Health FOR ALL
Cultural, Operational & Technological Influences

35th UIA/PHG International Seminar on Public Healthcare Facilities
Dalian, China. May 23-25, 2015
at Dalian World Expo Center

Proceedings
edited by Romano Del Nord

Conference organized by:
UIA/PHG International Union of Architects / Public Health Group
GUPHA Global University Program in Healthcare Architecture
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Humanizing Healthcare Spaces through Culture: Design of Labour Delivery Room for the Malay-Muslim Community as Case Study

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Modern man and women have lived in the medicalised world from birth till death with the advent of modern sciences brought about into the healthcare environment. Culture as a way of life of an ordinary man suddenly stops as one enters the alien world of modern healthcare where certain expected behavioural standards are required. Many researches were made to humanize healthcare environment so as to soften this clashes of the environment. However, there are still very little inroads made to humanize the clinical areas of the healthcare environment apart from interior decoration and spatial layout. Malaysia had awakened from its colonial days and had accepted the fact that traditional medicine lives in a separate stream from mainstream modern medicine as alternative choices. Birthing as a normal event, however has been brought into modern healthcare from its traditional setting to save lives of both mother and child. The objective of this research is to humanize the clinical spaces of the modern healthcare environment using labour delivery room as the case study and the Malay Muslim culture as the humanizing factor.

Keywords: Humanizing, healthcare, culture, labour room design

INTRODUCTION

The mainstream birthing process is medicalized when a woman is moved from her home. The discipline is discussing who led the service; the consultant or the midwife. Santos (2010) in “Challenges of a philosophy for the humanization of childbirth” explained the challenges of childbirth over medicalization, and advocate to humanizing the process of childbirth by bringing back the soul, the mind and the body to the being in harmony.

Modern man and women have lived in the medicalised world from birth till death with the advent of modern sci-
ences brought about into the healthcare environment for the betterment of mankind. Culture, as a way of life of an ordinary man that encapsulate humane environment suddenly stops as one enters the alien world of modern healthcare where certain expected behavioural standards are required. The motherhood stage as a natural event in the female's life has also entwined into the medical cycle. Realisation of these medicalised trends has lead to many reforms in maternity care with the growth of women-centred and family-centred birthing centres that facilitate the fulfilment of woman’s choices as well as incorporating women’s rights into maternity care. These are examples of the growing change towards getting the best outcomes for women, their babies, their marriage life and their position in society.

The World Health Organisation or WHO (1966) implied the practice of safe motherhood either delivered at home or at best in the hospital, without infringing the local customs. However, this intervention, especially in a hospital setting, causes abrupt to the smooth flow of local traditions at the moment of birth, to the return of the mother and child from a local hospital after the birth. No traditions wish to endanger the lives of mother and child. It is, therefore, imperative when the life of both mother and child at childbirth are at stake, to find a bridge that fill the gap between humane and cultural requirements to the safe or clinical environment. This connection will support the mother and child well-being thus requires further research. The ability to give birth, in most cultures, gives a woman an identity that completes her well-being as a whole woman. Norwina (2015) suggests the model on linking medicalisation of birth and normal female life cycle.

The significance of birth brought confidence to the father and gave strength to the family with a lineage or descendants. The importance of providing a birthing environment within a cultural context is best expressed by Laderman (1987):

“In a Malay women’s own home, the Malay women give birth, but in the hospital, it is the obstetrician that delivers, not the Malay women.”

“Humanization” in the context of this research is defined subtly by Merriam Webster’s online dictionary (2008) as a process to make something or space “humane”. Todres et al. (2009) define humanization through the conceptual framework of the dimension of humanization in healthcare as in Table 1. According to Todres et al. (2009), the person needs to attain the eight form of humanization values to feel humanize. Dehumanizing situation will occur if any one of the eight criteria is not balanced or subtrated. However, most of the reforms resulted from the studies were made to the areas of the healthcare facility such as the waiting areas, the in-

