in which hardware and software are well equipped. The high-class suites that resemble a five-star hotel attract new mothers and their family members and provide the mother with a proper space for activities so that mothers not only can get enough rest but also feel at home.

3. Baby nursing

Professional nursing staff provides 24-hour care. New mothers can decide whether to breast feed in person, and there are also pediatricians conducting regular health examination for the baby. In addition, the postpartum nursing home provides maternal feeding guidance, infant jaundice care, umbilical cord care, vaccination and infant bath teaching. If it is necessary to isolate the symptomatic carrier to avoid the possibility of infection, care centers are all equipped with isolation rooms to protect other healthy babies.

4. Postpartum nursing consultation

Based on the different needs of new mothers, the center provides postpartum nursing consultation, medication according to the doctor's advice, wound dressing change and examinations. It also provides guidance on postpartum exercise, breast care, contraception, maternal and infant nutrition, accident prevention, and regularly holds mother's classroom or lecture services.

5. Other service

In addition to the services specified in the contract, postpartum care home also provides many additional services based on commercial needs and consumer demand, such as shampoo service, spa fitness treatment and skin care service, aromatherapy, souvenirs, vaccination for infants, customized gift for baby shower, baby diary and customized baby shoes are made to order. All the commodities and related services can be met by consumers with the diversified business mode of the care center.

2.3.2 The origin of postpartum care centers in Taiwan

Some studies have shown that in recent years, many people have moved to Taiwan from mainland China. Those who were unaccompanied had to pay someone to help them with postpartum care. Over time, there were some health workers who were familiar with taboos and regulations and specialized in postpartum convalescence that offered help (Weng Lingling, 1992). But when did this kind of profit-making organization begin to take place? From the perspective of social change, the rise of postpartum care center seems to be closely related to the economic development and the transformation of industrial structure in Taiwan.

With the steady economic development in the 1980s, Taiwan's national income and living standards have increased year by year, and people's living standards and consumer power have increased significantly. At the end of 1980s, there was a surge in the stock market and soaring real estate prices. During this period, a major transformation took place. From 1981 to 1995, the growth rate of the service industry accounted for 51.67% of the gross national product. The relatively experienced postpartum care centers in Taipei were all set up in 1990 or later, when Taiwan's economy was growing steadily and the service industry was booming. In this context, the number of postpartum care centers gradually increased.

In addition, the concept of childbearing is no longer the old-fashioned "the more the better". The government not only advocates birth control policies, but also provides postpartum subsidies. The rationale behind these policies represents a change in the fertility concept of the new generation.

The number of DINK (Dual Income, No Kids) and unmarried families is increasing, and most families have one or two children. Compared with families with five or six children in the past agricultural society, modern families tend to have access to refined life education, and the care of children from birth to growth always receives the optimal attention.

Under the influence of global urbanization, young people have gone to the metropolis for work, and family members are no longer as much as those in extended families. The number of extended families with grandparents and grandchildren has also decreased by 1.5%, in the past ten years.

As stated above, modern women may only have one or two opportunities to take good care of themselves for the postpartum convalescence throughout their lifetime. Also, new mothers, whether reluctant or not to adhere to a custom that is unfamiliar to them, are the targets of this new industry. Therefore, postpartum care center, which caters to the public's demand, has emerged.

With the decrease of birth rate and late marriage year by year, the age of giving birth to babies has also increased. The proportion of new mothers over 35 years old has increased significantly from 9.38% in 2009 to 23.02% in 2019, while the proportion of new mother under 18 years old has seen a slow decline. The data above shows that the number of children in each family is becoming less than before. The majority of families have one or two children, and families with more than three are rare. According to statistics in 2020, the average number of babies born per woman in her lifetime is 1.02. With the extension of the marriage age, the birth age will absolutely be extended. Mothers who give birth at older age tend to make more effort on their own maintenance and child care. For new mothers, after an experience that takes place once or twice in a lifetime, they will make good use of this opportunity to recuperate their body. Therefore, they may choose a postpartum care center that is relaxing, free from elder's pressure, without hard work by themselves, and offers access to complete medical care.

In summary, the reasons why the postpartum care center has become a trend can be summarized as follows:

- Traditional Chinese concept of postpartum care
- Changes in family structure
- Improvement of financial capacity
- The rise of Feminism
- Maternal health needs
- Avoid the pressure brought by the elders
- Numerous and complicated ancestral rituals of postpartum confinement
- Decreasing fertility rate
- Advanced age of new mothers age

2.3.3 Different types of postpartum care centers

At present, there are still various ways of postpartum centers in Taiwan. Postpartum care can be divided into two types (Table 1-1): home health care and institutional care. Institutional care can be categorized into postpartum care centers and postpartum service centers, most of which are established by private consortia or private organizations, and some are attached to large medical institutions. The scale can be different due to the location and their respective financial, material and manpower constraints, as well as the allocation and planning of space and personnel.

In terms of services, the biggest difference between this two types is that there are doctors in the postpartum care centers, or the nursing staff evaluates the health status of new mothers and newborn babies. Furthermore, the nursing staff can provide 24-hour service. In addition, there are related courses to guide new mothers on how to recover their health, breastfeeding and nursing of newborn babies. In terms of setting standards, the biggest difference between this two is that the person in charge and nursing staff of the postpartum care centers should meet the qualification conditions stipulated in the nursing staff law and its implementation rules and must sign a referral contract with the hospital.

Business Model		Hospital Affiliate	Postpartum care center	Postpartum service center
Number of Beds	Mother's bed	6-49 beds	9-27 beds	6-9 beds
	Baby's bed	6-49 beds	11-35 beds	7-11 beds
Products		<ul style="list-style-type: none"> • Postpartum nursing care for mothers • Nursing care for newborns • Medical service for mothers and babies • Dietary service • Health consultation 	<ul style="list-style-type: none"> • Postpartum nursing care for mothers • Nursing care for newborns • Health checkup for newborns • Medicated dietary service • Health consultation 	<ul style="list-style-type: none"> • Postpartum nursing care for mothers • Nursing care for newborns • Health checkup for newborns • Medicated dietary service • Health consultation
Price		€ 150 - 200/ day	€ 310 - 600/ day	€ 210 - 400/ day
Target market		Low-middle income families	High income families	Middle-high income families

Business Model	Hospital Affiliate	Postpartum care center	Postpartum service center
Advantages	<ul style="list-style-type: none"> • Medical supporting system 24/7 • Guidance on health education • Customers tend to pay more respect to the staff. 	<ul style="list-style-type: none"> • Customers focus on hardware facilities and environment • Medicated diet is emphasized. • Guidance on health education • Service quality is emphasized. • Attitude in attending customers is emphasized. 	<ul style="list-style-type: none"> • Family harmony is emphasized. • Nurse-patient ratio is low. • Customers do not have high expectations toward the staff and are thus not as demanding.
Disadvantages	<ul style="list-style-type: none"> • Lots of people getting in and out of the hospital, which might result in high infection rate. • Medicalization of hardware facilities • No medicated dietary service for new mothers 	<ul style="list-style-type: none"> • Medical facilities not as complete • Expenses cannot be reimbursed, which increases the customer's financial burden. • Customers have high expectations toward the staff. • Since the costs for facilities are relatively high, the price is thus high. 	<ul style="list-style-type: none"> • Medical practices are not allowed. • Crowded living area • Quality of service is not consistent. • Lack of latest information on health education • Expenses cannot be reimbursed, which increases the customer's financial burden.

Table 1. The analysis of the different types of postpartum care centers

The postpartum care center mainly makes profits by providing products and services. It adopts a reservation system which requires to sign a contract in advance to ensure the schedule arrangement and the rapid return of cash. The charges vary according to the content of the service. The overall price is between 7500 Euros and 15000 Euros. In addition, some postpartum care centers also adjust their service according to customer needs and provide customized solutions to improve service quality and customer satisfaction.

According to the location or business model, the mainstream postpartum care centers on the market include the following categories: hospital affiliated institutions, hotel style, single family villa style, etc. However, care centers all face similar problems:

- 1.** High fixed cost: rent, facilities and personnel costs are the three main expenses. The high initial construction cost, coupled with the high salary level of professional medical staff, makes it impossible to reduce the price. Therefore, sitting in the month center is classified as luxurious commodity.
- 2.** Multiple services to be provided: postpartum care industry features it is of professionalism and low tolerance for mistakes. Operating the postpartum care center is equivalent to offering catering services, medical services, hotel management and childcare at the same time.
- 3.** Difficulty in standardizing the services for postpartum care: The services provided by home health workers, nurses and doctors are adjusted at any time according to the situation of new mothers. Therefore, customized services mean that the marginal utility is not obvious and that it is difficult to expand rapidly.

- **Spatial design**

Based on the above literature review, the following analysis shows how the design of postpartum care center corresponds to ancestral rituals of postpartum confinement practices:

- (1) **Physical care: avoiding contact with the cold wind and bathing**
----planning of sanitary ware, air-conditioning equipment and window size
- (2) **Dietary restrictions: traditional Chinese medicine for balance in body and nourishing medicated diet**
---- Central Kitchen (HACCP regulation)
- (3) **Nurture: breastfeeding, nurturing**
---- Breastfeeding Room, Rooming-in
- (4) **Medical care: recuperate, health care**
---- Physician consultation area, infant isolation room, health education classroom
- (5) **Activities: restriction, restoration**
---- multifunctional classroom, aerobics classroom, beauty salon, baby swimming pool
- (6) **Lodging: rest, sleep**
---- accommodation, Nursery Room

2.4 Case studies of postpartum care centers in Taiwan

2.4.1 Spatial organization

The management of postpartum care centers can be divided into three major areas: operation management, indoor space service flow management and health management. The relationship between the service and the person being served drives the configuration of the space. Proper health management and control can avoid cross-infection; organization of operation management and indoor space service flow can also reduce the allocation of management and service staff.

Operation management

Because of the frequent entry and exit flows from the postpartum care center, there is a risk of infection, which may pose a threat to new mothers, newborn babies and nursing staff. On the management side, it is recommended to use high-standard system for visitor and caring.

- 1.** Implementing visitor control
- 2.** Neonatal care adopts "family room care" or "24-hour newborn room care" to avoid cross infection
- 3.** Guidance on the infection control for mother breast feeding
- 4.** Isolation and special care shall be implemented in the newborn room
- 5.** Newly admitted newborns should be isolated in the observation room for 7 days
- 6.** Staff should implement relevant infection control measures

Indoor space service flow management

Methodologies for meeting the user's ideas, user needs, and improving the overall spatial quality is a topic worth discussion. The space syntax encompasses a set of theories and techniques for the analysis of spatial configurations. It is concept developed by Bill Hillier, Julienne Hanson in the late 1970s and the early 1980s, which demonstrates the mutually constructive relationship between human spatial behavior and space. This study takes the space syntax theory as a method to understand the spatial use of postpartum care center and analyze its spatial configuration logic.

In postpartum care center, the arrangement of service flow, room space, and open public space is of crucial importance. Because the main users are the new mothers and newborn babies, they all need a high-quality restorative environment. Thus, the purpose is to minimize the excessively stimulating elements while providing a peaceful retreat that has a relaxing mood and is able to relieve psychological pressure. (Kaplan, 1995; Evans and McCoy, 1998)

Service flow analysis

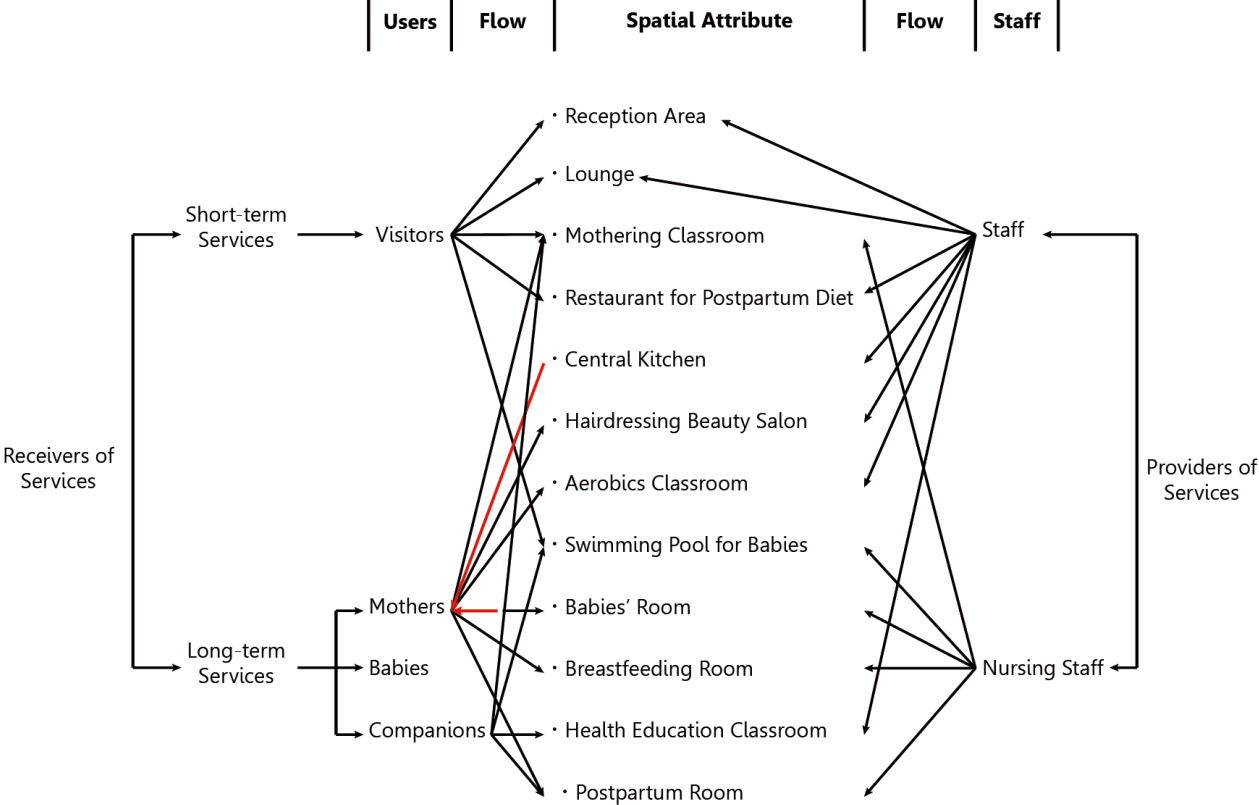


Figure 12. The analysis of service flow

2.4.2 Field visit – Postpartum care center in Hsinchu

“Lisen Care” is a postpartum nursing care center located in Zhubei City, Hsinchu County. It is located next to Hsinchu County Cultural Center and a big park. The care center offers services such as postpartum care, care for the newborns, postpartum fitness services. In addition, there are also accommodation, fitness as well as nutritious and healthy diet at a great value.



Photo 1. The **Lisen Care** postpartum nursing care center

Facilities and services

Lisen Care covers an area of 450 ping and offers 26 beds. The services are equivalent of those in five-star hotels as the environment features its coziness. The care center thus attracts not only new mothers but the family members accompanied them. Based on the size of each room, the rooms can be categorized into 4 levels, with its price ranging from € 145/ day to € 200/ day.

The 4 levels are as followed:



Photo 2. The reception area of **Lisen Care** postpartum nursing care center

4 prices for different types of suites

- For suites with an area of 39.63 m²
Price: € 200/ day



Photo 3, 4, 5
3. Sofa area of the suite
4. Bathroom of the suite
5. view from the sofa area

3	4
5	



- For suites with an area of 33.02 m²
Price: € 185/ day



Photo 6, 7, 8
6. Sofa area of the suite
7. Bathroom of the suite
8. view from the entrance

6	7
8	



3. For suites with an area of 26.42 m²
Price: € 165/ day



Photo 9, 10, 11
9. Desk & Sofa in the room
10. Bathroom of the suite
11. view from the desk

9	10
11	



4. For suites with an area of 23.11 m²
Price: € 145/ day



Photo 12, 13, 14
12. Desk for meal in the room
13. Bathroom of the suite
14. view from the desk

12	13
14	



The target market of this category is middle to high-end consumers. The staff includes 4 customer service staff, 12 nursing staff, 5 kitchen staff, 3 sanitation workers and 2 security guards. In terms of air conditioning equipment, the care center adopts high standard self-contained air-conditioners with air purifiers. The baby room is designed as an independent flow of space and is equipped with an isolation plot. The design is meant to create a safe and isolated area as well as avoid cross infection. As for meal service, there are six postpartum meals a day, which are served by the specially assigned staff.

The suite is designed in the form of a hotel and is equipped with the following facilities:

- 1.** Level 1 flame prevention facilities, fire resistant curtains and quality soundproofing equipment
- 2.** European beddings with Switzerland patent spring. Size: 5*6.2 (double bed)
- 3.** LCD TV (42 "), local/outdoor telephone, refrigerator, bottle sterilizer, water boiler, nursing pillow, professional breast pump, Daikin self-contained air-conditioner, broadband router for each room
- 4.** Each room and bathroom is equipped with emergency buttons and UPS for lightning.
- 5.** The bathroom adopts separate bath and shower, washlet toilet seat and four-in-one heater unit.

In terms of the care for new mothers and newborns, pediatricians are appointed to conduct health examination for newborns (three times a week). Also, there are Chinese medicine practitioners who are appointed to provide nursing care for new mothers (once a week).

Spatial configuration

First floor: There is security office, entrance hall, customer service staff office, storage, audiovisual center, SPA and beauty salon, health/ beauty consulting room, pantry room and garage.

Spatial configuration

First floor: There is security office, entrance hall, customer service staff office, storage, audiovisual center, SPA and beauty salon, health/ beauty consulting room, pantry room and garage.

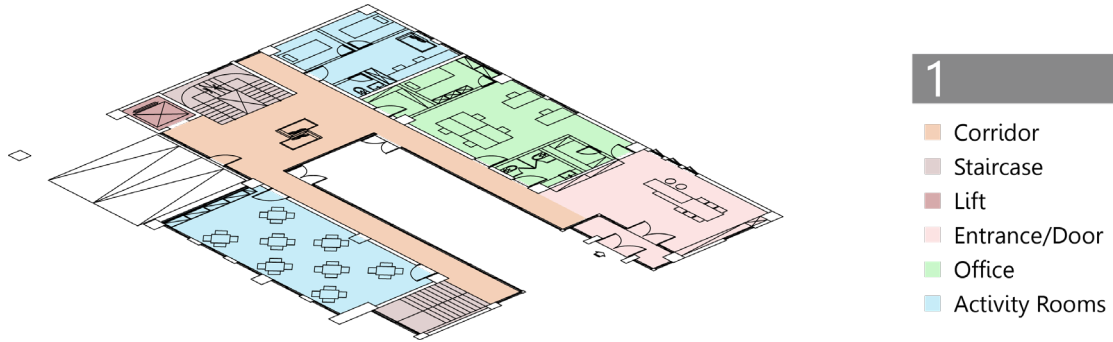


Figure 13. The building layout of first floor

Second floor: there are baby rooms, isolated rooms, observation rooms, 3 suites with an area of 23.11 m², 3 suites with an area of 26.42 m², 1 suite with an area of 33.02 m², reception area, pantry rooms (simple cooking available).

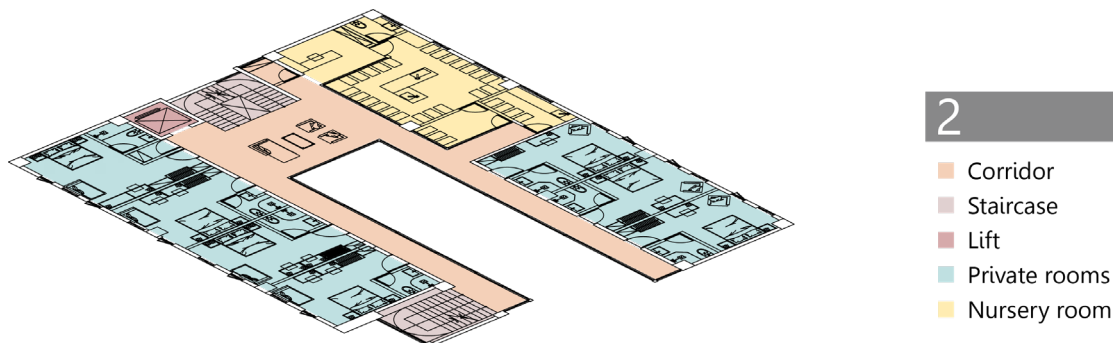


Figure 14. The building layout of second floor

Third floor: there are 6 suites with an area of 23.11 m², 3 suites with an area of 26.42 m², 1 suite with an area of 33.02 m².

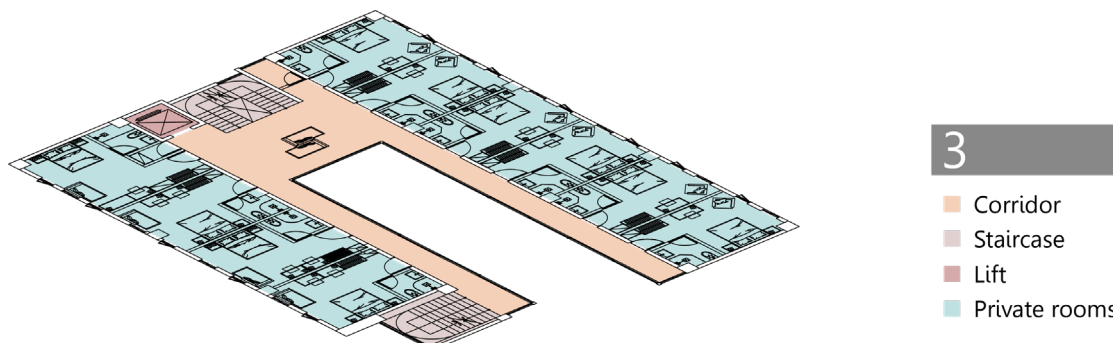


Figure 15. The configuration of the building

Fourth floor: there are 3 suites with an area of 39.63 m², 3 suites with an area of 26.42 m², 1 suite with an area of 33.02 m².

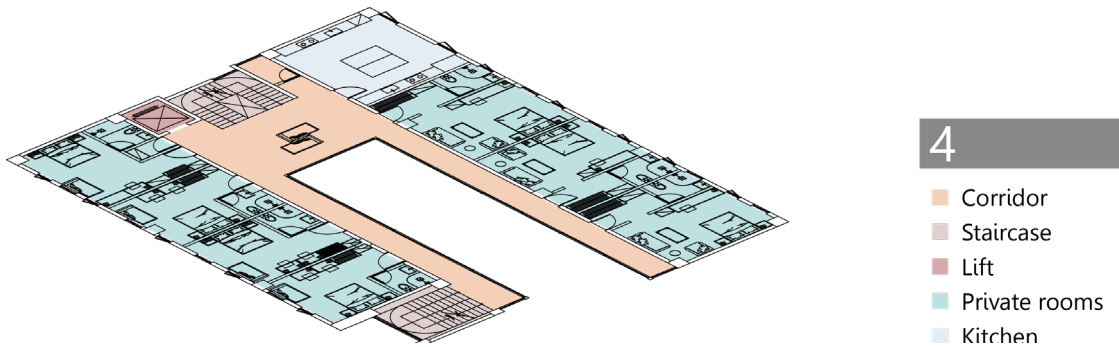


Figure 16. The building layout of fourth floor

Top floor: There is changing room for the staff, laundry room, hairdressing room, clothes drying room, staff restaurant. The arrangement of the facilities is flexible and there are simple partition walls that divide each area. The main users of the facilities on this floor are the staff, and the only area opening for new mothers is hairdressing room. People who need hair care services can make an appointment in advance. Since hairdressers do not always stationed in the care center, appointment is considered necessary and expenses shall be covered by individuals.

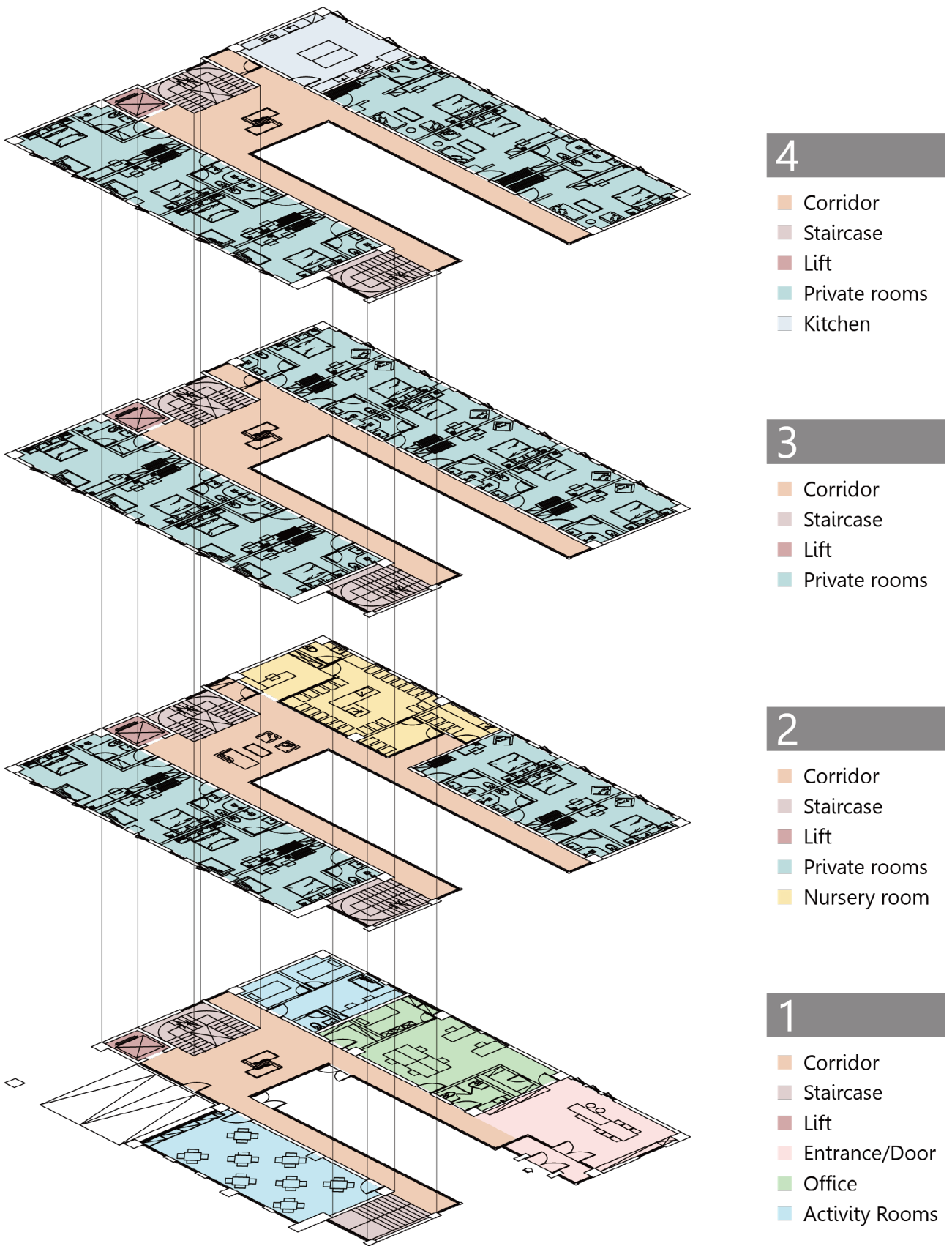


Figure 17. The building layout of fourth floor

User research

According to the survey done by *Lisen Care*, the evaluation and analysis below is followed by the discussion on layout.

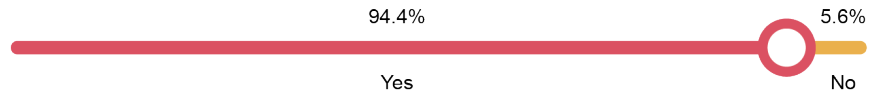
Chart 1-1 Basic information about new mothers in *Lisen Care* (effective sample size: 72)

The questionnaire is aimed at understanding the backgrounds of the customers of postpartum care center and offering sources for further discussion.

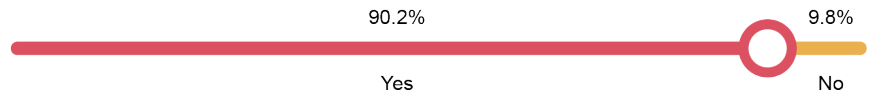


Chart 1-2 Information about new mothers in Lisen Care
(effective sample size: 72)

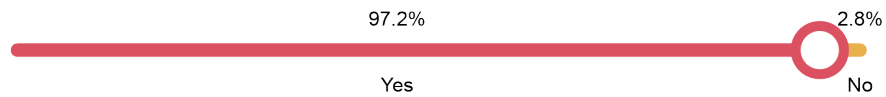
- Whether new mothers check for the registered status of the care center before moving in



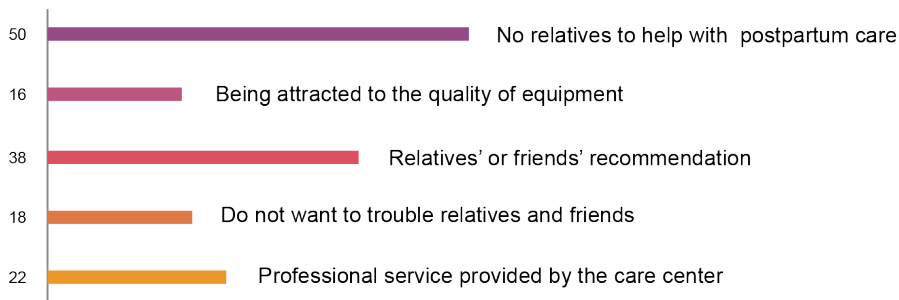
- Whether new mothers have compared deals before moving in



- Whether new mothers understand space utilization before moving in



- Reasons for choosing the care center
(up to 2 answers)



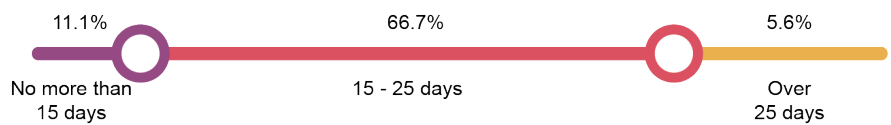
- Rooming-in



- Distance between the suite and the baby room



- Whether new mothers check for the registered status of the care center before moving in



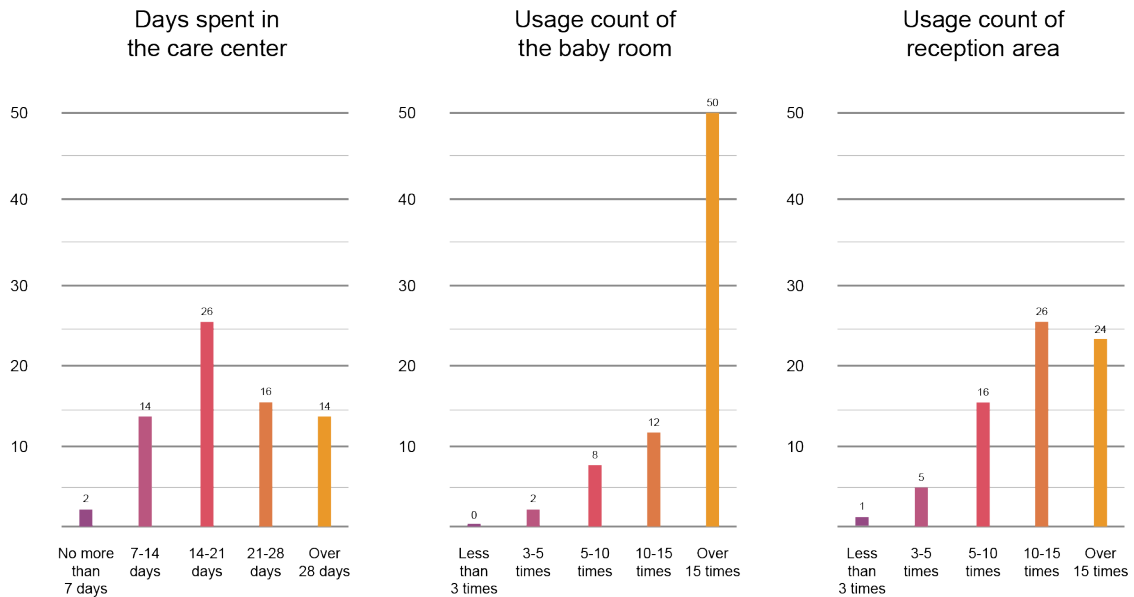
- Price



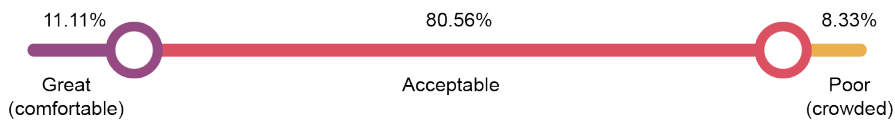
The reasons for coming to the postpartum care center are as followed: the main reason is that the family does not have relatives who can offer help, and the families of this type account for 70%. According to the pervious information of the new mothers, 58.3% of the families are categorized as small families, which mean that there is no one who can offer postpartum care for the families. For those who live with parents or parents-in-law, the aged elders might not be able to offer help, or the elders might have already been helping to take care of other grandchildren. The second most reason for coming to the postpartum care is through relatives' or friends' recommendation. The past experiences and the popularity of the care center provide the new mothers with access to relevant information, and the new mothers are thus able to make the optimal decision based on their needs. Furthermore, the professional knowledge offered by postpartum care center provides a guarantee of quality postpartum care for those who are not familiar with the relevant knowledge. What comes at last is the quality equipment provided by the postpartum care center as it helps the new mother with their physical as well as mental relaxation.

Before moving into the postpartum care center, about 90% of the couples will make a visit to the care center in advance and further make a comparison between different postpartum care centers. In terms of the days spent in care center, only 22.2% of the customers stay for 30 days, which is the so-called duration of 'Yuezi'. Most of the customers spend 15-25 days staying in the care center, and there are only 11.1% of people who spend no more than 15 days. As for the types of suites, most (84.72% of the new mothers) go for single suite as they are aware of privacy issues. Since some family members and husbands of the new mothers might be occupied with other works, some new mothers won't be accompanied by their family members. They might thus choose to stay in double suites, which is also rather an affordable option. As for visiting the newborns, the newborns will be brought to the suite, which means that new mothers do not have to go to the baby room in person. However, some new mothers still want to go to the baby room. As a result, the distance between the suite and the baby room might not be an issue. Most of the mothers do not prefer rooming-in as the new mothers might need to take plenty rest. Furthermore, since most of the mothers are working mothers, rooming-in might not be a favorable option for most of the mothers.

Chart 1-3 New mothers' use of facilities in Lisen Care
(effective sample size: 72)



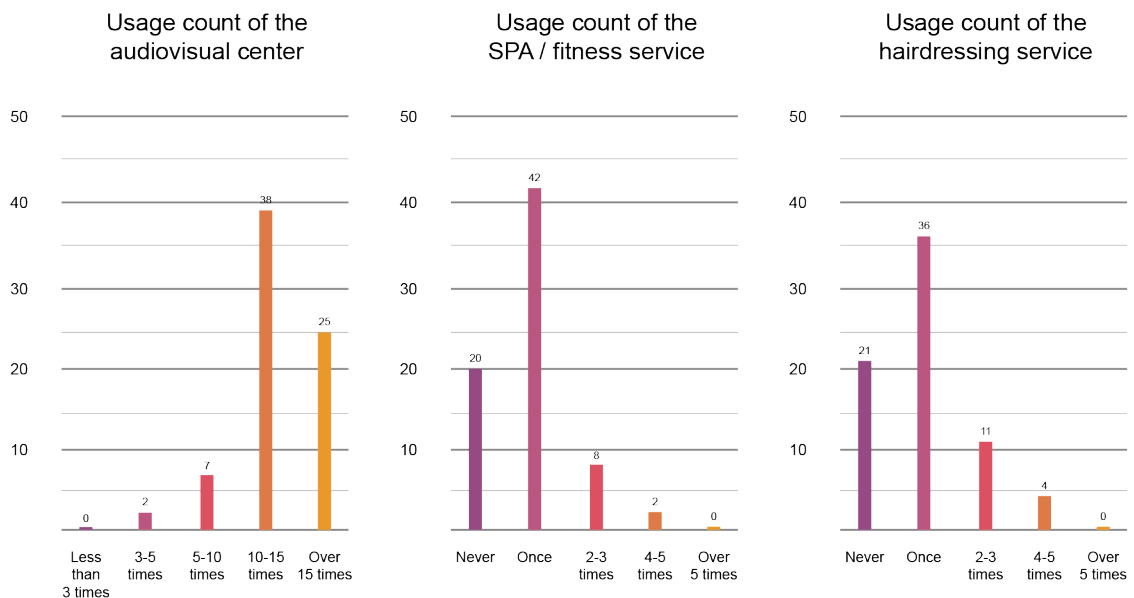
• Customer satisfaction for the suite



• Customer satisfaction for the baby room



• Customer satisfaction for the audiovisual center



The third section is a survey aimed at understanding the space most frequently used by new mothers and whether there are redundant spaces. To begin with, 80.58% of the new mothers think that the facilities in suites are acceptable, whereas 8.33% of the new mothers mention that they feel crowded because there is too much furniture. In terms of the baby room, the questionnaire presents a set of questions regarding whether people feel crowded when there are 24 babies (the limit of maximum user) in the baby room. 52.78% of people think that the space is not enough, while others feel the space is either acceptable or satisfactory. In terms of the layout of the audiovisual center, no one mentions the crowdedness, and the customer satisfaction reaches up to 84.72%.

As for the spatial utilization, the baby room is the most popular space. Though the nurses will bring the newborns to the suite, the relatives or the mothers themselves sometimes still prefer making a personal visit. The baby room is under stringent personnel control. That is, people other than the nursing staff are not permitted to enter the baby room and they can only see the babies through the glass.

Lisen Care is equipped with reception area on every floor. The new mothers can make the best use of reception room during relatives' visit or by socializing with other new mothers. Knowledge of recovery from childbirth can thus be exchanged between new mothers in a casual way. Also, audiovisual center also plays an important role as there are some regular activities for new mothers. Since most of the mothers are first-time mothers, they are all looking forward to the events held in the audiovisual center. The audiovisual center is not only a space for leisure activities but a venue for educational activities.

As for SPA and beauty salon and hairdressing room, people need to pay for the service. People who live in Lisen Care over 15 days will be given one SPA service as bonus. Additional service can be purchased and appointed in advance. But since the price is a bit high, most of the people won't make additional purchase.

In terms of hairdressing room, the rather affordable price (NT\$250 for every service) makes it possible for new mothers to enjoy the service. However, due to the taboo that regulates no washing hair after childbirth, there is still 29.1% of new mothers choose not to wash their hair.

When being asked whether there is need to add other facilities, most of the mothers are satisfied with current arrangement, with a few mothers mentioning that facilities such as gym and aerobics classroom can be added in the future.

Conclusion

Since Lisen Care Center is a newly established care center, the layout demonstrates a well-planned arrangement of the facilities. The consumption pattern can also be seen through the services of high quality. In terms of space utilization, the most frequently used facility is the suite, followed by the baby room and audiovisual center. Other paid services such as hairdressing room and SPA and beauty salon are not as popular except for those that are included as free bonus service. Users often show high acceptability toward the hairdressing service due to its affordable price. However, due to the taboo that regulates no washing hair after childbirth, there aren't many new mothers that choose the hairdressing service. As for the potential space utilization, some mention that they are looking forward to new facilities such as gym.

2.4.3 Field visit – Postpartum care center in Yilan

“In Moon Newborn Care Resort” is a postpartum nursing care center situated in the countryside area in Yilan. The care center is surrounded with farmland and is now the only registered postpartum nursing care center in Luodong Township. The care center offers postpartum care, care for the newborns, postpartum physiological evaluation and professional medical consultation. In addition to the postpartum nursing care, there are also quality living circumstance and postpartum diet.



Photo 15. The In moon newborn care resort

Facilities and services

Originally, In Moon Care encompasses 4 single houses. After implementing changes of function and opening up of inner space. The area covers 400 ping and has fifteen beds, which is equivalent of the facilities in 5-star hotel. New mothers and even their family members are thus attracted by the quality facilities. Based on the size of each room, the rooms can be categorized into 3 levels, with its price ranging from € 205/ day to € 255/ day.

The 3 levels are as followed:



Photo 16. The reception area of In moon newborn care resort

3 prices for different types of suites

1. For *qing yue* suites with an area of 29.7 m²
Price: € 205/ day

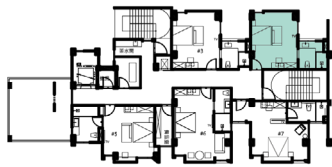
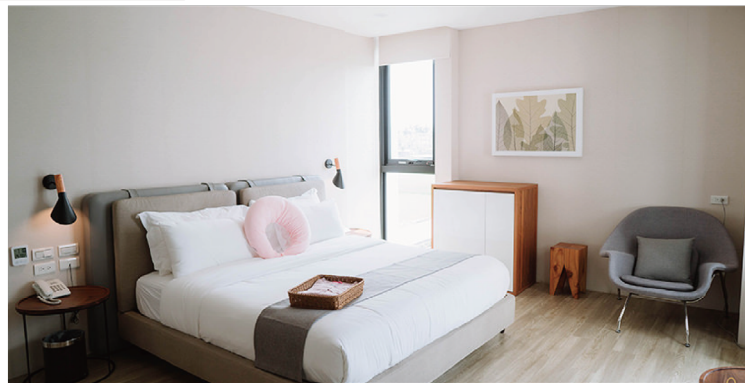


Photo 17, 18, 19
17. Desk for meal in the room
18. Bathroom of the suite
19. View from the desk

17	18
19	



2. For *he yue* suites with an area of 33 m²
Price: € 230/ day

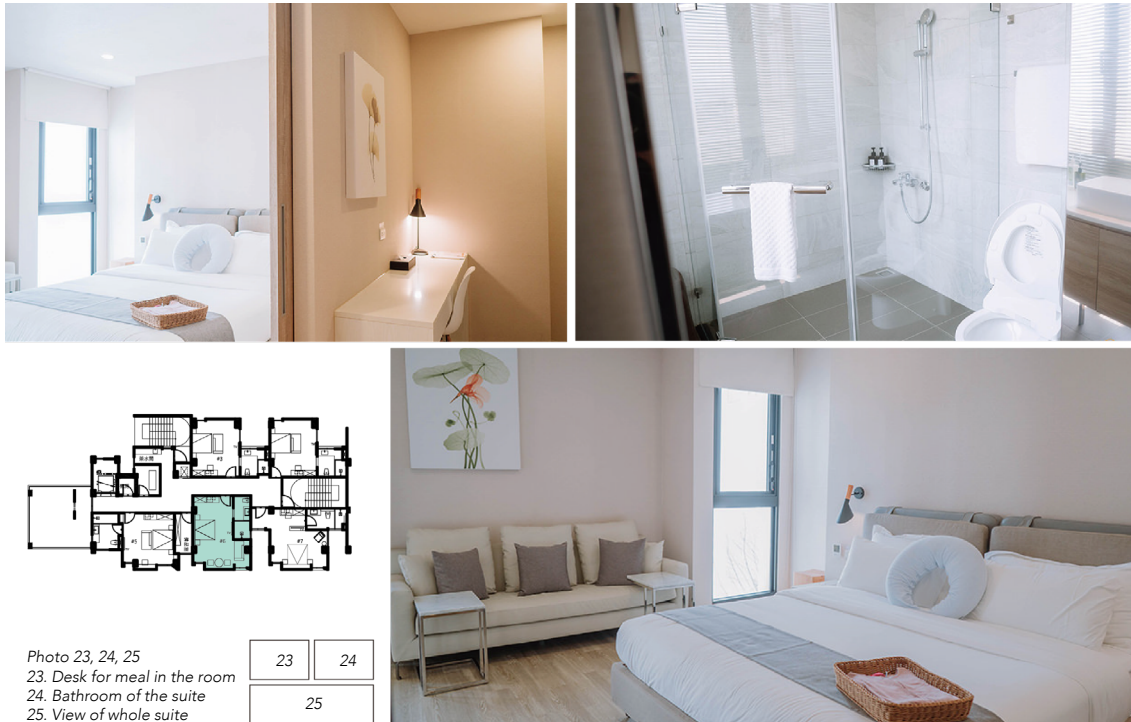


Photo 20, 21, 22
20. Sofa for breast feeding in the room
21. Bathroom of the suite
22. View of whole suite

20	21
22	



3. For *lan yue* suites with an area of 39.63 m²
Price: € 255/ day



The target market of this category is relatively high-end consumers, and the care center features its high-class service and accommodation. The staff includes 2 customer service staff, 14 nursing staff, 4 kitchen staff and 4 sanitation workers. In terms of air conditioning equipment, the baby room adopts self-contained air-conditioners and has the nursing staff 24/7. The ratio for nursing staff and the babies is 1:5. The baby room is equipped with 24/7 real time video, so mothers are able to observe their babies any time. Furthermore, the consultant pediatricians make their rounds of visit once a week.