<table>
<thead>
<tr>
<th>Form of humanization</th>
<th>Form of dehumanization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insiderness</td>
<td>Objectification</td>
</tr>
<tr>
<td>Agency</td>
<td>Passivity</td>
</tr>
<tr>
<td>Uniqueness</td>
<td>Homogenization</td>
</tr>
<tr>
<td>Togetherness</td>
<td>Isolation</td>
</tr>
<tr>
<td>Sense-making</td>
<td>Loss of meaning</td>
</tr>
<tr>
<td>Personal journey</td>
<td>Loss of personal journey</td>
</tr>
<tr>
<td>Sense of place</td>
<td>Dislocation</td>
</tr>
<tr>
<td>Embodiment</td>
<td>Reductionist body</td>
</tr>
</tbody>
</table>

Table 1 - Dimension of humanization and dehumanization in healthcare (Source: Todres et al., 2009)
Table 2 - Definition of Balance Birthing Environment

<table>
<thead>
<tr>
<th>OPTIMUM</th>
<th>USABILITY</th>
<th>MALAYSIANNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Critical Determination</td>
<td>• Functionality, Efficiency,</td>
<td>• Characteristic that relate to the different</td>
</tr>
<tr>
<td>• Safety</td>
<td>• Effectiveness</td>
<td>• culture and</td>
</tr>
<tr>
<td>• Infection Control</td>
<td>• Satisfaction</td>
<td>• mannerism/behavior of the</td>
</tr>
<tr>
<td>• Clinical procedure</td>
<td>• Ergonomics space</td>
<td>Malaysians of the Malays,</td>
</tr>
<tr>
<td>• Capacity</td>
<td>• Process/sequence of activities space</td>
<td>Chinese, Indians and other</td>
</tr>
<tr>
<td>• Circulation</td>
<td>• Number of humans/occupancy at peak period</td>
<td>indigenous</td>
</tr>
<tr>
<td></td>
<td>• Equipment required</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Services required - water, light, etc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Environmental requirements: Privacy-noise, visual</td>
<td></td>
</tr>
</tbody>
</table>

patient accommodations and other public areas of the healthcare facility to be people friendly. However, review of the literature indicated there are still very little inroads made to humanize the clinical areas of the healthcare environment apart from touches made to the interior decoration and spatial layout.

The Malaysian essence, or values, in humanizing the birthing spaces of healthcare facilities, are expressed through its cultural factors conjoined with the needs of the modern or western environment (for clinical assistance) as a safety net (see table 2). The “environment”, is indeed an integral part of how living creatures function and develop. Therefore, there must be a conscious effort in the design community to give the new-born opportunity to be born naturally. That is to mean, to be born not only in the physically and clinically safe as well as a secure environment but culturally appropriate to the people. The environment serves as a ‘momentous’ space for the rites of birth in the continuum of life. Aishah (2001) on maintaining traditional practices alongside western medicine in antenatal care in Malaysia, emphasised that a maternity care model needs to be user-friendly and also culturally appropriate while at the same time being safe and efficient. This quest concurred with WHO (2005)’s report.

The inclusion of cultural dimension in the healthcare spaces is important. Intangible elements such as shared beliefs, shared values, choices, acquired knowledge and skills through accepted traditions, although insignificant to particular worldviews, gave meanings to the individual, and the society in achieving
the ‘ideal environment’ including space for birth. The meaning that is tagged to the tradition made up the soul of these spaces that contained the tradition or culture.

Culture creates behavioural norms and, therefore, knowledge of cultural context allows one to predict, to some extent, the actions of those people in that culture (Geertz, 1973). The relationship between culture, behaviour and environment is intertwined.

Some authors suggest that culture and behaviour influence the environment while others argue the opposite. Many literature had indicated the link and relationship between behaviour and environment (Baker, 1968; Heimstra & Mccarling, 1974); Pomeranz, 1980; Baron, Robert & Byrne, 1991; Betchtel, 1997; Rivlin, 2000; Wapner, Demick, Yama- moto & Minami, 2000). Understanding of the cultural context in providing an ideal environment is required to achieve a humane healthcare environment. Space, in architecture has many dimensions. Therefore, the space contains the essence of architecture as a reflection of conceptions of life, an environment to which our lives unfold (Barry, 1993).