In terms of food serving, In Moon Center has an independent kitchen that offers fresh food and medication. The medicated diet focuses on six elements of nutrition and achieves the goal of recuperating and calories control. The diet is designed by Chinese Medicine consultant doctors, dietitian and professional chef. New mothers are served with five meals a day (breakfast, lunch, dinner and two servings of snack). The menu will be adjusted according to the new mother's need. That is, mothers who have natural childbirth and caesarean delivery will receive different customized diet respectively.

In terms of the hardware facilities, the room adopts one to one self-contained air-conditioner, which is coupled with one to one filter system for hot water. The design is aimed at avoiding cross infection. The room is also equipped with TOTO washlet toilet seat, five-in-one heater unit, emergency buttons inside the room and the bathroom. UPS for lightning, smoke detector and the broadcasting system. The facilities are designed to ease emotional stress during blackout or emergency.

Spatial configuration

First floor: There is entrance hall, reception area, staff office, areas for multiple functions, baby room and kitchen.

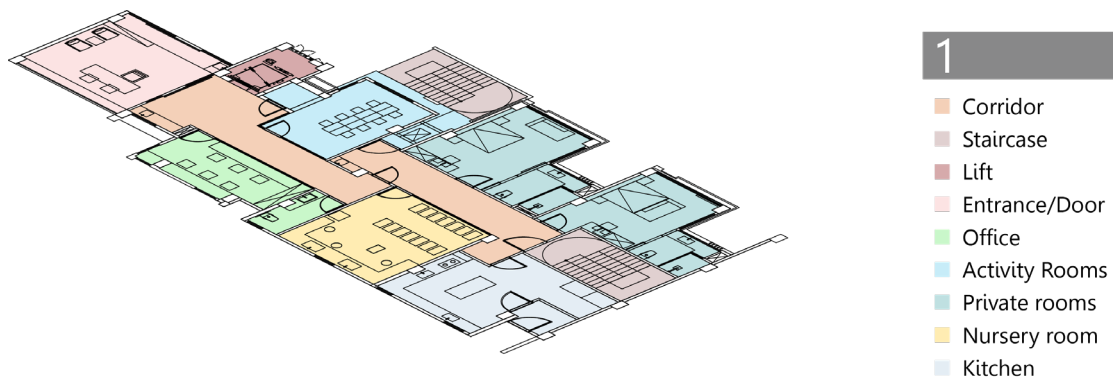


Figure 18. The building layout of first floor

Second and third floor: There are 3 qing yue suites with an area of 29.7 m², 3 he yue suites with an area of 33 m², 1lan yue suite with an area of 39.63 m² and storage.

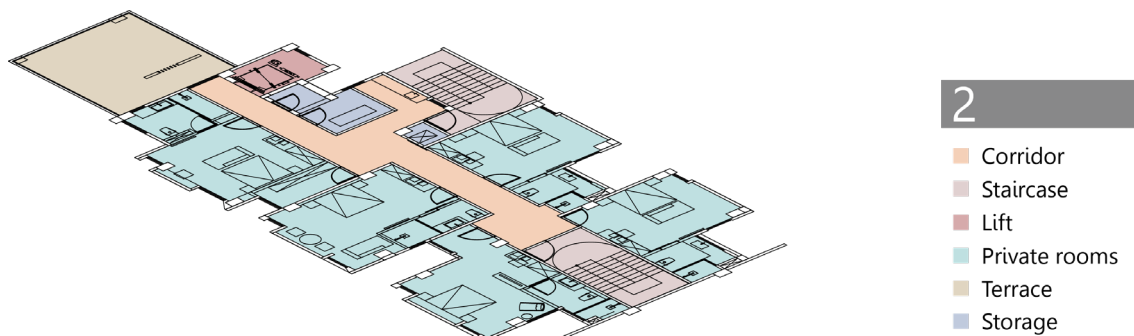


Figure 19. The building layout of second floor

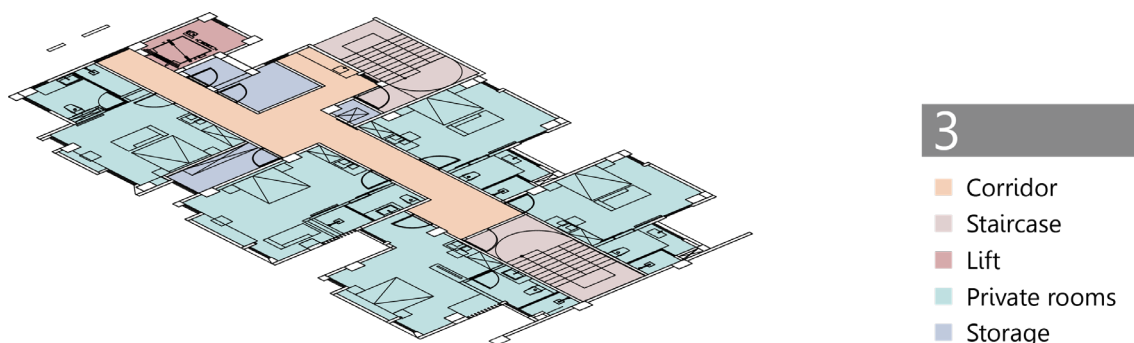


Figure 20. The building layout of third floor

Fourth floor: There are 3 qing yue suites with an area of 29.7 m² and mechanical penthouse.

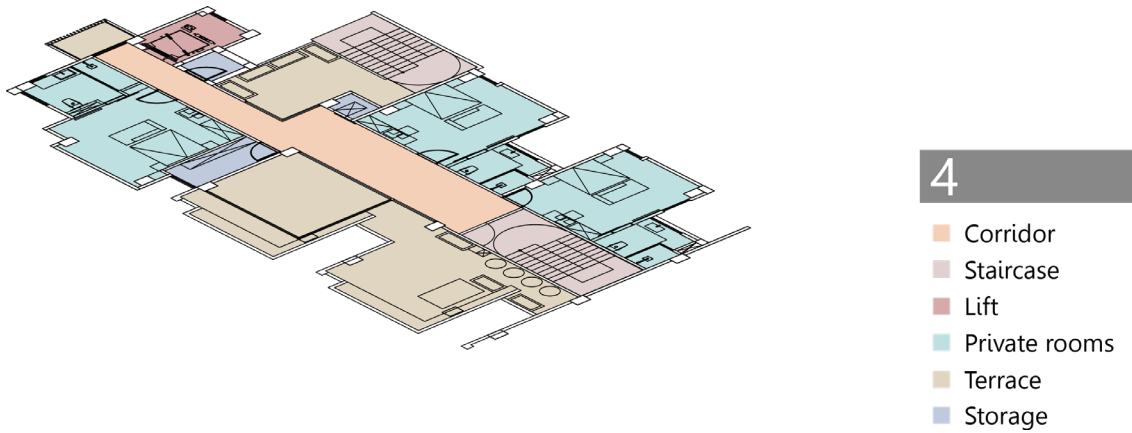
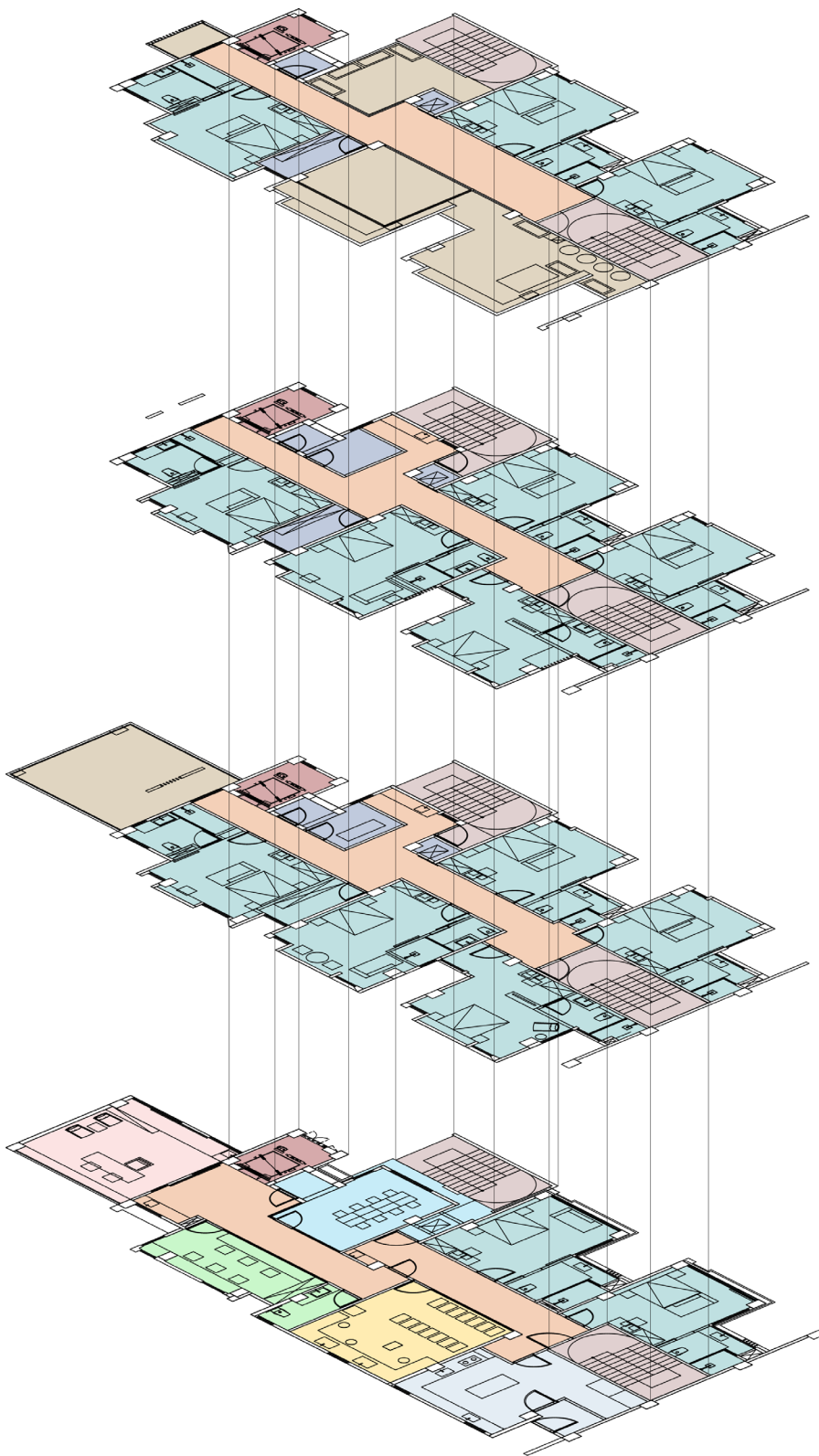


Figure 21. The building layout of fourth floor

Compared to the space utilization in other postpartum nursing care center, the rooms in In Moon Center are designed with large spaces, which mean that new mothers have more spaces for private activities. Most of the large rooms are even equipped with independent changing room and sliding door, which can divide the area into smaller spaces. For mothers who do not want to be disturbed, they can have their sliding door closed, and the staff will then place the meal in front of the sliding door.



4

- Corridor
- Staircase
- Lift
- Private rooms
- Terrace
- Storage

3

- Corridor
- Staircase
- Lift
- Private rooms
- Storage

2

- Corridor
- Staircase
- Lift
- Private rooms
- Terrace
- Storage

1

- Corridor
- Staircase
- Lift
- Entrance/Door
- Office
- Activity Rooms
- Private rooms
- Nursery room
- Kitchen

Figure 22. The configuration of the building

User research

According to the survey done by *In Moon Care*, the effective sample size is 60. The following discussion focuses on the discussion on space utilization and layout.

Chart 1-1 Basic information about new mothers in *In Moon Care* (effective sample size: 60)

The questionnaire is aimed at understanding the backgrounds of the customers of postpartum care center and offering sources for further discussion.

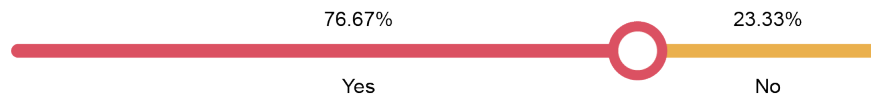


Chart 1-2 Information about new mothers in *In moon care*
(effective sample size: 60)

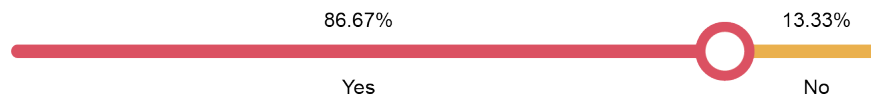
- Whether new mothers check for the registered status of the care center before moving in



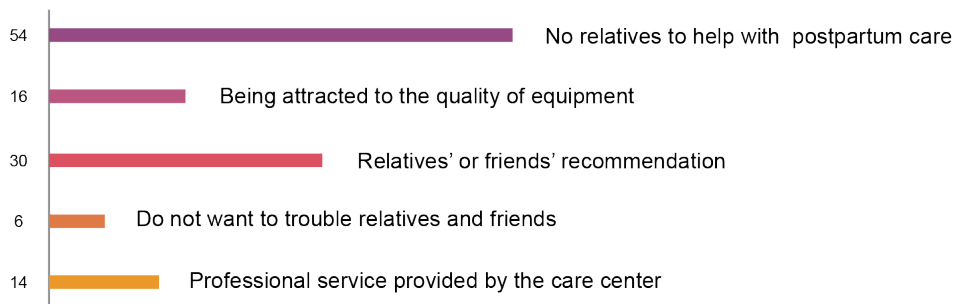
- Whether new mothers have compared deals before moving in



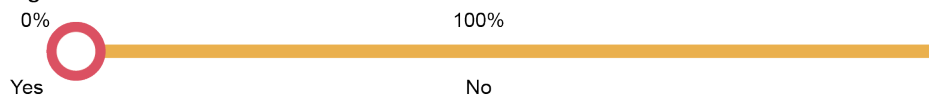
- Whether new mothers understand space utilization before moving in



- Reasons for choosing the care center
(up to 2 answers)



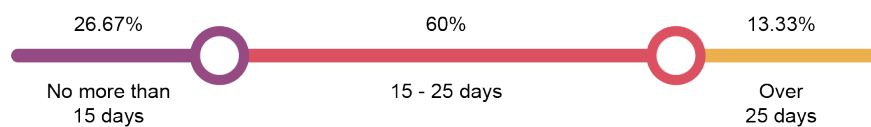
- Rooming-in



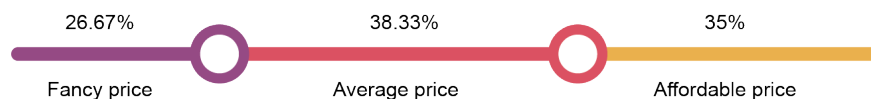
- Distance between the suite and the baby room



- Whether new mothers check for the registered status of the care center before moving in



- Price



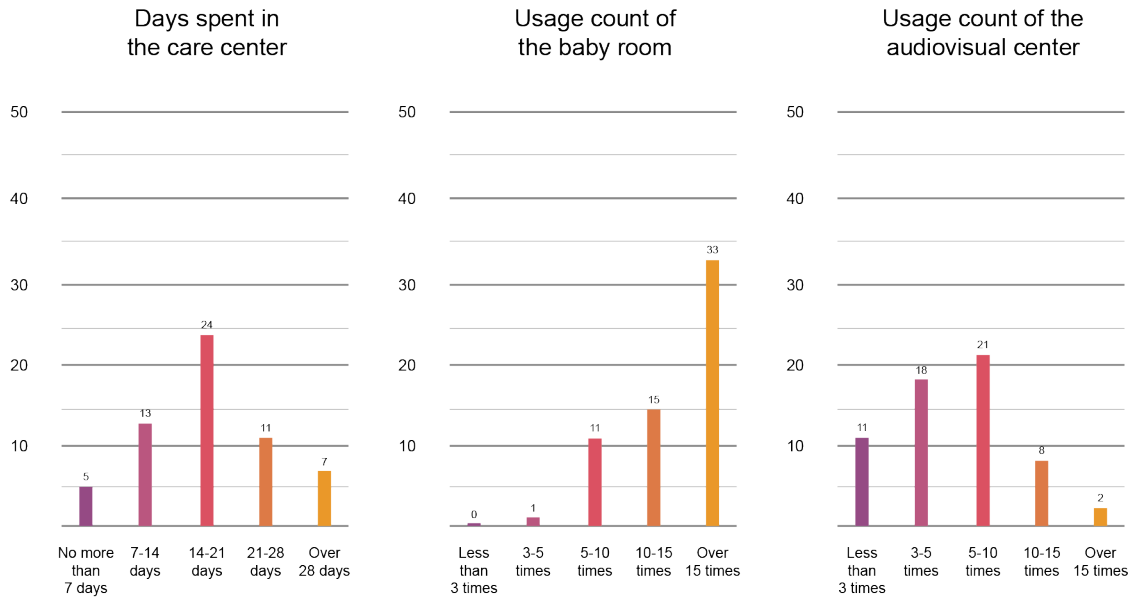
The reasons for coming to the postpartum care center are as followed: the main reason is that the family does not have relatives who can offer help. Though In Moon Care is situated in suburban area, it still caters to the need of people who come from Taipei and are looking forward to the large space in the care center. The families that belong to this category account for 90%. According to the pervious information of the new mothers, 50 % of the families are categorized as small families, which mean that there is no one who can offer postpartum care for the families. For those who live with parents or parents-in-law, the aged elders might not be able to offer help, or the elders might have already been helping to take care of other grandchildren.

The second most reason for coming to the postpartum care is through relatives' or friends' recommendation. Since the care center is not far from the cities, the care center caters to the need of the new mothers. Furthermore, there is a community of new mothers who share their experiences with others. The services, therefore, are in line with consumer's decision.

Before moving into the postpartum care center, about 86.67% of the couples will make a visit to the care center in advance; 76.67% of the couples will make a comparison between nearby postpartum care centers or the ones in the affiliated hospital. 80% of the new mothers will be aware of whether the care center has been legally registered. In terms of the days spent in care center, only 13.33% of the customers stay for 30 days, which is the so-called duration of 'Yuezi'. About 60% of the customers spend 15-25 days staying in the care center, and there are only 26.67% of people who spend no more than 15 days.

In terms of the distance between the suite and the baby room, new mothers have to go to the baby room to visit their babies. The baby room is 24/7 and mothers can only breastfeed their babies in breastfeeding room. Though mothers might want to stay in the suite that is closer to the baby room, the allocation still depends on the practical space utilization, which means that the distance between the suite and the baby room varies. Furthermore, to ensure that new mothers take full rest, rooming-in is not recommended. However, mothers can still bring their babies back to the suite.

Chart 1-3 New mothers' use of facilities in *In moon care*
(effective sample size: 60)



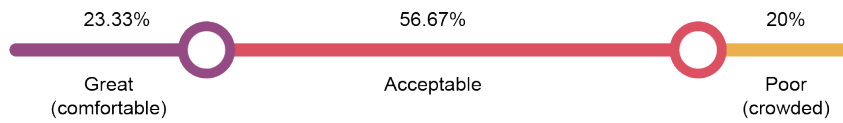
• Customer satisfaction for the suite



• Customer satisfaction for the baby room



• Customer satisfaction for the audiovisual center



The third section is a survey aimed at understanding the space most frequently used by new mothers and whether there are redundant spaces. To begin with, 88.33% of the new mothers think that the facilities in suites are acceptable, whereas 11.67% of the new mothers mention that they feel crowded.

In terms of the baby room, the questionnaire presents a set of questions regarding whether people feel crowded when there are 15 babies (the limit of maximum user) in the baby room. 46.67% of people think that the space is not enough, while others feel the space is either acceptable or satisfactory.

In terms of multi-functional room, which is mainly used as mothering classroom, 23.33% of respondents are satisfied and 56.67% of people consider the space acceptable.

In In Moon Care, new mothers must go to baby room to either breastfeed or feed their babies, which means that mothers need to move between the suite and baby room several times a day. Mothers can either breastfeed their babies in breastfeeding room or bring the babies back to the suite (but babies need to be brought back by mothers). The baby room is 24/7, and mothers can visit their babies any time. As a result, baby room is frequently visited by mothers, and the space utilization of baby room might be the second most places that receive new mothers' attention in the care center.

There are regular classes or random events in mothering room. The classes include guidance on cleaning the baby and newborn care. Yoga teachers will be invited to offer guidance on postpartum fitness. As a result, multi-functional room not only provides new mothers with relaxing space but opportunities to learn. When being asked whether there is need for adding some space in the future, quite a few mothers agree with the idea and hope that there would be more diverse and practical events in the future.

Conclusion

The services offered by In Moon Care are relatively high-priced. The quality living circumstance and professional knowledge from obstetricians for postpartum care put emphasis on postpartum examination and health care. In terms of space utilization, since the space is mainly reserved for the suite, the public space is thus not as spacious and is not able to offer more comprehensive services. In addition to the suite, In Moon Care also focuses on baby room: new mothers have to make personal visit to the baby room, which means that to make new mothers feel at home, the space utilization within the baby room, breastfeeding room and isolated room is of crucial importance.

2.4.4 Considerations for the design of a new postpartum care center

To sum up, the introduction of ancestral rituals of postpartum confinement, described in the previous chapter, indicates that the needs for postpartum confinement have changed over time from home health care to institutional care. In recent years, there has been the emergence of medical care services that combine with the postpartum care center. Different types of postpartum care institutions have similar demands, regulations and management methods. However, there are also different elements among each service.

Home health worker

There are more and more services provided by home health workers that assist in postpartum confinement. The niche is that the price is much cheaper than that of the postpartum institution. Also, home is the most familiar environment for postpartum women, and there are fewer cases of first night effect. It is more convenient for relatives and friends to visit at home. If there are older children at home, it is also more convenient to take care of them.

The disadvantage is that the relevant infection control measures cannot be properly planned. When visitors or someone at home catch a cold, it is easy to infect postpartum women and newborn children. Postpartum women have less activity space and are unable to cope with the illness, crying and needs of their newborn children. If they feel difficult or frustrated in nursing their newborn children, the new mothers might feel stressed or the difficulty in accommodating one's emotion, which makes it hard for postpartum women to relax and take good care of their bodies.

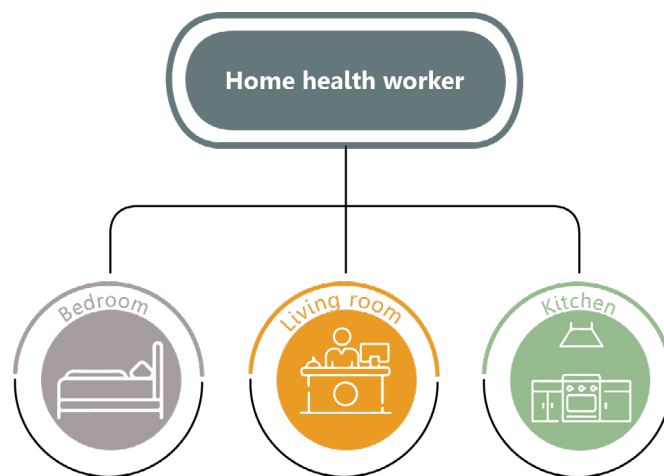


Figure 23. The analysis of home health worker service

Postpartum service center

Compared with the postpartum care center, the postpartum service center is smaller. Space can be separated into the reception area, kitchen area, leisure area, and accommodation area. The postpartum service center has no stationed doctors, but there is a nursing station. The nursing staff can provide 24-hours services. In addition, there are less options for leisure facilities and room types. The detailed space is as follows:

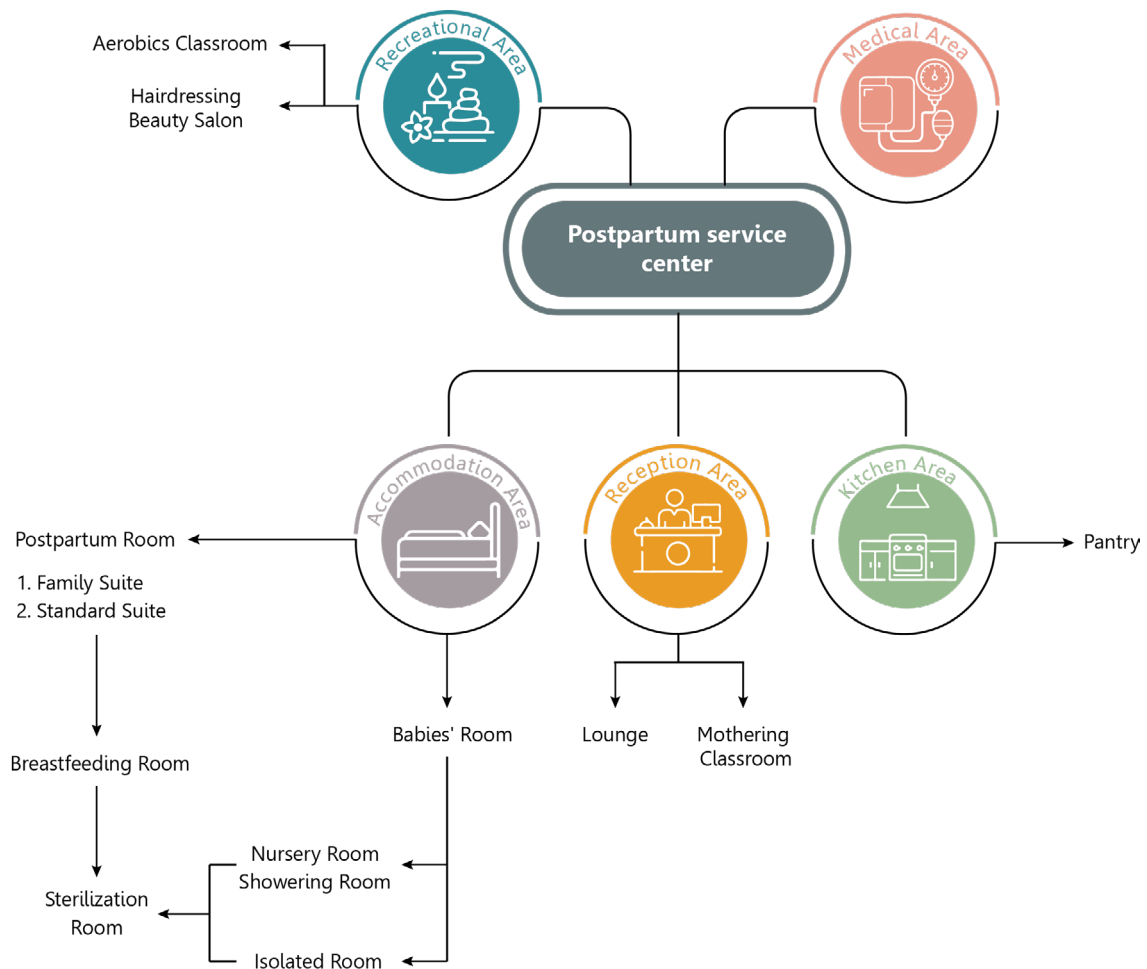


Figure 24. The analysis of postpartum service center service

Postpartum care center

The postpartum care center has a large scale. In terms of spatial planning, there are not only the reception area, kitchen area, leisure area and accommodation area, but also medical area. The care center not only has perfect space and equipment, but also is equipped with doctors and nursing staff that care and evaluate the health status of postpartum women and newborn children at any time. The detailed space is as follows:

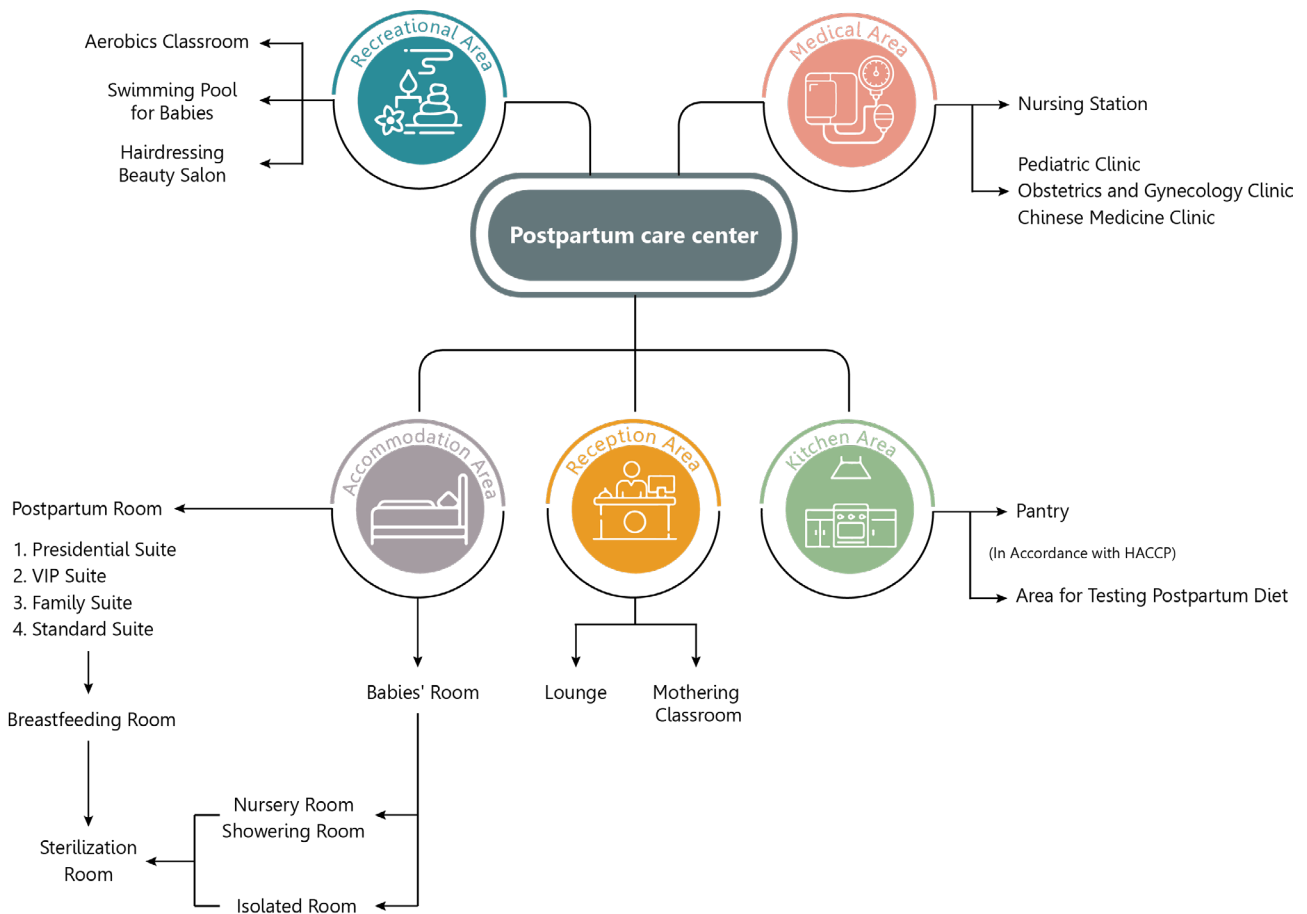


Figure 25. The analysis of postpartum care center service

According to the above analysis, it is obvious that there are differences among home health care, postpartum service center and postpartum care center. The space and equipment of the institutional care are quite large and complete. The home health care is a traditional kind of confinement in one's own home, which only meets the basic needs. From the perspective of spatial functional attributes, postpartum institutions can be divided into essential space and optional space.

Essential space:

Double suite, family suite, nursery room, breastfeeding room, isolation room, physician consultation room, health education classroom, newborn bathing area, multifunctional classroom, meeting room, kitchen, storage, spare area, tea Rooms, public toilets, etc.

Optional space:

Baby swimming pool, SPA beauty and body center, aerobics classroom, beauty salon, VIP room, presidential suite, restaurant, etc.

3

**A new system for postpartum
care service**

3.1 Design drivers

- 3.1.1 The system
- 3.1.2 The function and service
- 3.1.3 The place

3.2 The system of connecting the service

- 3.2.1 Medical and nursing service
- 3.2.2 Care for the newborn
- 3.2.3 Dietary service
- 3.2.4 Health education
- 3.2.5 Fitness service

3.3 Before design

- 3.3.1 Location
 - 3.3.2 The timetable of neo-mother
 - 3.3.3 Spatial feature and daily activities analysis
 - 3.3.4 Analysis current typical residence in Taiwan
-

Chapter 3 A new system for postpartum care service

3.1 Design drivers

The COVID-19 pandemic has led to many changes around the world. To deal with different situations, the traditional way of operating business has also faced challenges and thus is in need of transformation.

Take the Chinese custom of 'sitting the month' for instance. Postpartum care center caters to the need of modern people as it provides a string of services that feature professionalization and simplification, which is all based on the concept of standardization in a bigger scale. It combines the users and servers in a massive building. As a result of the COVID-19 pandemic, however, new mothers and newborns seem to be in danger of clustering.

I therefore propose a concept that features flexibility. An analysis of the existing service type with a concept of network structure is followed by a pop-up postpartum care platform that features decentralization, diversity, and immediacy.

3.1.1 The system

Creating a platform that is accessible and feasible. After selecting desired postpartum care service, you can find places featuring accessibility and proper arrangement and further receive a set of customized service. Women who are not pregnant or who have not yet given birth can take advantage of postpartum online, delivery or onsite services, all of which are based on the service-oriented concept. Such services alleviate the pressure incurred during accommodation period, feature standard operating procedure and offer a limitless combination of accommodations for customers.

3.1.2 The function and service

With online, delivery or onsite services, the postpartum care services are added to existing accommodation (residence, B&B and hotel). In addition to the comfortable environment and healthy diet of a traditional postpartum center, add-on services are more personalized. The services include accommodation, dietary, regular nursing service, medical consultation and other health education regarding raising a child. The space is flexible for changes when it comes to meeting up with friends, working out, having a variety of classes and holding activities for mothers and infants.

3.1.3 The place

The concept for design is to create a customized and quality space for every new mother and infant. Thus, system furniture and partition wall are designed to respond to the need. In the past, it is customer's duty to get used to the facilities, which makes it difficult to offer personalized service with standardized room types in a large scale. However, the current room types with a smaller scale and diversified choices allow for multiple and potential uses.

3.2 The system of connecting the service

3.2.1 Medical and nursing service

With technology such as 5G and IoT and video chat, new mothers can send their physiological data and images to physicians to receive telemedicine services. This type of service allows physicians from different divisions to provide outpatient services as well as medical personnel to visit daily. Therefore, without face-to-face medical service, new mothers can still receive comprehensive medical treatment.

3.2.2 Care for the newborn

Newborns are closely connected to mothers. Within the system, caregivers live with new mothers and can further offer customized service. With 24-hour care for the newborn and the new mother, new mothers are able to take a full rest, both mentally and physically, in the postpartum period.

3.2.3 Dietary service

Postpartum diet is prepared in the central kitchen and sent through logistics. Since new mothers and newborns are rather sensitive to food, food safety is of great importance. The diet includes a description of the food's origin (Nature's Life) and certification, and the entire process is regulated by a cold chain. The food is also preserved in the fridge after being sent to new mothers' place to ensure the quality of food.

3.2.4 Health education

Telemedicine and daily visit from medical personnel allow new mothers to receive comprehensive health information. Moreover, with caregiving taking up around 24 hours, new mothers can learn how to take care of the baby. Getting hands-on experience and such services also help parents learn more about what to do as a care giver in the future.

3.2.5 Fitness service

Because the uterus stretches the muscles in the abdomen to accommodate the growing baby during pregnancy, new mothers have loose skin after pregnancy. With proper workout, the muscles in the abdomen, cavum pelvis, ligament arrangement can be back to their normal condition. The on-site one-on-one coaching allows new mothers to become more aware of their physical condition in postpartum period and get physically prepared for taking care of the newborn.

3.2 3.3 Before design

3.3.1 Location

'Location, location, location', just as Tiziano Aglieri Rinella once said, location is of great importance when it comes to locating a hotel or a nursing center. However, this concept only applies to the traditional business model, in which the location is a determining factor.

This new service, however, has worked the other way around. Instead of focusing on location, we attended to new mothers' need and offered diverse accommodation on the platform. Accommodations are a matter of personal choice, and everyone has different priorities. Thus, the more choices there are, the easier it is for the public to receive comprehensive and customized service.

Some new mothers may have a sense of security and have more opportunities for follow-up checks in the hospital when they choose a postpartum care center near the hospital.

There are even new mothers who want to enjoy tranquility in places like mountain or seaside. If transportation permits, every location can be a potential location.

3.3.2 The timetable of neo-mother

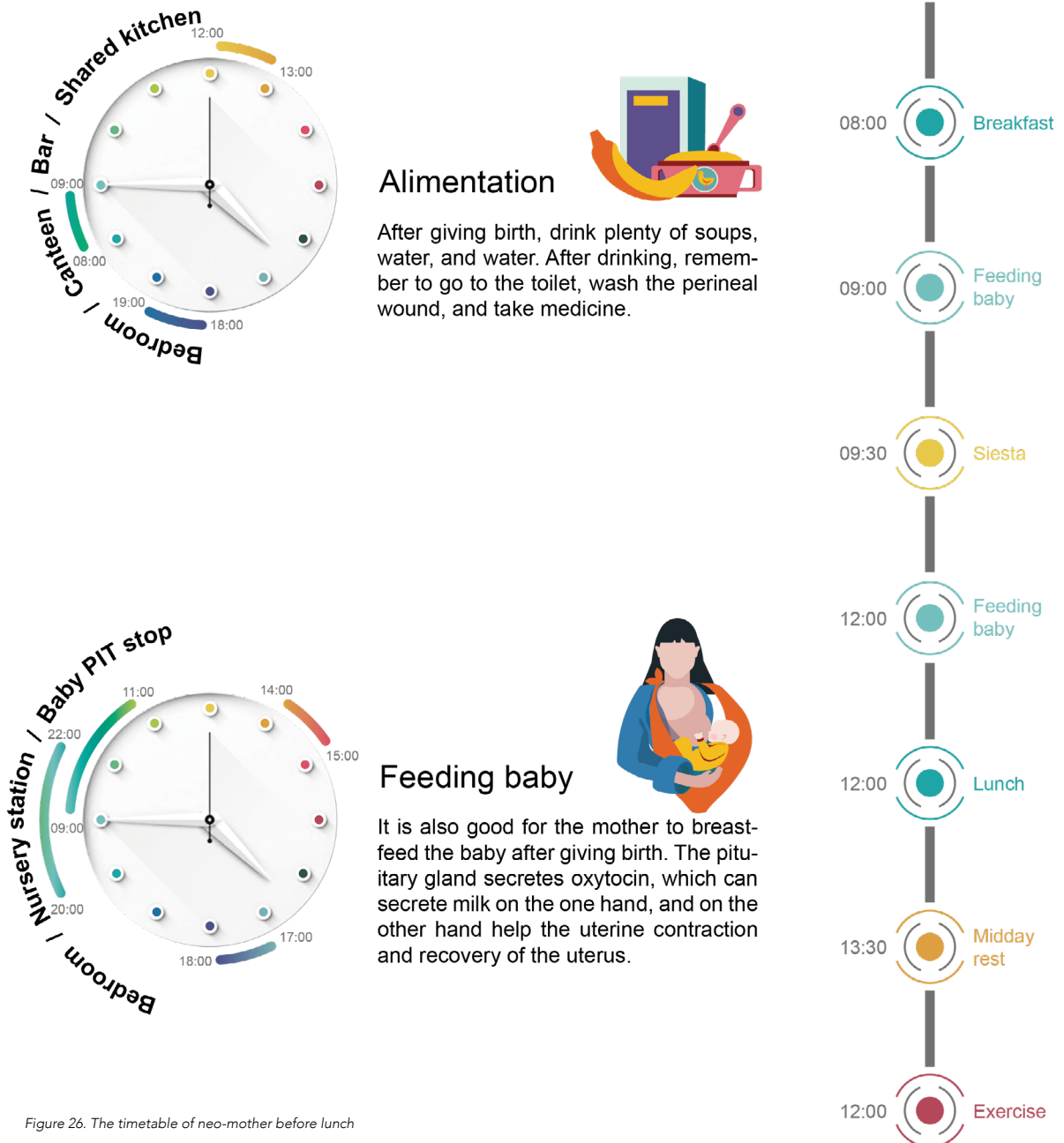


Figure 26. The timetable of neo-mother before lunch



Leisure

6 weeks postpartum is a transition period for the body. The hormone levels in the body have not yet stabilized. The body has strong plasticity and everything is possible.



Sleeping

Lack of sleep brings a lot of harm to mothers, not only is it not conducive to the recovery of the body, but also leads to a decline in immunity, and the system of defense against diseases will gradually weaken, which will cause many confinement diseases.

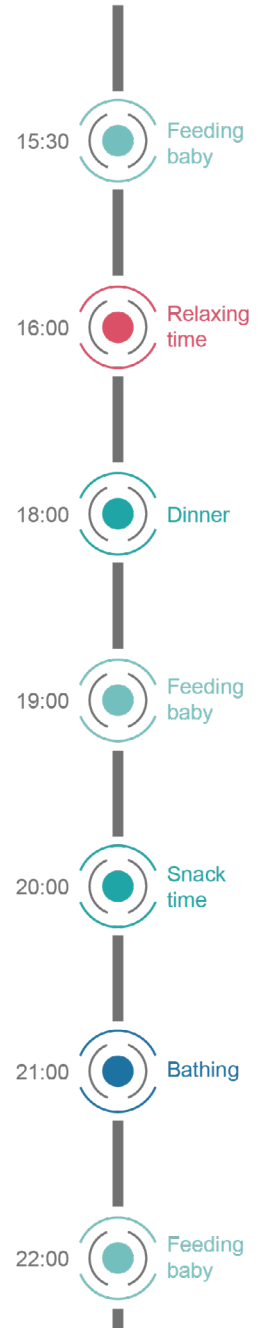


Figure 27. The timetable of neo-mother after lunch

3.3.3 Spatial feature and daily activities analysis

A new mother's daily activities and the time or frequency spent on those activities can be clearly presented with the chart. With the analysis of activities, one can realize the utilization of space and further realize the relation between activities and space. Discussions on different arrangements of postpartum care centers and their functions can serve as the basis for the development of the next stage.

Suites for new mothers

Women who have just given birth usually spend a lot of time in suites because they are not comfortable walking. They sleep, breastfeed, eat and meet with friends in suites. The privacy and sound-proofing insulation is thus very important. Furthermore, the appropriate spatial arrangement takes into account the location of the baby's bed as well as guests staying overnight.

Opening the window allows sunshine to go through the room. However, since mothers are breastfeeding and will thus wear casual outfit, the location and size of window should take into account of lighting and privacy. The relative space between the bed and the room is also important, since medical personnel will be coming in and out of the room. Ventilation and lighting can greatly increase living quality. Due to the fact that new mothers should avoid cold, a balcony is not a necessary design.

Bathroom

New mothers are rather weak. It is a must that bathrooms be equipped with handrails, anti-skid floor and heater so that new mothers won't get cold due to temperature difference. Bathrooms are also where new mothers clean their babies, and it is thus important to pay attention to the height and location of baby's bathtubs. Also, bathrooms are considered a place of greatest privacy as new mothers can observe their physical changes in bathrooms.