ISSUES AND DISCUSSION

Malaysia has a long-standing tradition of professional midwifery – since 1923. Maternal mortality was reduced from more than 500 per 100,000 births in the early 1950s to around 250 in 1960. The country then gradually improved survival of mothers and newborns further by introducing a maternal and child health programme. A district health care system was introduced and midwifery care was stepped up through a network of “low-risk delivery centres”, backed up by high-quality referral care, all with close and intensive quality assurance and on the initiative of the public sector authorities. This brought maternal mortality to below 100 per 100,000 by around 1975, and then to below 50 per 100,000 by the 1980s (WHO, 2005).

Malaysia had awakened from its colonial days and had accepted the fact that traditional medicine lives in a separate stream from mainstream modern medicine as alternative choices. Birthing as a normal event, however, has been brought into modern healthcare from its traditional setting to save lives of both mother and child. In doing so, the cultural environment and shared values of celebrating new lives are taken away from the mother and the family to a sterile and clean environment where the mother is no longer in charge of her needs.

Figure 1 shows the evolution of Labour Delivery Room Design and Birthing Spatial Environment in Malaysia. Odent (1991) explained that in the privacy of a home, a birthing woman adopts instinctual behaviors, which cannot be learned in a class or from hospital personnel. Moreover, thus to attempt to teach a woman how to give birth, is, in his view, to attempt to control her. He said that all one could do is to “create the best of conditions” (Odent, 1991).

Recognition of the way the environment is being designed and facilitates the birth event is integral to optimal functioning of the healthcare setting including understanding the role of maternity care that provides the optimal environments for childbirth. To improve maternity care, Millennium Development Goals
(MDG) 5 Risk Approach in Maternal Health Care Advocate community education through various means recognition that socio-cultural and traditional environment of the family and community are inextricably linked. To ease the birth process, this study is in the opinion that the future birthing spaces should be designed to integrate the cultural dimension of the mother as part of essential design requirements. It is still imperative, however, for this research to take stock of current practices in the Malaysian hospitals and assessed the existing birth spaces and practices. Table 4 illustrates the advantages and disadvantages of home and hospital birth. Table 3 and 4 explain the Ministry of Health policies on Labour delivery unit in Malaysian hospitals.

Malaysia is a multi-culture country. Religions correlates strongly with ethnicity, with Muslims are mostly Malay, Hindus are mostly Indians and Buddhists are mostly Chinese. Although the culture is ethnic bound, a religion that is inculcated in the people's way of life plays a role in determining the culture of the ethnic that professed it obliviously. Characteristic of birth and birth spaces relate to the different cultures, religion and mannerism/behavior of the people. The Malays made up over 60% of the population and currently the primary user of the public healthcare facility apart from being the most fertile of the ethnic groups.

In Malaysia, by virtue of Islam being a constitutional religion, Islam is, therefore, the official religion of the country and thus are assimilated in the official procedures and inculcated in all public facilities. However, as Islam is not ethnic based but universal in its practices, any ethnic related cultures that do not contravene Islamic believes are allowed to continue. This culture includes birth. Literature and findings on a site visit to
facilities showed similar usage pattern of public facilities by the Malays, the Indians and the Chinese in that order (figure 2). The Chinese, due to tradition since the colonial era, are used to having their own maternity hospital and has more purchasing power to choose private hospitals as other option. Based on the discussion presented, the study focuses on...
<table>
<thead>
<tr>
<th>Department brief of LDU</th>
<th>Room space brief of LDR (birthing space)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Functional Description</td>
<td></td>
</tr>
<tr>
<td>- Operational policies</td>
<td></td>
</tr>
<tr>
<td>- Workload</td>
<td></td>
</tr>
<tr>
<td>- Planning concept</td>
<td></td>
</tr>
<tr>
<td>- Manpower and staffing organization</td>
<td></td>
</tr>
<tr>
<td>- Space requirements and functions</td>
<td></td>
</tr>
<tr>
<td>- The LDU will consist of 4 delivery units/ LDR. Two delivery units will share one (1) en-suite of separated cubicles of toilet and shower, with a vanity outside the cubicles.</td>
<td></td>
</tr>
<tr>
<td>- Four (4) delivery rooms are required.</td>
<td></td>
</tr>
<tr>
<td>- The patient will be admitted into the room and go through the process of labour and delivery.</td>
<td></td>
</tr>
<tr>
<td>- As much as possible, the room should have a non-clinical atmosphere and husband friendly so as to encourage the husband, or a relative be with the patient during the entire delivery process.</td>
<td></td>
</tr>
<tr>
<td>- The necessary clinical items for delivery should be kept on delivery trolley inside the room (1 for each room)</td>
<td></td>
</tr>
<tr>
<td>- Two (2) rooms shall be sharing an ensuite toilet. This toilet shall be provided in the anteroom and toilet.</td>
<td></td>
</tr>
<tr>
<td>- Space should allow for at least two (2) staff managing the delivery, a bassinet, a cardiocograph, a maneuvering trolley and one(1) visitor chair, a resuscitation equipment in case of urgent resuscitation is required. Or else resuscitation is done at the resuscitation bay.</td>
<td></td>
</tr>
</tbody>
</table>