Baby's room

The newborns receive care from medical personnel in baby's room. Mothers and visitors can observe babies through glass and discuss babies' conditions with medical personnel. The arrangement of baby's room can be categorized as two following types: Infants can be sent to their mothers' rooms in the first type, while in the second type mothers must visit and breastfeed their babies in person. The layout will thus be varied based on the two different concepts.

Take the first type for instance. Babies' rooms of the first type are equipped with examination room, observation room and isolation room.

The reason that there will be no breastfeeding room is because both breastfeeding and instructions on breastfeeding will be done within the new mother's own room. The second type, on the other hand, is equipped with examination room, observation room, isolation room and breastfeeding room. The breastfeeding room is adjacent to babies' room so that medical personnel can also give instructions if needed.

Examination room, observation room, isolation room and breastfeeding room

Examination room, observation room, isolation room and breastfeeding room have similar features, which offer service for babies' room. Mothers have access to breastfeeding rooms and examination rooms, which are usually located near the entrance or exit of the baby's room, according to space flow. As for isolation rooms and observation rooms, they are both independent spaces with independent air conditional system, which is aimed to prevent infection. New mothers and medical personnel are the only ones permitted in the breastfeeding room to ensure privacy.

Multi-functional room

New mothers and their relatives have access to multi-functional rooms. Also, multi-functional space is a place for reception and welcoming potential customers. Due to the possibility of noise, multifunctional spaces have a distance from new mothers' rooms.

Reception room

Reception room is a public space where new mothers can meet up with relatives or friends. Each floor is equipped with a reception room so that new mothers do not have to go to different floors. Also, people can also clean vegetables and fruit, heat food and do some disinfection in reception room.

Kitchen

Kitchen is a place where new mothers' meal (5-6 times a day) is being prepared. The transport of large amount of frozen food is related to flow of space as a well-designed kitchen avoids problems of congestion. If kitchen is located in higher floors, the design of space should be designed vertically. To avoid issues of fire, kitchens are often located on refuge storey or near roof. In terms of the transport of food, kitchens should be located near vertical lines so as to prevent the babies' rooms from being disturbed by the noise and smell from the kitchen.

SPA Beauty Center

There are two sections in a spa beauty center: the area of consulting and the area for service. The consulting area is not much affected by disturbances, while the area for services should be equipped with separate rooms to ensure privacy. The focus on privacy might be a lure for new mothers and even other people. SPA beauty centers offer professional knowledge and cater to mothers who are interested in postpartum fitness.

Hair salon

It is recommended that hair salons be located in places of low disturbance because new mothers often have casual wear and do not expect others' attention when having their hair washed. Also, because the main facility is only a chair for hair wash, a hair salon can thus be combined within a spa beauty center.

Postpartum recovery center (Fitness room)

Fitness room is not much affected by disturbances and can be seen as an open space. This place is thus rather tolerant of noise and should avoid being located above mothers' room.

Aerobics center

Aerobics center is also not much affected by disturbances and can be seen as an open space, which shares similarities with fitness room and be combined together. Also, because postpartum recovery is a focus for many new mothers, aerobics center can be displayed in a prominent position.

3.3.4 Analysis current typical residence in Taiwan

An analysis of types of rooms for rent in Taiwan

Currently, the rooms for rent in Taiwan can be categorized as following: shared rooms, studios, flats and single houses. The detailed information is as followed:

1. Shared rooms:

Generally, there is only one bedroom in a shared room, and the bathroom equipment is a shared property with other tenants. Shared rooms are oftentimes located in areas of high population density. Shared rooms are often located in areas with high population density.

2. Studios:

Studios refer to a room with private bathroom equipment, and the size of a studio is usually larger than that of a shared room.

3. Flats:

Flats are often seen in an apartment and usually consist of living room, more than one bedroom and bathroom. Flats are suitable for a whole family.

4. Single houses:

Single houses are independent residence and are often located in areas with low land prices.

Take Taipei, the capital of Taiwan, for instance. Since the land prices there are relatively high, most of the rooms for renting are often small in size. The types of rooms for renting can be classified as flats, studios and shared rooms.

Sampling and Analysis

According to the rooms for renting on the renting platform, the most common rooms for renting is 20-year to 30-year congregate housing in Taipei. Therefore, the analysis is based on typical floor of 25-year congregate housing. The analysis will further introduce the common medium-small size in Taiwan in recent years and concludes with the most common type of congregate housing with map overlay analysis.

Image analysis is a theory and approach for describing a physical space. A physical can be classified into the 'physical' and 'virtual' part; the physical part can be further classified into 'unit structure and appearance' and 'interior decoration'; the virtual part refers to the space in which a user conducts activities. (Chen, 2004)

Overlay analysis presents layouts with digital images and further figures out the common sizes and types in residence. The overlay analysis integrates and analyzes the relevant layout information and uses it as a basis for subsequent analysis and design.

Analysis of Structural Columns

With layouts collected from each congregating housing, the analysis includes two following basic structure through overlay analysis. The analysis and integration is as followed:

Single Span between Two Columns

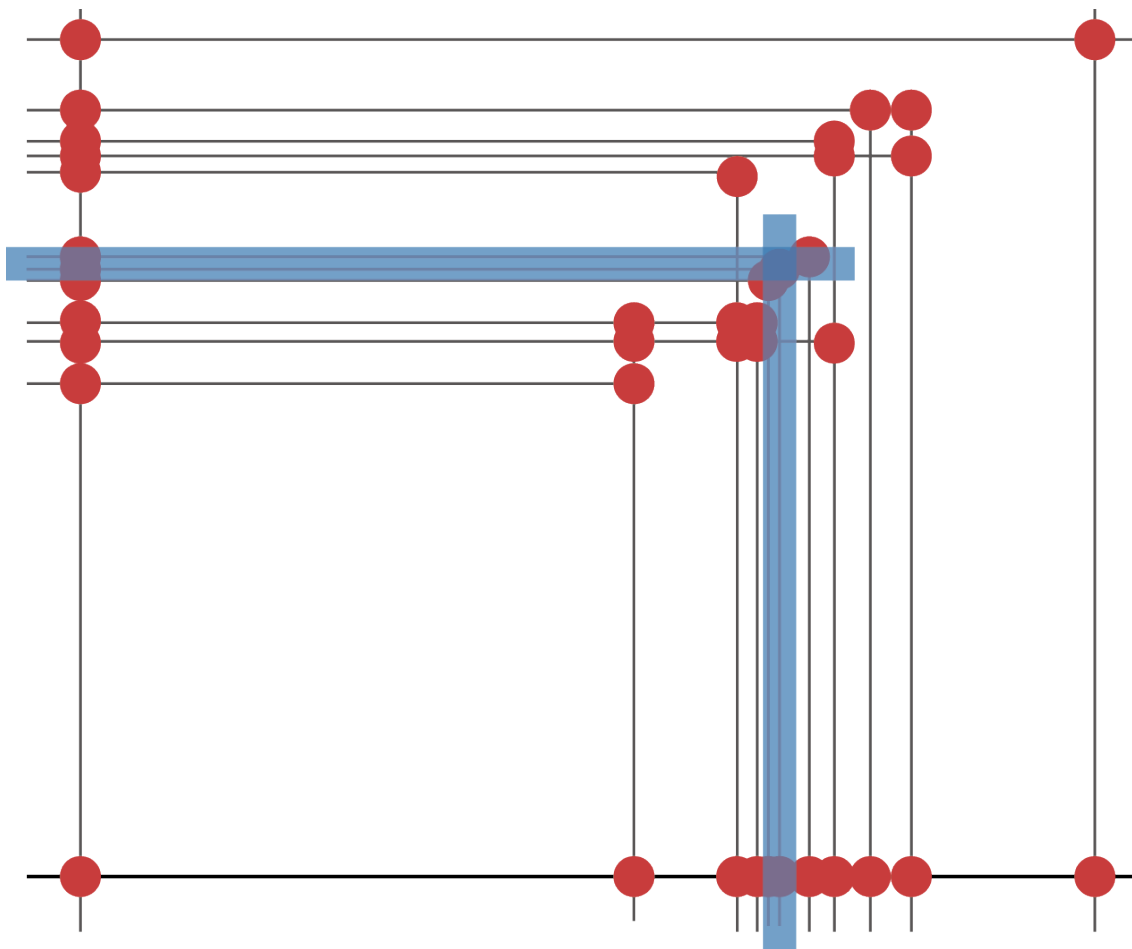


Figure 28. Results of overlay analysis show highest repetition in four drop points

1.5 Span between Two Columns

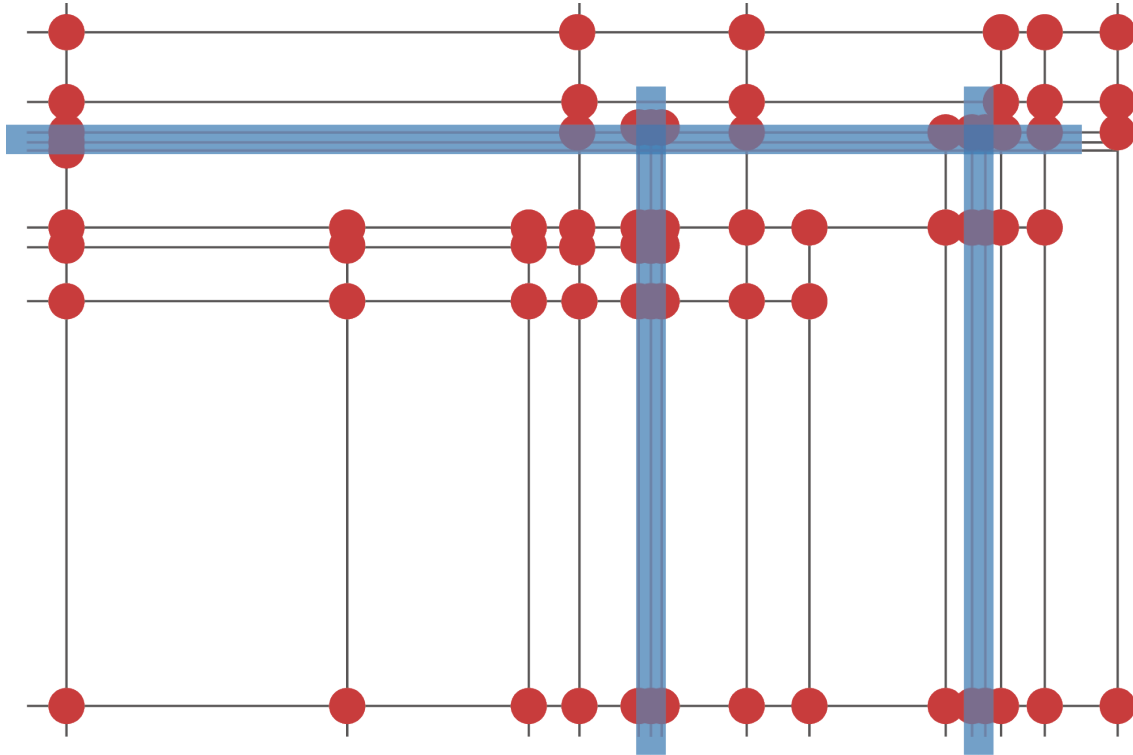


Figure 29. Results of overlay analysis show highest repetition in six drop points

Results of overlay analysis show most repetition in six drop points, which are usually units that share three spans between two columns with another unit or units that share two spans with public property.

Single Span between Two Columns

The main structure of this unit is situated in four corners, with an interior size being 9m in length and 8.1 m in width as shown.

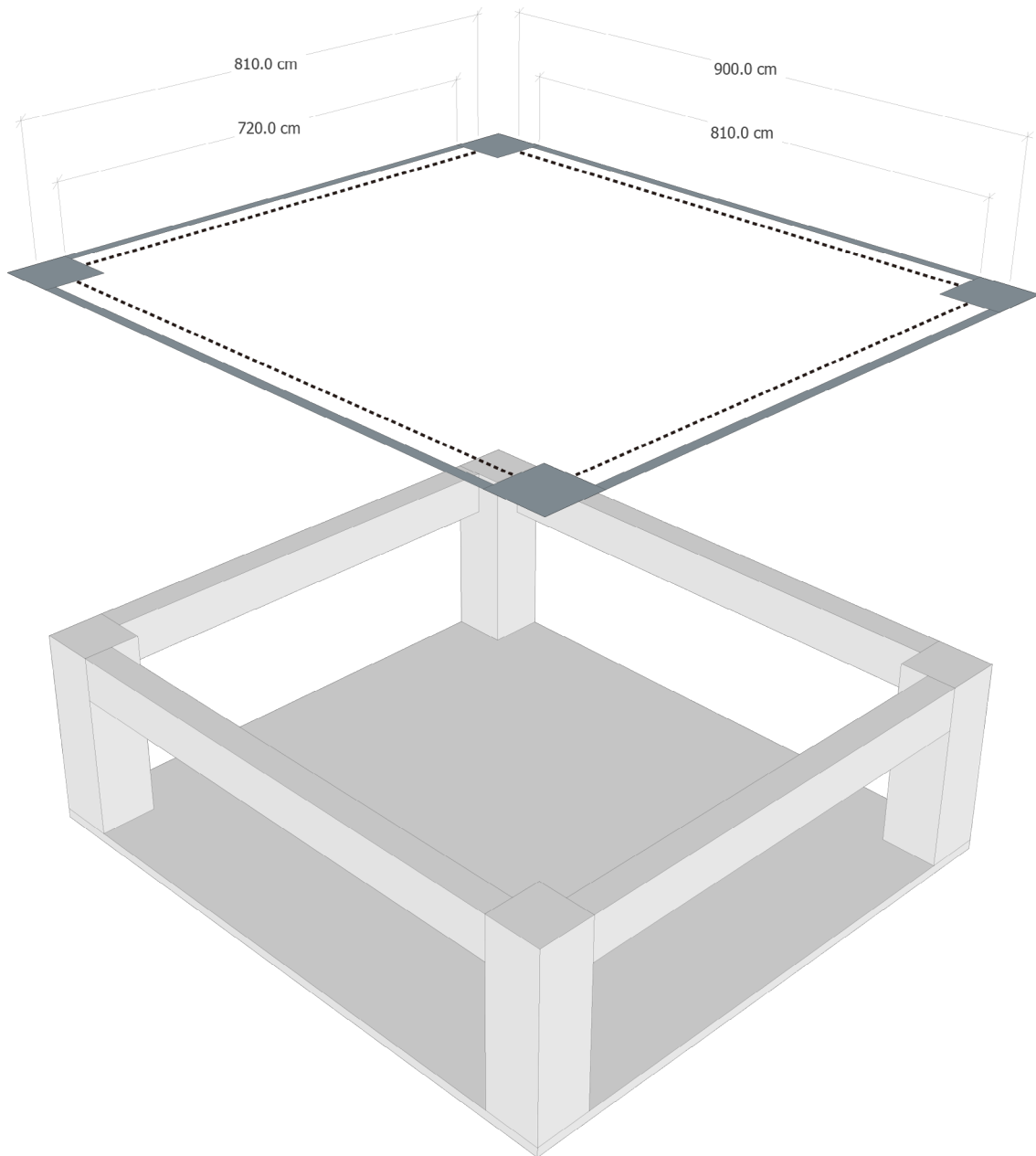


Figure 30. Analysis on structure in four drop points

Size: about 72.65 m²

Column dimension: 90cm * 90cm

Girder dimension: 45cm(W) * 70cm(D)

Width between longitudinal columns: 810cm

Width between short columns: 720cm

1.5 Span between Two Columns

This type of unit often shares three spans with another unit or shares two spans with public property. The interior size shows 8.5m+4.5m in length and 8.1m in width.

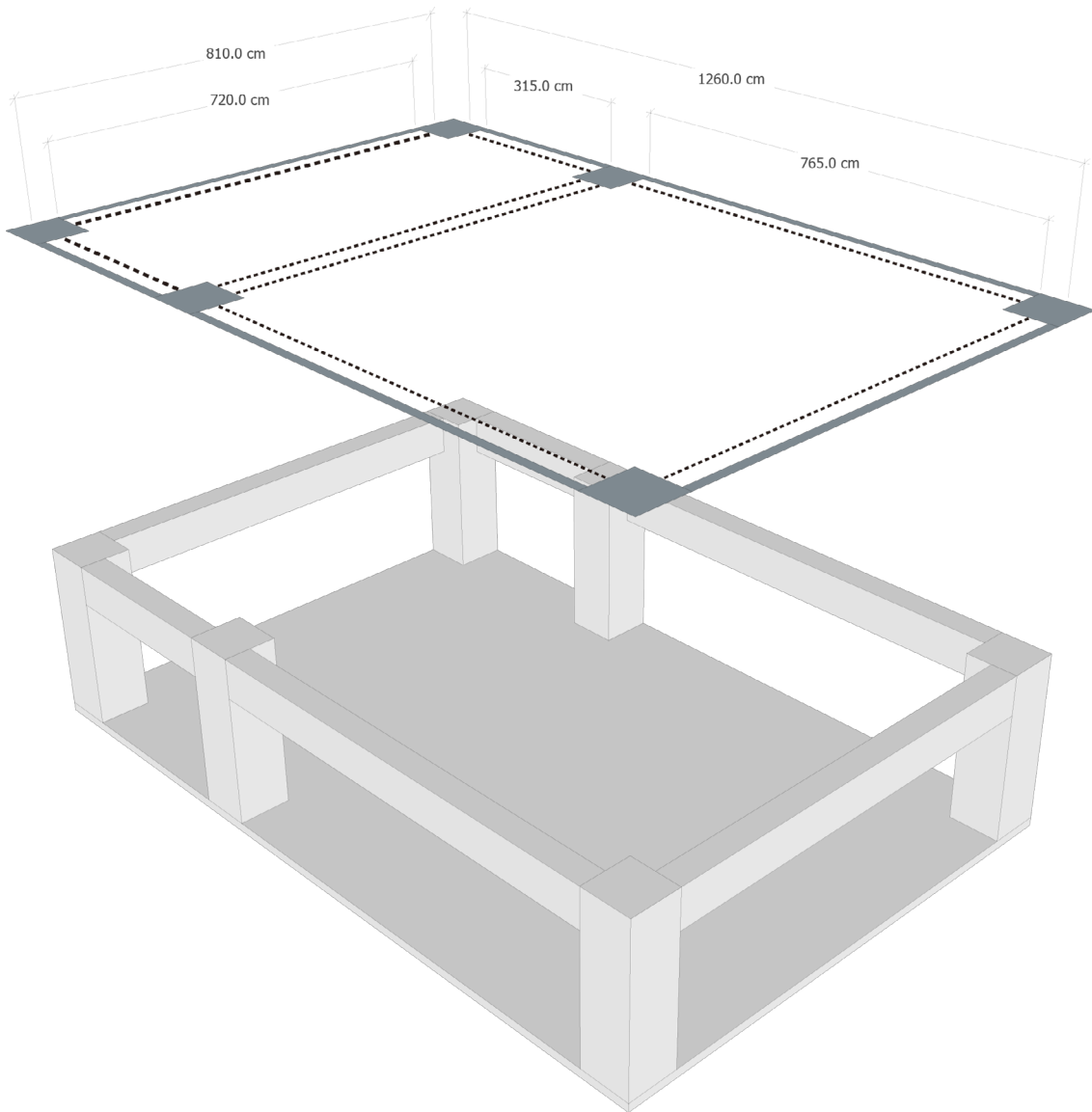


Figure 31. Analysis on structure in six drop points

Size: about 102.37 m²

Column dimension: 90cm * 90cm

Girder dimension: 45cm(W) * 70cm(D)

Width between longitudinal columns: 765cm

Width between short columns: 720cm

Analysis on Space Use

Types of Household

Take the largest city, Taipei, for instance. The analysis is based on the two-room and three-room layout in congregating housing and conduct analysis on residential space use. Based on its size, congregate housing of this type can be classified into two kinds of units, which are 53~198m² and 79~100m² respectively.



Figure 32. Typical residential layout of two-room model in Taiwan

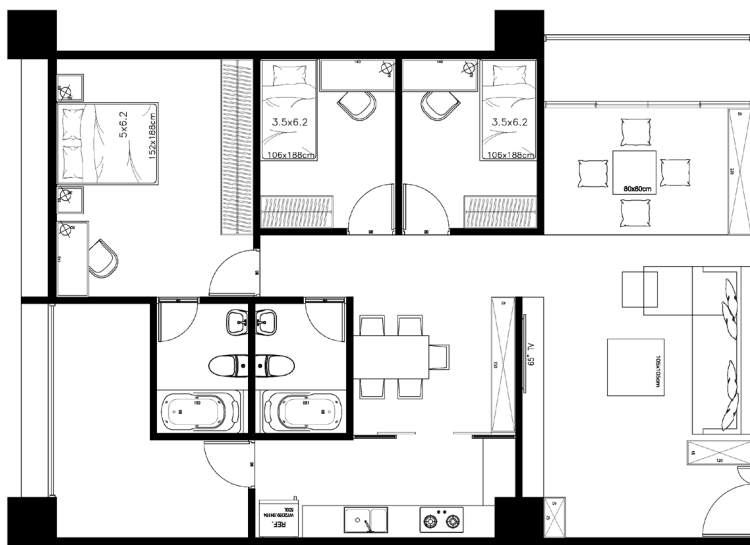


Figure 33. Typical residential layout of three-room model in Taiwan

Features of a Spatial Unit

Living room

Being the center of a family, the function includes family gathering, reception and recreation. To satisfy the demand, the width of the living room is the largest as well as the most square-shaped.

Dining room

It is the family's main dining area and also a place for gathering, recreation and individual activity. Dining room can be used as another living room.

Kitchen

Kitchen is a place where a family prepares food and places a variety of materials and equipment for cooking. Thus, a place of storage will be convenient for the family. Currently, housing will small sizes often combine an open plan kitchen with a dining room so as to make the best use of the space and ensure the flow.

Bathroom

A bathroom is a place where a family takes showers, cleans, and relieves themselves. It is thus important to ensure ventilation and seal for pipelines to increase its quality.

Single room

Single room is a place where one takes a rest. Furniture in the room includes a bed, closet, and desks, all of which require careful arrangement in order to maximize the space.

Different spans lead to a variety use of arrangement. Using the two structures mentioned in the previous chapter, the following analysis will integrate a scenario based on the types of use and arrangement typically found in units in Taiwan. The analysis will be presented with bubble diagrams. Two bubble diagrams are proposed for each structure and serve as a basis for potential variation for arrangement.

Scenario Analysis of Single Span between two columns

When it comes to single span between two columns, the columns are located in four corners of a unit, with the length being 9 m and the other side being 8m (as shown in the previous chapter). The overall interior area covers 72m². Based on users' need, the space is a combination of a living room, dining room, kitchen, bathroom, bathroom and single room.

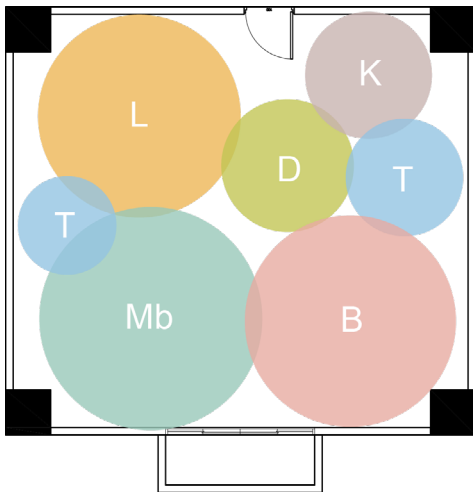


Figure 34. Basic variable A-01

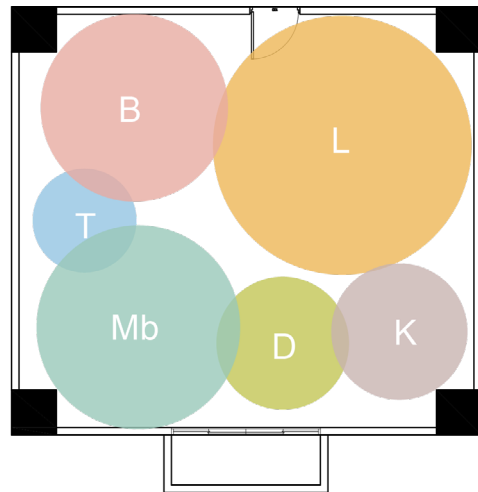


Figure 35. Basic variable A-02

Basic variable A-01

Public area (living room, dining room and kitchen) is located in the first half of the unit and is separated from private area (bedroom and bathroom), which is aimed to increase privacy in the bedroom. As people tend to spend most of their time in a living room, a master bedroom, and other bedrooms, these rooms can be located in places with windows that can be accessed.

Basic variable A-02

A living room is located in the entrance/exit of a unit, which makes the smooth flow for visitors. The kitchen and dining room are located in places with windows that can be accessed so as to remove the oil fume. A bathroom that is accessible to visitors is located near the living room.

Sub-variation of basic variation A-01

Sub-variation of basic variation proves the feasibility of the spatial arrangement. The arrangement is as followed:

The scenario in sub-variation A-01

In sub-variation A-01, there is a four-seater sofa and an open plan kitchen. The open kitchen and dining room can be seen as a complex. The master bedroom is equipped with a separate bathroom, which means that one doesn't have to use the bathroom with other family members or visitors. Moreover, the bathroom features its separate bath and shower. The four-piece arrangement has only one balcony in every unit, which ensures that the users of the master room do not have to share the balcony with others. With a partition wall in the center of balcony, there will be a balcony for public and private use. A single bed and a desk are available in the other bedroom for the minors or elderly who are single.

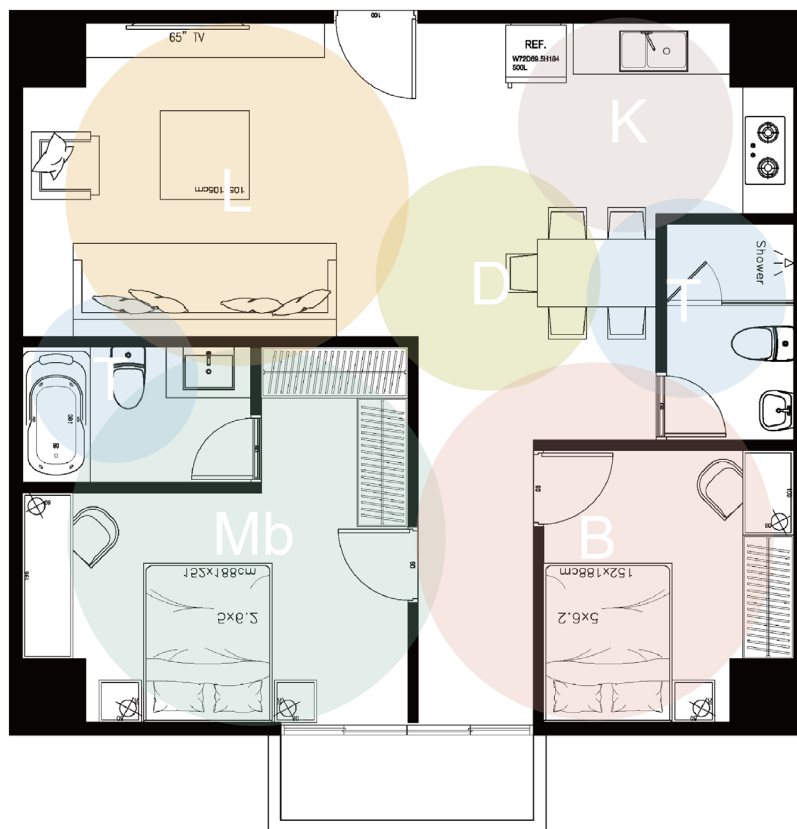


Figure 36. Bubbles Diagram of sub-variation A-01

Sub-variation of basic variation A-02

Sub-variation of basic variation proves the feasibility of the spatial arrangement. The arrangement is as followed:

The scenario in sub-variation A-02

The main difference between sub-variation A-01 and A-02 is that in A-02, there are two single beds and two desks in the bedroom, which are available for two minors. Because there is only one bedroom in the apartment, the bathtub and washbasin and toilet are separated by a partition wall, preventing time overlapping. As for the balcony, the users of master bedroom can use part of the balcony.



Figure 37. Bubbles Diagram of sub-variation A-02

Scenario Analysis of 1.5 Span between two columns

When it comes to 1.5 span between two columns, the columns are located in four corners of a unit, with the length being 1260cm and the distance between two spans being 765cm. The distance between the column and inner wall is 405cm in width and 810cm in length. The distance between two spans is 720cm (as shown in the previous chapter). The overall interior area covers 99.07 m². Based on Taiwanese users' need, the space is a combination of a living room, dining room, kitchen, bathroom, bathroom and single room.

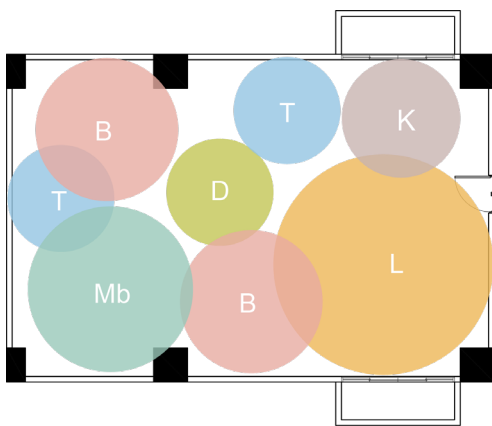


Figure 38. Basic variable B-01

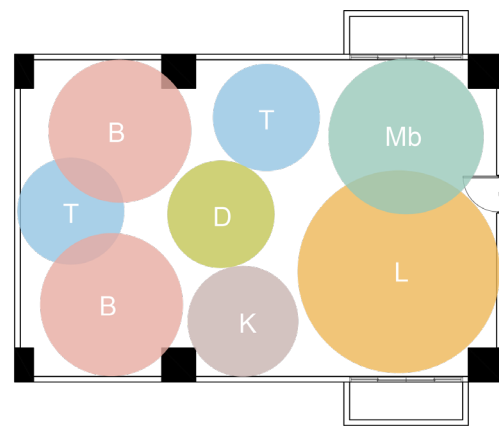


Figure 39. Basic variable B-02

Basic variable B-01

The design caters to users' need: the living room and kitchen are located in the entrance/exit of the front and back side balconies, which makes good ventilation and lighting in the lounge. The master bedroom and another bedroom are all located in the places with windows that can be accessed. The design is aimed to create a good space for sleeping.

Basic variable B-02

The main difference between basic variable B-01 and B-02 is that in variable B-02, the master bedroom is located near balcony with windows that can be accessed, which enables the users of master bedroom to use the balcony on their own. Another bedroom and kitchen are located in places with windows that can be accessed, which ensures good ventilation. If the two-piece housing is represented as a townhouse, there are no windows in the bathroom, causing problems with dehumidification and ventilation. In order to deal with the problems, other hardware facilities will be important.

Sub-variation of basic variation B-01

Sub-variation of basic variation proves the feasibility of the spatial arrangement. The arrangement is as followed:

The scenario in sub-variation B-01

The users of this sub-variation B-01 are three minors that come from a family with low income. Three minors two will share two bedrooms, the larger of which will be the bedroom for two minors. As for the master bedroom, it is equipped with a separate bathroom space and two washbasins, which allow different users to occupy the space at the same time. In another bathroom, there is separation between washbasin, toilet and showering space so as to prevent time overlapping.



Figure 40. Bubbles Diagram of sub-variation B-01

Sub-variation of basic variation B-02

Sub-variation of basic variation proves the feasibility of the spatial arrangement. The arrangement is as followed:

The scenario in sub-variation B-02

The difference between sub-variation B-01 and sub-variation B-02 is that in B-02, two bedrooms are equipped with a double bed and desk, which are available for minors or elderly.



Figure 41. sub-variation B-02

4

Eclosion: a pop-up postpartum care center located in any potential residence

4.1 Concept

- 4.1.1 Brand character
 - 4.1.2 Space needs meet concept
 - 4.1.3 Spatial configuration
 - 4.1.4 Conclusion
-

Chapter 4 Eclosion: a pop-up postpartum care center located in any potential residence

4.1 Concept

The force of incubation

To undergo transformation between immature and mature stages, a caterpillar goes through a remarkable stage in which it restores energy and becomes a pupa, with the purpose of becoming a butterfly. The entire stage is a process of adjustment and preparation.

Eclosion is a stage of metamorphosis in which the original figure transforms into a proper body type. The maturity utilizes its energy to break through the outer form and fly with wings outspread.

My perception toward this new service is that the stage of eclosion resembles a new mother's physical as well as mental transformation during pregnancy. It requires full mental preparation to deal with future challenges. As a woman becomes a mother through the postpartum period, it is a significant stage in her transformation. Therefore, I apply the "Eclosion" concept and use it as a name to postpartum care.

4.1.1 Brand character

Eclosion presents an unconventional postnatal care space characterized by innovation, speed, flexibility, youthfulness and possibilities. Think of postpartum care as the incubation phase before the mother begins to nurture the newborn, and use the image of the continuous energy gained during the incubation process as the starting point for developing spatial identity. Eclosion was inspired by the incubation period, the provision of various nutrients and the creation of an appropriate environment. In order to create relaxation and a safe space. The materials used by Eclosion are mostly based on organic material. For example, woods featuring soft and moist texture, cotton and linen fabrics, marble, and stone tile which are all from nature. The combination is presented with a flexible arrangement that can blur the boundary of each space creating comfort. Another key element is the arrangement of the path. The way of arranging each subordinate space with the bedroom as the center can not only echo the mother-centered design concept but also allow users to change their perception of space and achieve the possibility of changing the space according to their needs. In terms of the use of colors, Eclosion mainly adopts light tone with warm colors, which shift the items into the background and create a sense of harmony in a smooth manner.

The idea of space identity is inspired by:

Recreational vehicle / Leslie Travers.

The idea of run-down is inspired by:

Incubator (from offering assistance to maturity)

Materials used:

wood, marble, stone tile, cotton, wool, brass, and vegetations

Key elements:

warm and soft lighting

Colors used:

colors with a warm tone



Figure 42. Material mood board

Project overview

The project is a new form of postpartum care center. Starting with the concept of decentralization, the project offers customized postpartum care that includes location, arrange, dietary to nursing care. Women can thus receive a set of services that help them adapt to the physical and mental changes that occur during pregnancy and the postpartum period.

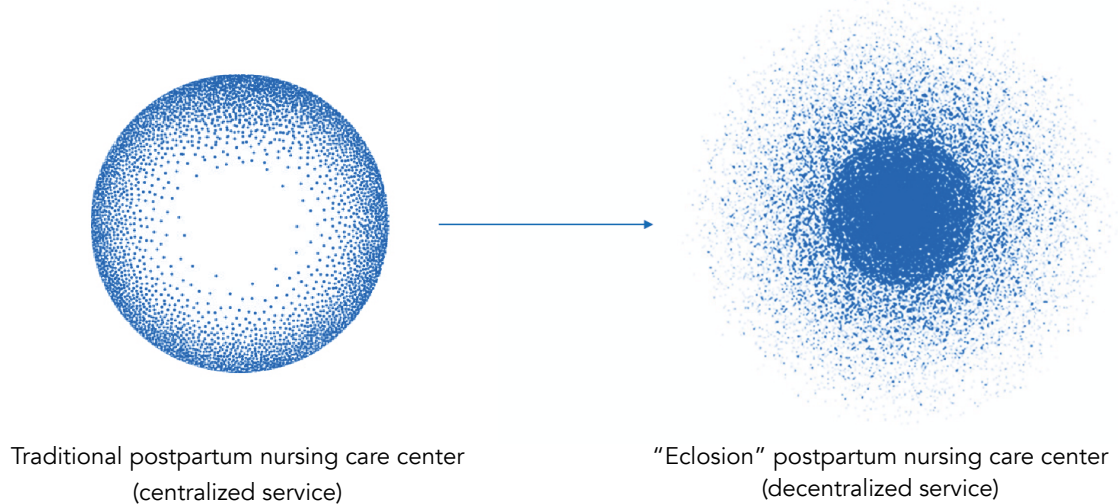


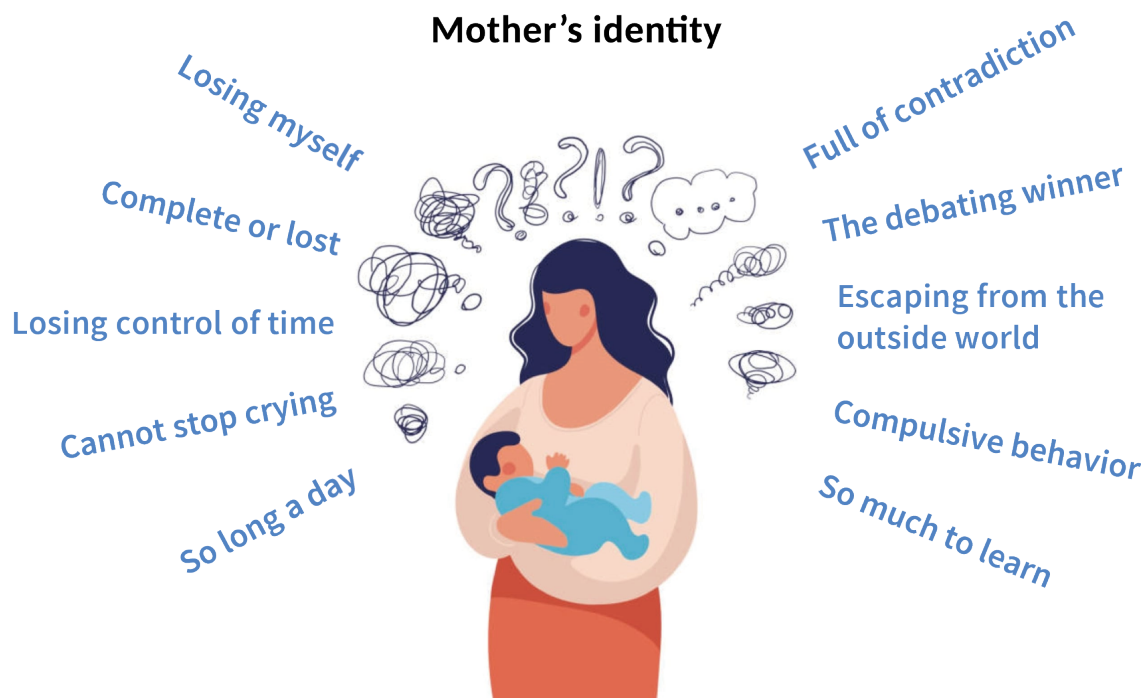
Figure 43. Conceptual diagram between centralized and decentralized

From traditional Chinese point of view, new mothers are often taken care of by their mothers-in-law or mothers during the postpartum period. However, due to the advent of industrial and commercial development and changes in family structure, traditional big families no longer dominate society. Nuclear families have become a dominating type of family structure in the society, and more elders are starting to focus on the quality of life and enjoy the relaxing late life (Huang, 2001). Therefore, taking care of grandchildren is no longer considered grandparents' obligation. Furthermore, parenting newborns and satisfying new mothers' needs during the postpartum period requires alternative methods. A postpartum care home, also known as a postpartum care center, meets this demand for the aforementioned reasons.

Objectives

In postpartum care, the focus is on neo-mothers' changing of habits and needs (from girls to mothers) and on a support system to help them understand their new responsibility.

Combined with the existing rental platform, pop-up services combine a variety of spaces and a business model. The service is a combination of modern concept of service and the tradition of postpartum care.



Target

Young women with the following characteristics are targeted by the service:

Characteristics:

1. Having high-end income
2. Aged between 30-40 years old
3. Belonging to Y-generation
4. Having high education level

Behavioral feature:

1. Being experience-oriented
2. Possessing one's own unique way of thinking
3. Being curious about new experiences
4. In pursuit of refined services

Spatial requirements

Spatial design can offer a brand-new experience that reflects both the brand's vision and provides more opportunities for interesting activities and the use of space with participation from users. The flexible use of system furniture and partition wall is a determining factor of the space. To respond to the demand from users of postpartum care space, Ecllosion divides the space into three following categories: space for mothers and babies, space for preparing food, cleaning and washing as well as mothers' activity space.

4.1.2 Space needs meet concept

In order to create a unique living experience for new mothers in a typical residence, the main problem of design is how to create a changing scale in a single space. I have the following focus on spatial changes:

First, the reorganization of spatial relationships. The change of function brings the change of space demand. The original layout of the house is no longer suitable for the more diverse requirements of space usage. The state of the room needs to be changed according to the needs of the user. The space, different from the dwelling in daily life, needs to be reconstructed.

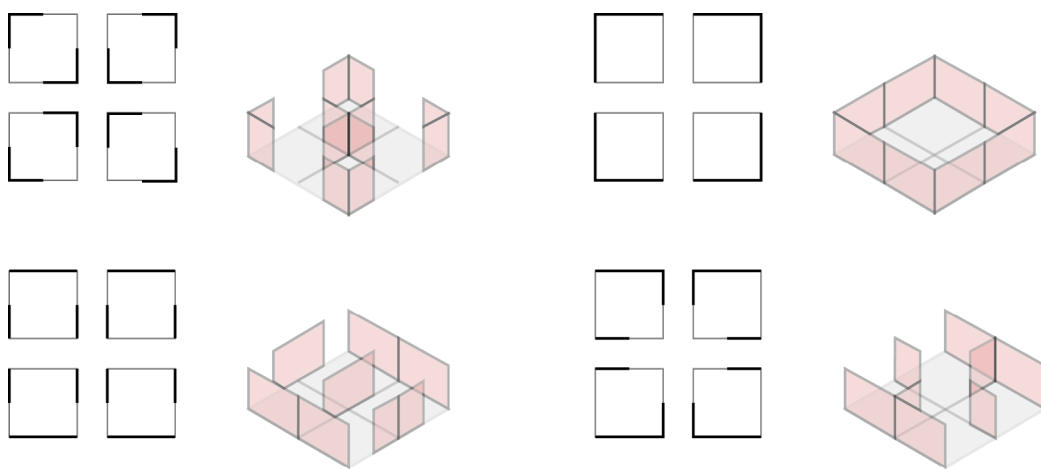


Figure 45. Conceptual diagram of variable space

Second, treatment of spatial scale. The variable space brings new possibilities for the creation of scale. Building a dwelling that can change with needs affects people's thinking about "space".

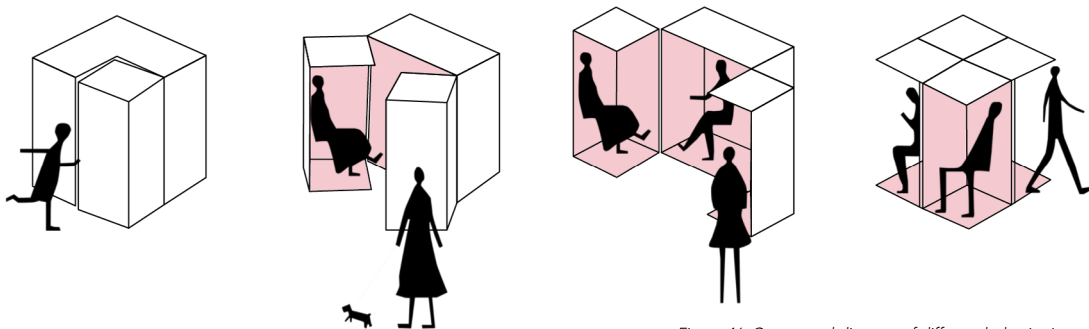


Figure 46. Conceptual diagram of different behavior in space

Third, Definition of behaviors in space. Based on the daily life of the new mother, understand the needs of space use, and establish a space that can be concentrated and separated. It helps new and unexpected behaviors to occur spontaneously.

4.1.3 Spatial configuration

Based on the above considerations, I first remove the non-load-bearing partition wall of the bedroom, erase the boundary between private and public areas. But the toilet and shower room are set in the original place of the house, due to the consideration of its piping closet.

Second, it is meaningful to remove the non-bearing partition wall of the house and to lay the sliding door to define the boundary of the space. On the one hand, it releases the limitation of each area to enrich functional space, and because of that, the interaction between people and space creates a sense of aesthetic relationship.