Table 5 - Generic medical brief of requirement of labour delivery unit and labour delivery room of public non-specialist hospital in Malaysia

the design of Labour Delivery Room for the Malay-Muslim Community as Case Study.

**Objective of the Study**

Based on the issue and discussion presented, the objectives of the study are:

1. To examine the spaces and practices of birthing conformation to the critical dimension of a functional entity as envisaged by current Ministry of Health Malaysia’s standards or the Private Healthcare Facilities and Services Act 1998 in relation to the Malay-Muslim culture.

2. To examine whether the spaces and practices for birthing had accounted culturally for an enhance and satisfying birthing experience for the patients.

**Research Methodology**

The method adopted for the research is both qualitative and quantitative. Exploratory and experimental designs using empirical data gathered from primary and secondary sources were made based on findings and comparative analysis of the existing environment to test the hypothesis of the culturally integrated labour delivery room design. Case study of design of Labour Delivery Room in nine hospitals in relation to the Malay-Muslim Community was used to demonstrate the importance of understanding the subject matter - the Mother, the culture surrounded her, the comfort and support she expects so that she can bear the process of child bearing, and succeed in her motherly effort. Interviews and observation used for the study supported by sketches, photographs and notation during visits to facilities. Sketches and information on the sequence of movements in definite space were redrawn in Autocad (Figure 3). The use of space and sequence of activity and behavioural activity within space were observed and coded.
The interview includes both unstructured and structured with the consultant and staff in-charge of LDU. The interview covers on general information, flow, policies of visiting spouse, emergency and non-emergency flow, patients post labour. Room/ space (3 D) including Grid and Area. The physical measurement of room size, equipment, placement of furniture and building services were recorded and coded. Standard equipment and furniture required in the LDR at various stages were recorded and listed. Photos on the process were taken where possible.

For the purpose of this study, although birthing space is an individual experience, in providing a public facility for mass use, a form of standards, based on commonality of usage and physical needs, is ensued. For this reason, Minimum standards and guidelines are imposed to ensure the public are provided with the optimum birthing facility.

The selected standards and guidelines from respective health authorities from countries and WHO whom Malaysian architects infer for their projects were analysed. The selected guidelines discussed are from the Department of Health (DH) and the National Health Service (NHS) of England in the United Kingdom (UK); Australasian Health Facility Guidelines of Australia; and the Healthcare Facilities Guidelines from the United States of America (USA), summarised in Table 6. The selected Malaysian Hospitals LDUs and LDRs spaces were analysed based on the summary. Determination of the critical dimension through overlapping of images on circulation and equipment and activities conducted in the space gridded.
### Table 6 - Summary of Birthing Space Critical Dimension and Optimum Area (nett space) from the UK, Australia and the USA