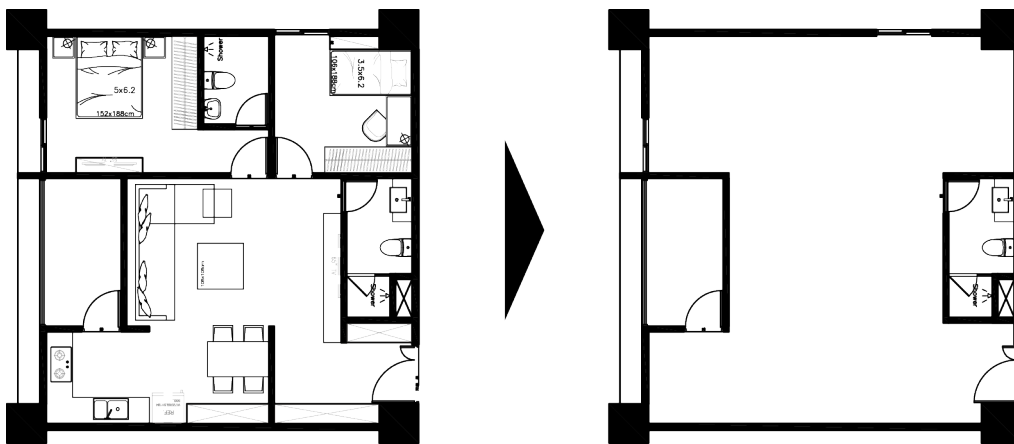


Figure 47. Diagram of remove the non-bearing partition wall

Finally, I place the main place, the bedroom, in the center of the house to have a good connection for each part of the house to achieve “the room needs to be changed according to the needs of the user.”

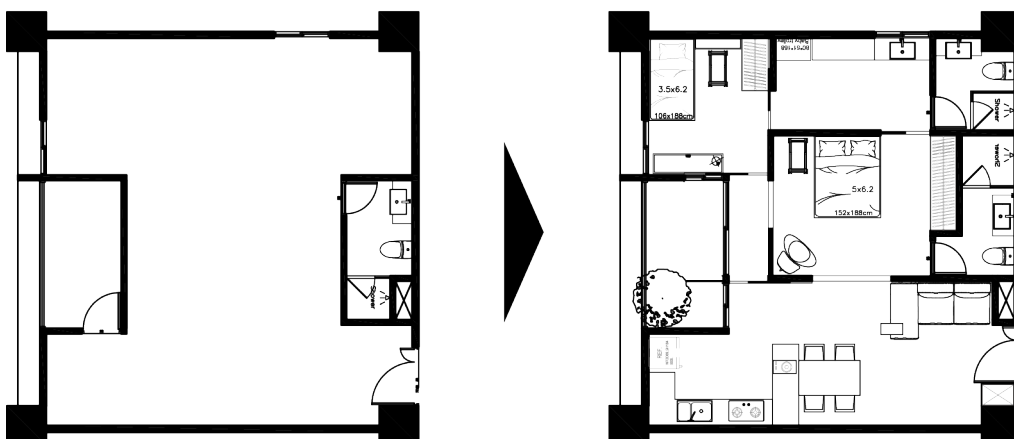


Figure 48. Diagram of new layout in the space

Spatial relationship diagram

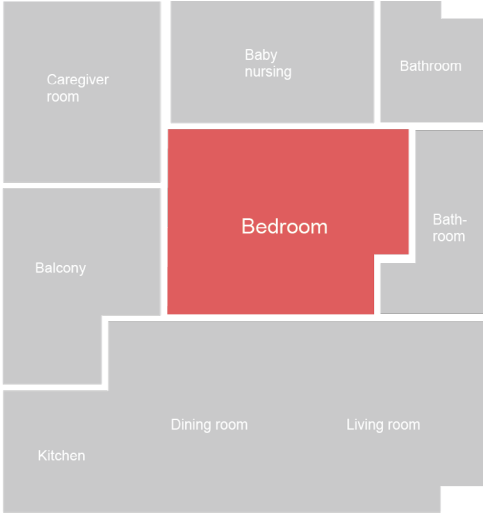


Figure 49. Bubbles diagram of new layout

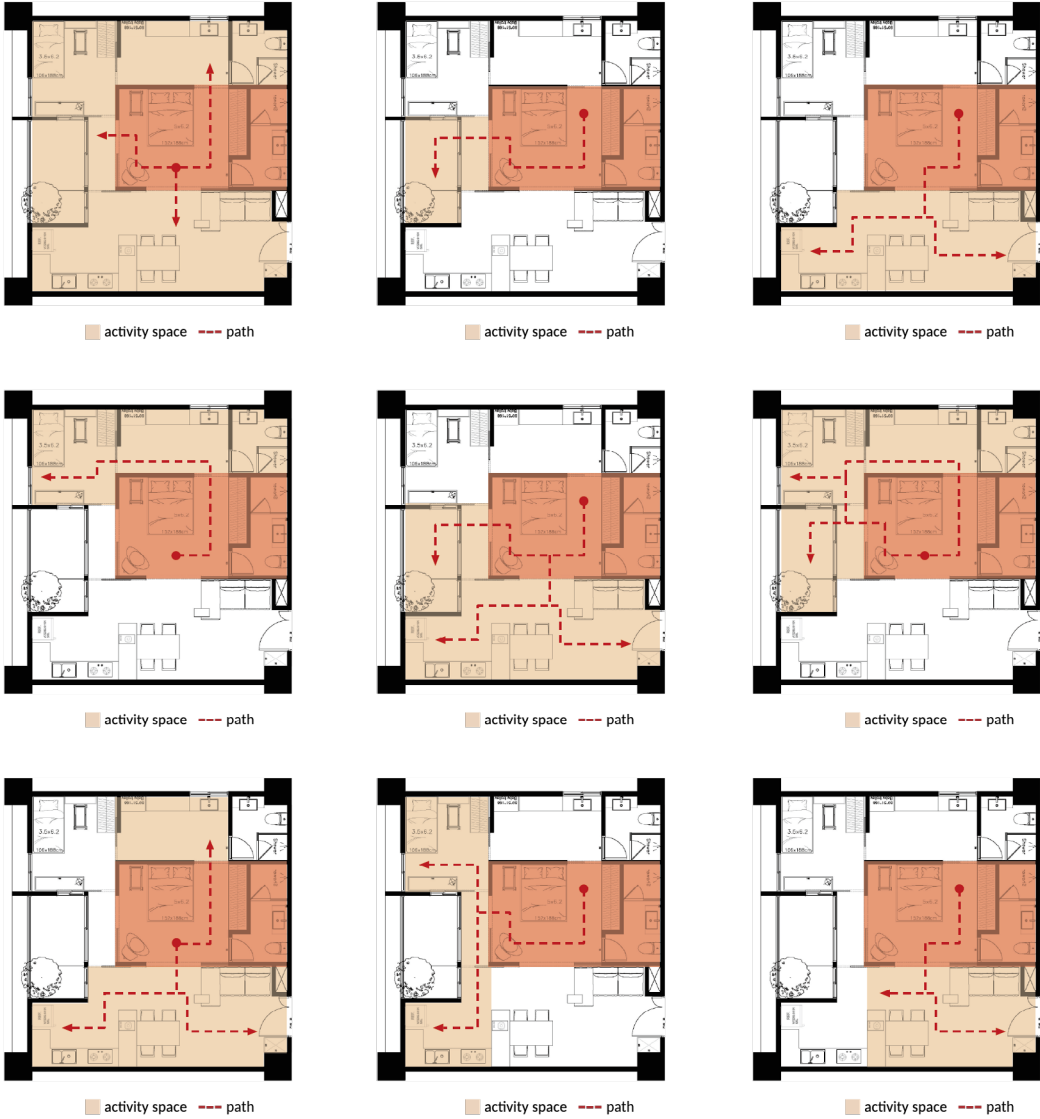


Figure 50. Diagram of path analysis

Activity analysis diagram

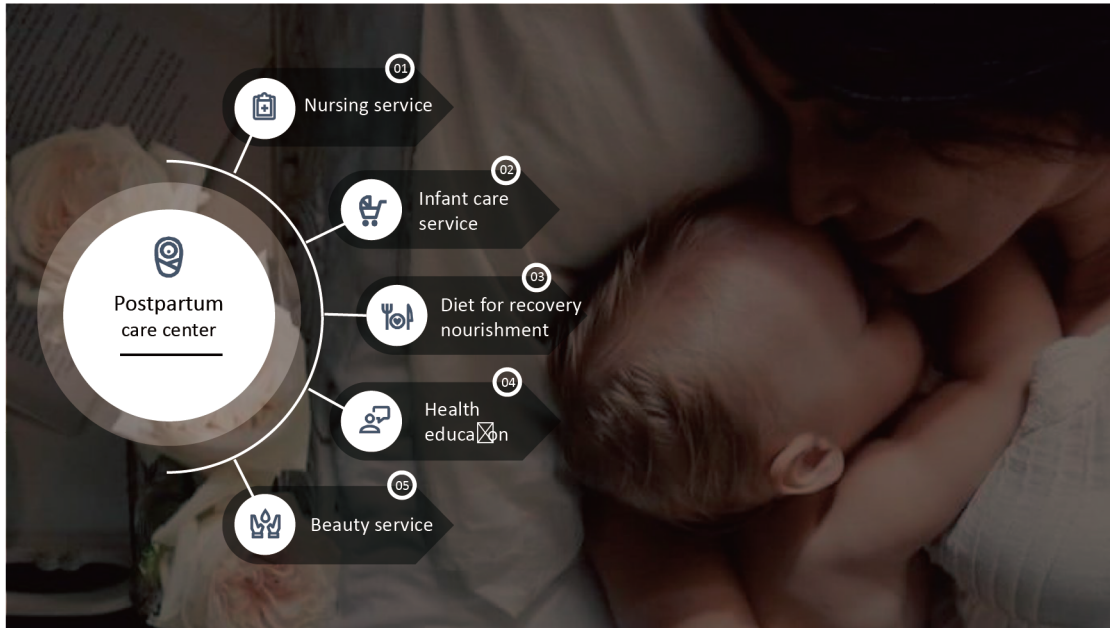


Figure 51. Diagram of activity analysis in postpartum care center



Figure 52. Diagram of function in the space

Material mood board



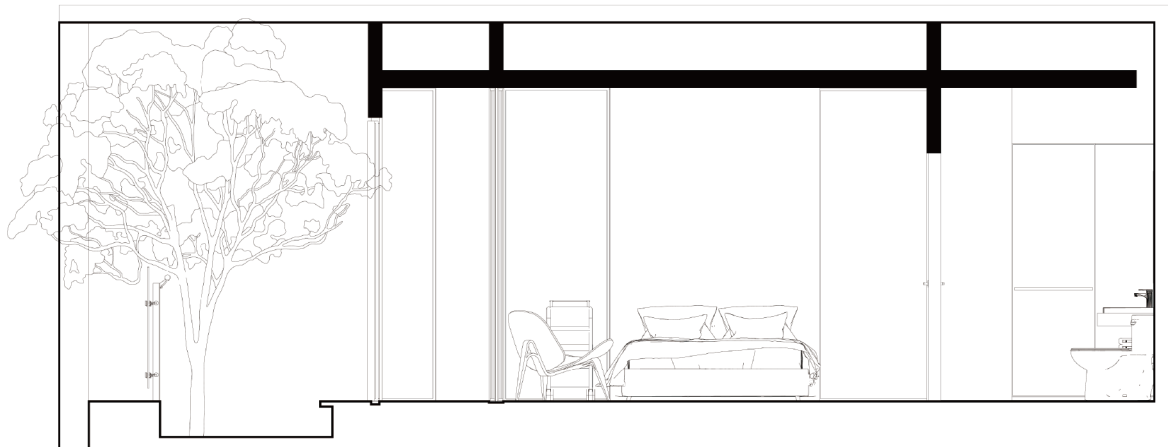
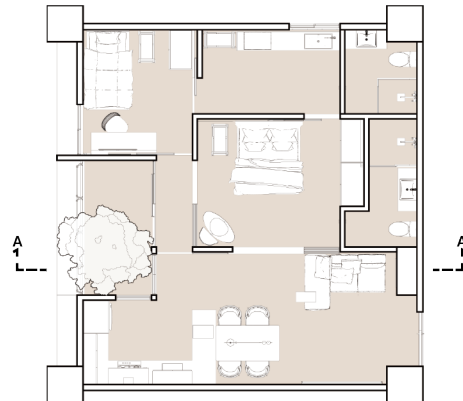
Figure 53. Dimension of the space



Figure 54. The material used in the space

Bedroom

Apart from the centrally located bedroom, the whole space can be served as walkway. Users can easily shuttle in various spaces such as living room, baby care room, semi-outdoor area, kitchen, dining room and dressing room, etc. The ring shape circulation/walkway planning and the sliding partition system make each space both connected and independent.



Section A-A



Material section A-A



Photo 26. View from living room to bedroom



View



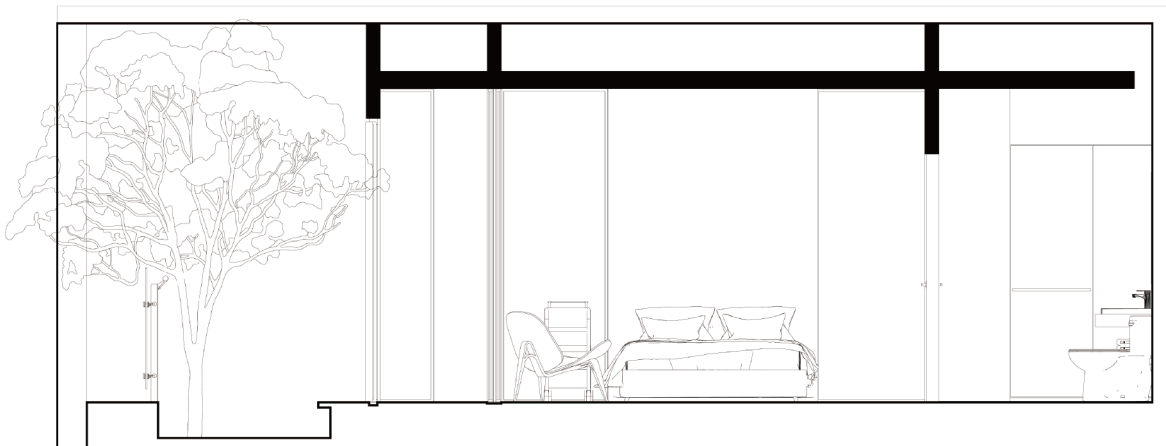
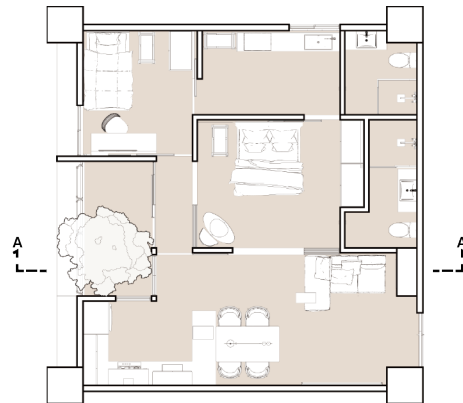
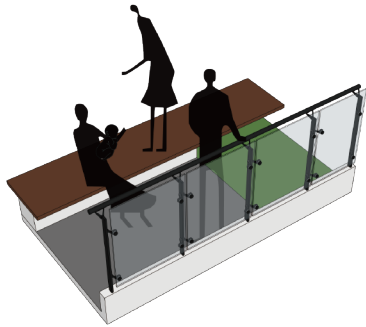
Photo 27. View from baby nursing area to bedroom



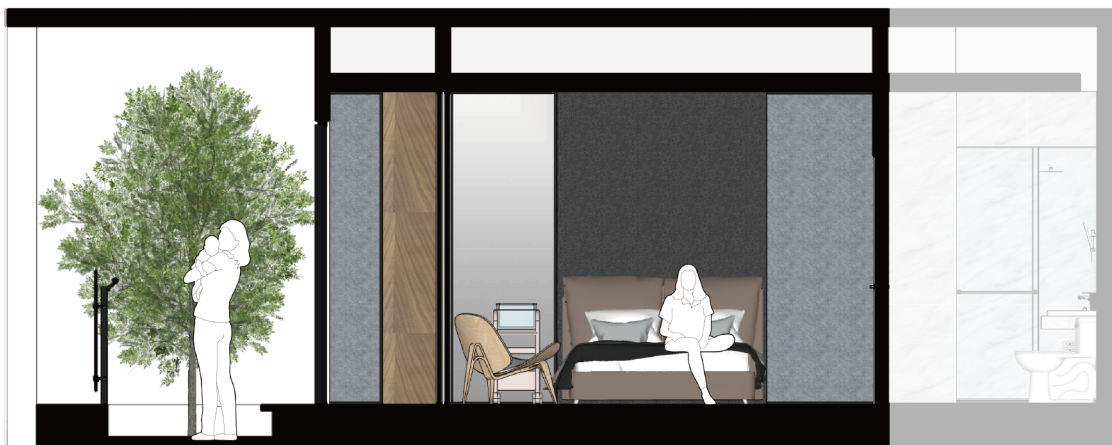
View

Balcony

According to traditional customs, during confinement period, it is necessary to stay indoors to avoid the cold. Therefore, use the aisle is designed to deepen the depth of the balcony, and use the large floor-to-ceiling windows and sliding doors to adjust the degree of opening, so that mothers who have to stay indoors for a long time still have the opportunity to bask in the sun and breathe fresh air.



Section A-A



Material section A-A



Photo 28. View from kitchen to balcony



View



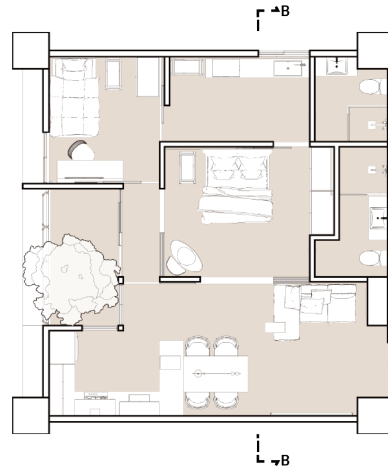
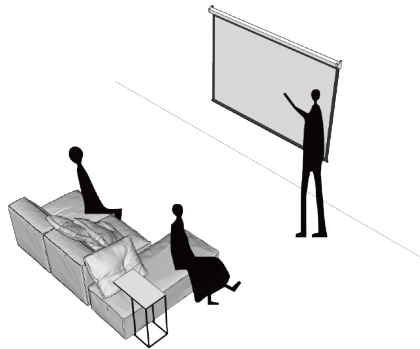
Photo 29. View from caregiver room to balcony



View

Living room

The so-called living room is defined as a multi-purpose space, which can be used as a reception room for visitors or as a medical care space for remote medical consultation. Even when the mother has exercise needs, it can be used as a personal trainer to teach postpartum yoga and post-natal movement spaces. The opening and closing method of the sliding door can be changed according to the scope of use and privacy requirements, so as to achieve the purpose of multiple use.



Section B-B



Material section B-B



Photo 30. View from entrance to living room



View



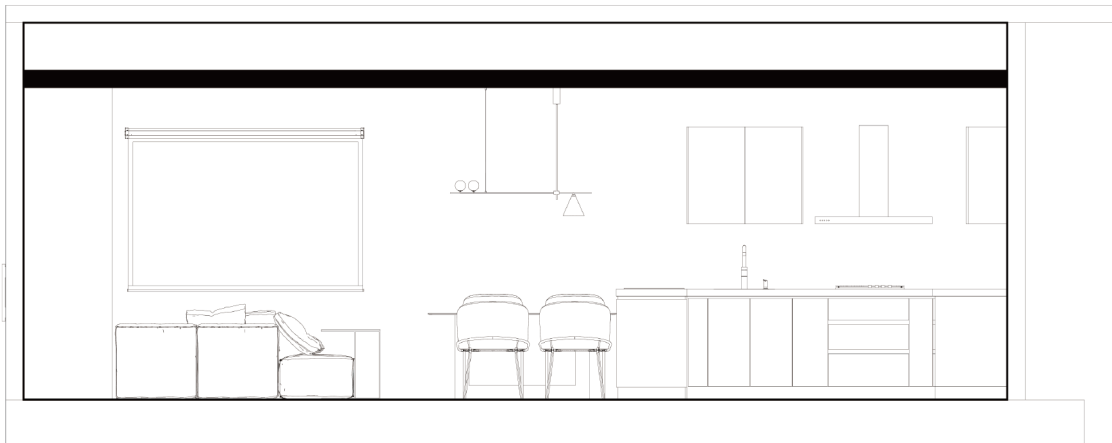
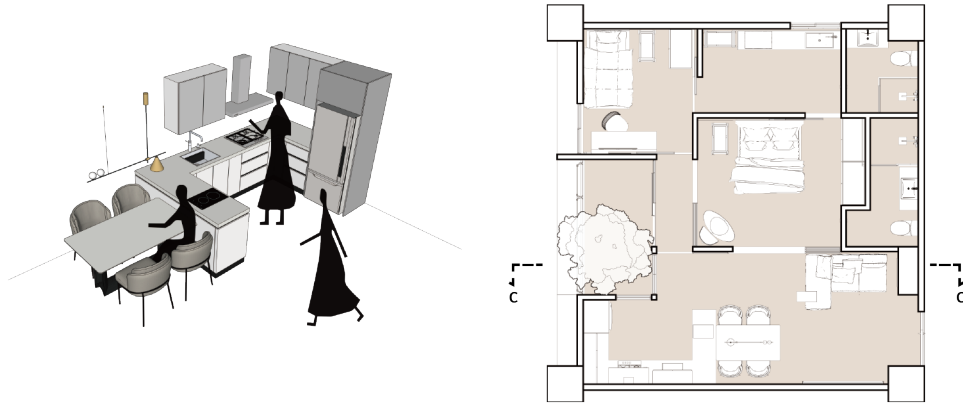
Photo 31. View from bedroom to living room



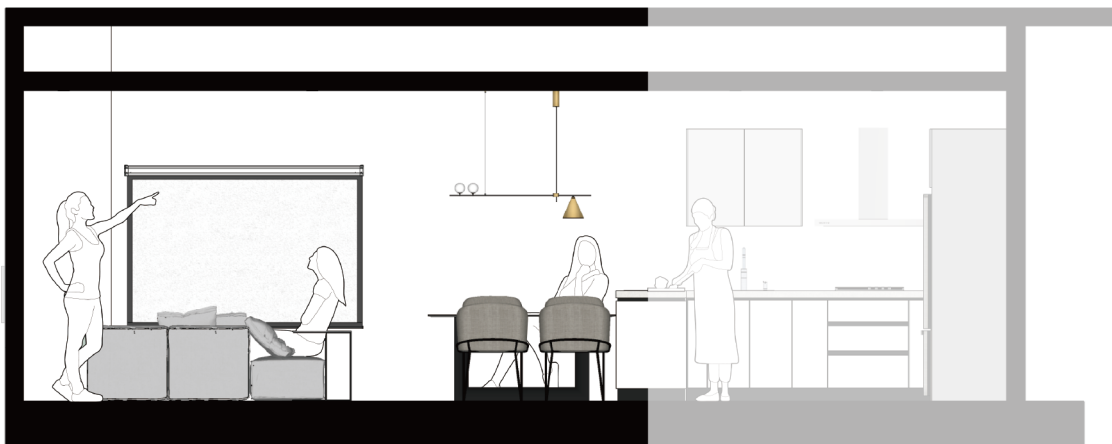
View

Dining room

During the traditional confinement period, medicated dietary supplements also play a very important role. In the meal planning of the confinement center, there are as many as 6 meals periods in a day. Therefore, the dining environment is not only a comfortable location, but also a triangular configuration of the room, kitchen and dining room in the design and planning, which will be more convenient in terms of moving around with baby.



Section C-C



Material section C-C



Photo 32. View from entrance to dining room



View



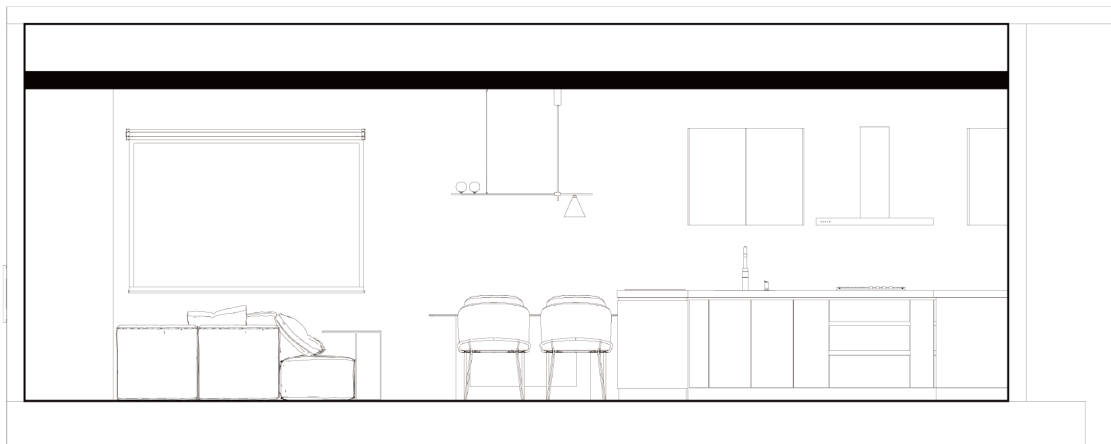
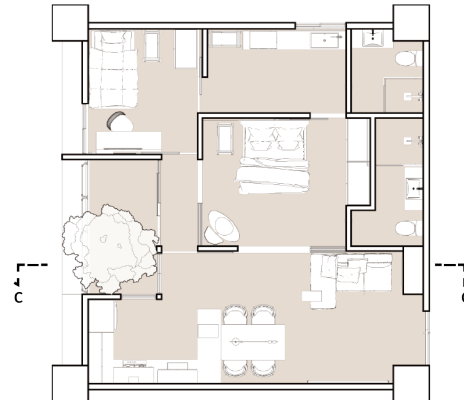
Photo 32. View from bedroom to dining room



View

Kitchen

Generally, there are two ways to prepare confinement meals. The first is to cook in the central kitchen, then send it to the postpartum care center for heating, and then place the food to serve to each room. The other is for the postpartum care center to have its own kitchen, hire a chef to cook. In this design, retaining the original home-style kitchen can not only simply cope with the heating work, but also provide customized catering adjustments according to the needs of the mother.



Section C-C



Material section C-C



Photo 33. View from kitchen



View



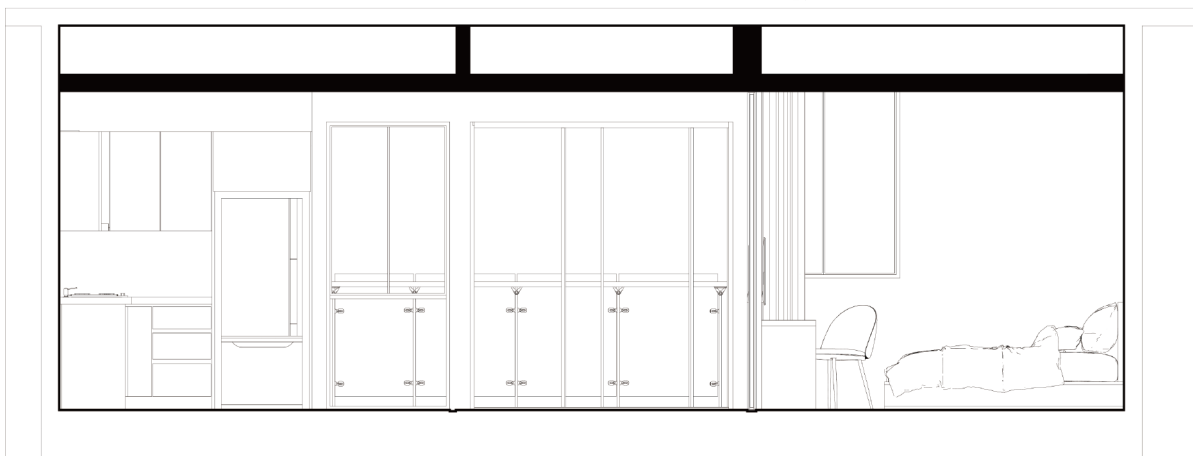
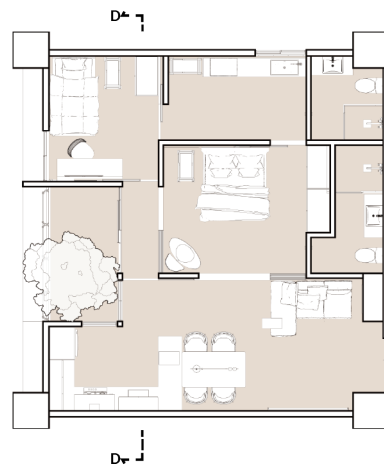
Photo 34. View from bedroom to kitchen



View

Caregiver room

Home-based postpartum care centers are designed to provide customized experiences, from newborn care, customized meals to postpartum care for mothers. The personal caregiver plays an important role in this. The service method that accompanies the maternity almost 24 hours a day must have both the privacy of the maternity and the smooth use of space. Therefore, the caregiver's room is set diagonally to the maternity room, through the sliding door. The opening and closing area separates the service flow to avoid disturbing the mother.



Section D-D



Material section D-D



Photo 35. View from caregiver room



View



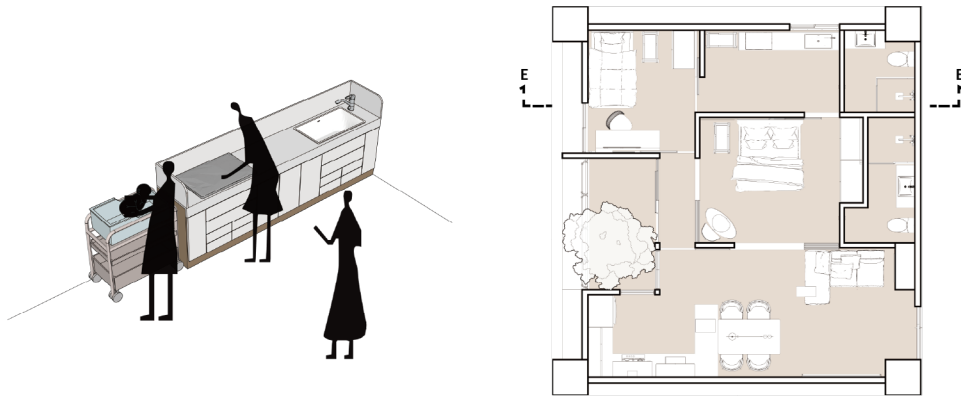
Photo 36. View from caregiver room to kitchen



View

Baby nursing area

In front of the maternity room, there is a workbench (which can be used by nursing staff to help the child change clothes and bathe), a cabinet (for storing baby diapers, milk powder, quilts, towels, changing clothes, etc.), and a baby emergency trolley (for emergency care equipment such as life-saving equipment, medicines, respirators, aspirators, oxygen cylinders, oxygen masks). The design of movable benches and sliding doors creates a circulation of the path, which combines privacy and connectivity in the space.



Material section E-E



Photo 37. View from baby nursing area



View



Photo 38. View from baby nursing area to toilet



View

The current service logic of postpartum homes is based on space, and mothers must move from space to space in the postpartum care center. The home-based postpartum care space takes the mother as the main body, and sets the bedroom in the center of the space as the main axis. Each space is changed to a state of connection or separation according to the needs of the mother, reflecting the concept of space to serve users.

Website

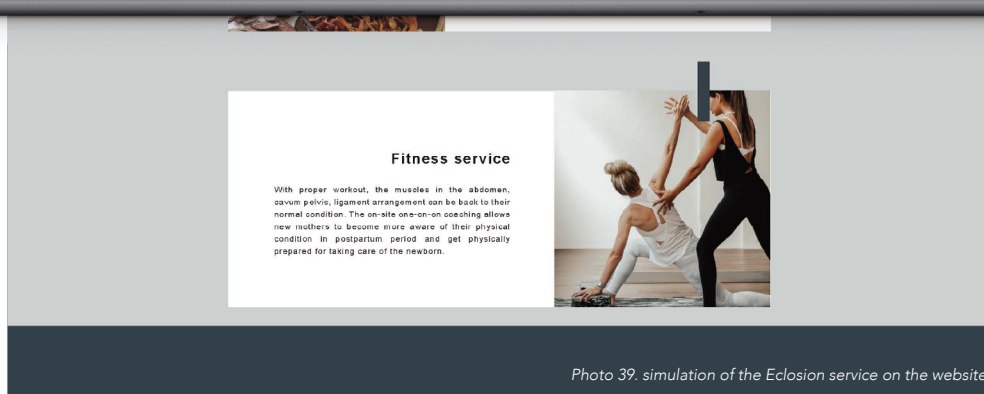
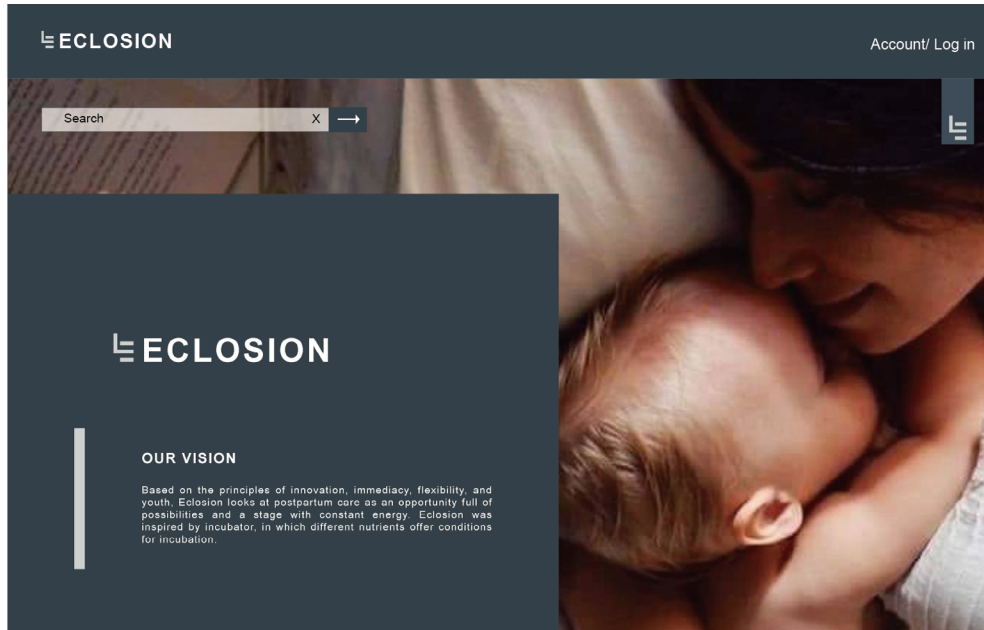
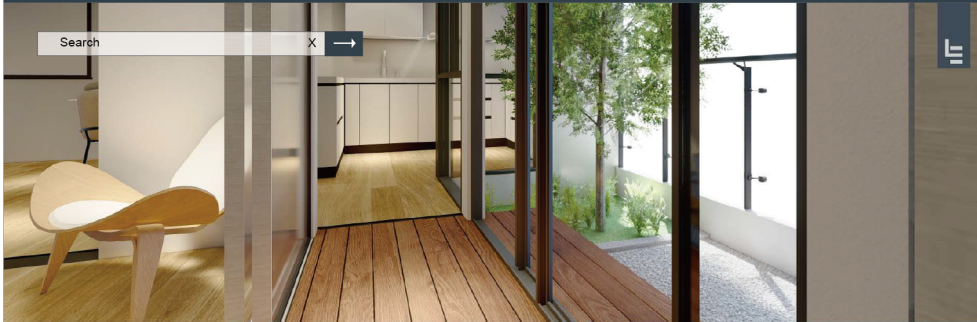


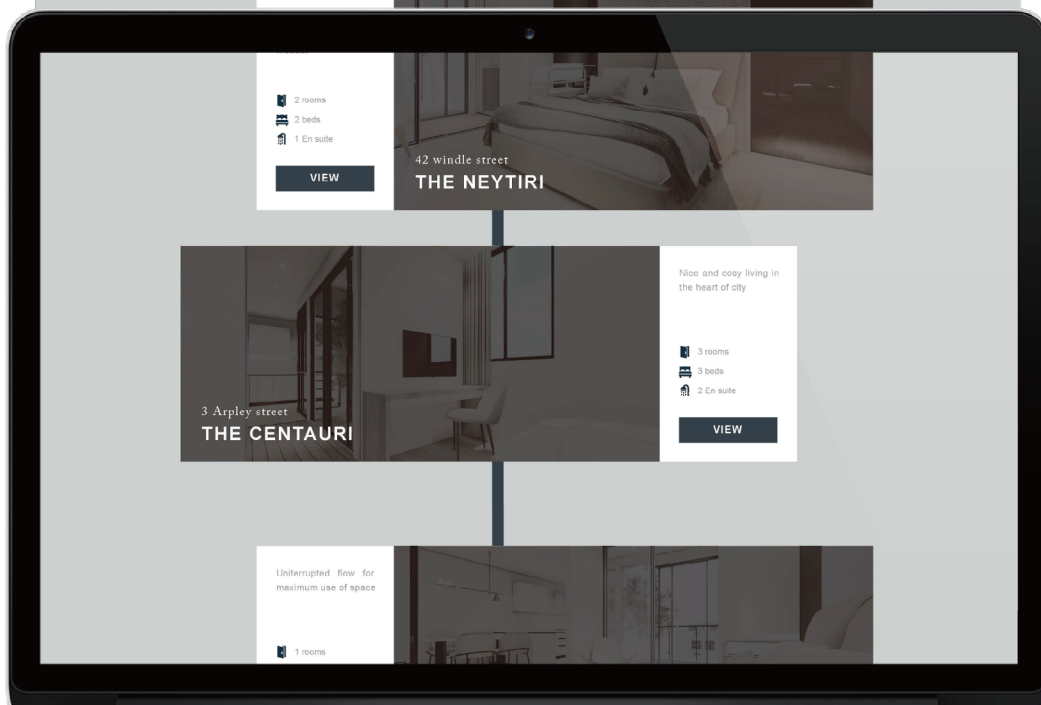
Photo 39. simulation of the Eclosion service on the website

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THE PORTFOLIO

Spatial design can offer a brand-new experience that reflects both the brand's vision and provides more opportunities for interesting activities and the use of space with participation from users. To respond to the demand from users of postpartum care space, Eclosion divides the space into three following categories: space for mothers and babies, space for preparing food, cleaning and washing as well as mothers' activity space.



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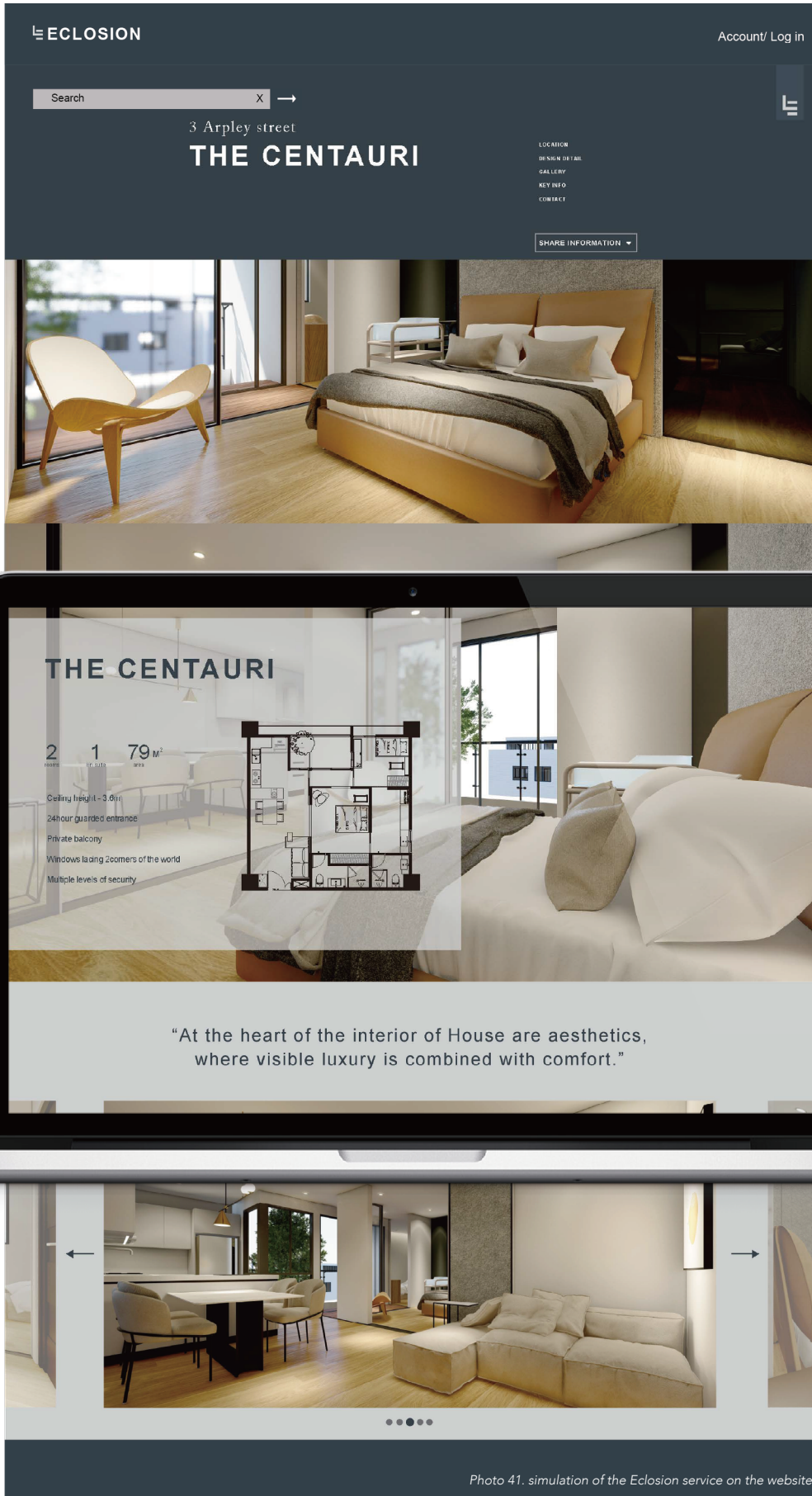


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Photo 40. simulation of the Eclosion service on the website



4.1.4 Conclusion

Since the outbreak of the COVID-19, the potential risks arising from clustering have been understood. Focusing on the issue of postpartum care, new mothers and newborn babies are both vulnerable groups that need to be well protected. How to provide a safe and comfortable space during postpartum recovery has become the topic of this thesis.

After visiting a number of new mothers to understand the physical and psychological changes brought about by childbirth, and inspired by the long tradition of "sitting the month" in Chinese culture, I have a thorough understanding of the services provided by postpartum care centers in the current industry. Combining the novel cloud service model, I created a decentralized service system which provides a tailor-made experience with home-based services.

As discussed in the previous chapter, society has changed and is more flexible than ever and has deeper connections virtually but flexibility does not seem to be reflected in this aspect of the postpartum care field. So in this case, Eclosion is an important attempt to solve the problem for modern mothers, to really put the needs of mothers first, and to re-examine whether the needs and services are in line with each other.

Eclosion is like a clue, the key to accumulating countless trials to help neo-mothers find the answer to a happier life. It follows basic physical needs from diet, sleep, etc. to basic mental needs such as belonging, self-esteem and self-realization, and also helps women to find a sense of self-identity after their identity changes. Eclosion plays a strong role of companionship in this important stage of women and also serve as strong support for their choice.

This project is conceived and planned based on a traditional Taiwanese residential floor plan, but it can actually be used as a model and has the opportunity to be replicated anywhere in the world to better help mothers around the world.

Unlike many standard and large postpartum care centers today, Eclosion is a space designed to provide mothers with an unique and tailored space, making postpartum care not only about physical resting , but also allows mothers to feel at ease and safely explore the joys and responsibilities of a new chapter of life.

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