<table>
<thead>
<tr>
<th>Reference</th>
<th>Terminology of Birthing Space</th>
<th>Critical Dimension (Space Configuration)</th>
<th>Optimum Area</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>Single/Twin Birthing space/Room</td>
<td>4.9 x 4.2-4.65 m</td>
<td>20.58-34.8 sq.m</td>
<td>Nett space</td>
</tr>
<tr>
<td>Australia</td>
<td>Birthing Room (LDR)</td>
<td>4.4 x 5.55 m</td>
<td>28 sq.m</td>
<td>Nett Space</td>
</tr>
<tr>
<td>USA</td>
<td>LDR, LDRP</td>
<td>13-15 ft. (3.96-4.57 m) x 26.15-13.33 ft. (7.922-4.06 m)</td>
<td>200-340 sq.ft (18.58-31.57 sq.m)</td>
<td>Nett space</td>
</tr>
<tr>
<td>Average</td>
<td>LDR/Birthing Room</td>
<td>Not less than 3.96 m and not more than 7.922 m (4 x 5-8)</td>
<td>Not less than 18.48 sq.m. not more than 34.8 sq.m</td>
<td>Nett space</td>
</tr>
</tbody>
</table>

### Finding and Discussion

The literature review on the detailed account of birthing in Malay culture is very much limited. The account by Laderman (1987) is entrenched in animistic belief and ritual that is not parallel to Islam. There is no discussion on the exact location where the birth took place in the traditional Malay house. However, discussion and interviews with elderly women and village folks that birthing can take place anywhere in the house that could be improvised to allow for privacy. Findings indicate the following space requirements for birthing:

i. adequate privacy from prying eyes;

ii. adequate space for 3-5 persons i.e. the birthing mother, the mother or close female relative of the mother, the traditional birth attendant (TBA), a female relative or immediate neighbor as runner and lastly the spouse for strength;

iii. a one stop space for birth, hygiene, bath, sleep, massage and other activities after birth;

iv. near to kitchen for food and heat to ease the blood circulation.

Figure 5 illustrates the aspects of traditional Malay house in relation to the birthing process.

Based on the traditional birthing requirement, there is no particular space or rites in the Malay-Muslim birth practices. Privacy is paramount but life and death matter most in the Islamic law (Shariah) that the presence of another sex as a doctor is permitted at the crucial moment only. If there is a choice, preference for a female doctor is deemed. Culturally the birthing mother needs another female relatives more, so the birthing mother’s own mother to be at her side. The presence of the spouse is only required when the strength to as-

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to the family for proper burial as a human part. Although culturally the Malays conduct a similar ritual to the placenta as the Hindus due to previous faith embedded in the culture, the tradition, if contravening the Shariah, will be discontinued.

**Critical Dimension of a Functional Entity of Selected LDR in Current LDU**

Analysis for cultural and critical dimension from standard brief and standard typical design of birth space in the case studies indicates the following findings:

1. **Cultural Dimension:**
   - Evaluation on standard brief indicates cultural dimension is only evident in passing as a statement for the request for consideration of the presence of spouse or relative for design but no guideline provided or imposed as a mandatory requirement. Cultural dimension in standard/typical design is evident only in the compliance of the following aspects:
     1. in the orientation of labour bed away from direct visual view;
     2. presence of curtain tracks for privacy;
     3. presence of a chair for spouse/relative.
   - There is no tool or guideline to evaluate the presence of cultural consideration in both forms to ensure the provision in compliance.

2. **Critical Dimension:**
   - Evaluation on critical dimension indicates descriptive requirement of procedures taking place within the space and referring to other standards. No dimensions were provided that leaves the design professionals to refer to the Schedule of Accommodation (SOA) if
available or refer other standards. SOA does not provide the right configuration required. Findings indicate that for critical dimension, the design, as drawn, becomes the lingua franca/communication between the designers/implementers and the user-clients. The drawings showed necessary placement of equipment, loose and fixed furniture, M&E services and basic dimension of width and length of the birth space (mostly at centre to centre dimension), with gross floor area only of the room to meet the SOA requirement. There are foreign standards and Malaysian Private Healthcare Facilities and Services Standards for licensing to ensure optimum compliance. However, this is done only after the project agrees in the process of compliance. The room by room discussion and mock-up of prior room construction will allow refinement of the birth space design. However, the issues will remain unless the user-client understands the drawings and designers know what he/she is designing. For both cultural and critical dimension, a tool to check compliance is essential.

Table 7 shows the summary of evaluation in case study 2.

**Consideration in the spaces and practices for birthing for enhancing and satisfying birthing experience for the patients in relation to Malay-Muslim birth**

Findings indicate that a good Malay-Muslim birth environment should reflect and support the Cultural Dimension, defined by linkage to family and Critical Dimension for clinical and safe-

![Figure 6. Relation and flow of family as linkage](image-url)

*Figure 6. Relation and flow of family as linkage*
ty consideration. Designing the birthing space or LDR only, do not make a holistic support to the cultural dimension of birth environment, as both spouse and patient-mother has to pass through the clinical areas of the hospital from admission to maternity ward. Waiting relatives have to wait at the main entrance outside LDU.

For safety and travel distance, after birth patient-mother are trolleyed or wheelchair by staff through dedicated routes to the wards. They seldom appear at the waiting area in front of the Patient Assessment Centre (PAC) for a family celebration of a newborn prior to admission to the maternity ward. Findings indicate that in selected hospitals where all dealing with public or families are located outside the mother’s cultural realm, both patient and spouse had to pass through clinical areas to enter a private domain (LDR) where they can be together for support without the next of kin or other family members familiar in a traditional setting. Families on hospital ground waited in the crowded waiting room or visitor’s hall for the news of baby’s arrival. The journey to the clinical

<table>
<thead>
<tr>
<th>Configuration</th>
<th>4.2m x 4.8m</th>
<th>4.6m x 8.0m</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDR</td>
<td>20.1sq.m</td>
<td>30.8sq.m</td>
</tr>
</tbody>
</table>

*Mirror image arrangement of LDR did not leave much space for cultural intervention

<table>
<thead>
<tr>
<th>Critical Dimension</th>
<th>Did not meet the requirement but manageable. Space adequacy for emergency is not met in configuration</th>
<th>Acceptable. Placement of fixed items to be clear of the critical area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Dimension</td>
<td>Spatially adequate. Access for spouse is through clinical/ internal corridor. Apart from SOP, others are discreet</td>
<td>Spatially adequate. Access for spouse is through clinical/ internal corridor. Apart from SOP, others are discreet</td>
</tr>
<tr>
<td>Remarks</td>
<td>Satisfy the requirement for area. Configuration did not meet the requirement especially along the length of the bed for ease of intubation (head area), birth (foot area) and maneuvers to OT if need be (Foot area). Requires distract in case of prolong birth.</td>
<td>Satisfy the requirement for area. Configuration did not meet the requirement especially along the length of the bed for ease of intubation (head area), birth (foot area) and maneuvers to OT if need be (Foot area). Requires distract in case of prolong birth.</td>
</tr>
</tbody>
</table>

Table 7 - Summary of evaluation in case study 2
realm is long and subjected to other patient's privacy and staff routine activities (Figure 6).

CONCLUSION

The search for criteria to humanize the birth environment through culture and belief system that encompass the way of life of Malaysians, with the Malay Muslim practices used as the case study, was initiated and found. To humanize the birth spaces, although the sitting is within the clinical realm, it is important to be connected to the culture through family members not only within the birth space but all along the route from labour onset at home to the birth space. Adequate existing space can accommodate the requirements while others may have to scale the scope. The reorganisation of LDU for new LDU is, therefore, eminent if it is to be a holistic endeavour. However, the findings and recommendations of the study does not an end here, but set forth to opens more avenues towards realisation that the future journey will no doubt brings bountiful gain and confidence in using own data and own method with understanding of the transient intangible culture to give the space a meaningful dimension. Adaptation may have to be made to existing LDUs if policy makers are willing to Malaysianise the healthcare spaces and celebrates the new Malaysians with the value that culture brings into the modern healthcare environment. The outcomes require the reorganisation of the Labour Delivery Unit layout altogether and not just the labour delivery room in addressing the birthing culture. Malaysia is multi-culture. The study shows similarities in the birth event in
the cultures. Further studies on other cultures in Malaysia will provide a more conclusive finding to providing a culturally sensitive and humanized LDU design.

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