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Maternal Mental Health – a serious neglected issue

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Maternal mental health, also known as perinatal mental health, refers to a mother's overall emotional, social and mental well-being, both during and after pregnancy¹. This includes mental disorders during pregnancy and in the first year after the birth of the baby. Factors such as poverty, migration, stressful and extreme situations, domestic and other types of gender based violence, conflict situations, natural disasters, and low social support will increase risks for these disorders in this vulnerable group.

Mental health issues, as well as putting the mother in danger of her health and wellbeing, seriously hamper the mother's capacity to look after her newborn effectively; such issues vary from improper breast feeding to child neglect and abuse, sometimes leading even to infanticide. It is also a serious issue for the mother, sometimes leading to instances of maternal suicide.

Globally, it has been shown that around 10% of pregnant women and 14% of postpartum women experience mental health problems; mainly depression. In developing countries this figure is higher; with up to 20% of mothers developing postpartum depression¹. Post partum psychosis is a well known problem but there are other important mental health issues as well, which include intentional self harm (ISH), suicide ideation and suicide itself¹.

In Sri Lanka, maternal mental wellbeing is not given as much priority as the rest of the ante and postnatal care. Although the latter are well established, with Sri Lanka boasting to have the best antenatal care and coverage in the South Asian region, perinatal mental

health has taken a back seat. According to published statistics, in 2019 and 2020 there were 27 cases of postpartum psychiatric illnesses diagnosed for every 10,000 deliveries in Sri Lanka². This is an increase in the trend compared to 16 cases reported in 2016. Latest available statistics in Sri Lanka show that in 2021 and 2022 there were 2 and 3 maternal suicides reported respectively. (FHB unpublished data 2023); These figures seem to be the tip of the iceberg.

A study done in 2023 showed that in a cohort of 1295 pregnant mothers interviewed in the north central province of Sri Lanka, there were 15 cases of reported intentional self harm (ISH) and 13 cases of suicidal ideation. Of these mothers, 10 had already attempted suicide³. Interpolated from these data (using cohort design), the calculated incidence density of ISH and attempted suicide (in this cohort) was 11.6 and 7.6 per 1000 pregnant women respectively, for the first two trimesters³. Comparatively the concurrent hospital data showed only 2 cases of ISH in this same group³. This is a clear example that mental health issues are underreported in the official statistics.

Maternal mental health is an important component in providing a holistic approach to the management of pregnant and postpartum mothers. Presently, it is not being given the priority it deserves. Interventional studies done in Sri Lanka and other countries show that a surveillance mechanism on maternal mental health can be easily introduced into health care systems even in resource poor settings^{4,5,6}. Simple screening tools could be incorporated into the existing mechanism of ante and postnatal care programs and be used by grass root

level health care workers for data collection^{5,6}. This, done early in pregnancy would enable high risk patients to be identified and preventive action taken. As well as preventing SIH and suicide, this would also improve mental wellbeing among mothers, which is vital for a healthy mother baby relationship.

Mental wellbeing of the mother is essential to the healthy growth and development of her baby. Sri Lanka is in an excellent situation since this type of tool can be easily incorporated into the present well established maternal and child health programmes. The tools could be used by the community midwife without incurring much further expenditure. This way, high risk mothers could be identified antenatally and given necessary support before their mental health issues magnify into greater problems.

On a positive note, it is heartening to know that the ministry of health is in the process

of developing this kind of surveillance program to be incorporated into the maternal and child care health care system of our country. Since 2015, some mechanisms are already in place; the Edinburgh Post Partum Depression Scale (EDPS) is being used postnatally to identify high risk patients⁵. The psychological autopsies conducted in cases of maternal suicide, enable one to identify factors leading to the death of the mother, so that interventions could be planned to prevent similar occurrences in the future⁷. However, having similar mechanisms antenatally will help identify at risk patients early, avoiding ISH and suicide attempts which occur later.

It is time Sri Lanka incorporated mental health wellbeing to its routine maternal and child health programmes. Ensuring mental wellbeing in the mother will undoubtedly ensure better outcomes for both mother and her new born baby in the future.

Professor Dulanie Gunasekera
Editor in Chief

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Maternal suicides, the tip of an iceberg

Kathriarachchi S.T.¹, Suraweera C.², Batakandage P.M.³

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Introduction

Pregnancy and childbirth are generally considered life events with a positive impact on a mother's mental health. Mother's mental health status has a significant impact on the developing child. However, sometimes, the physiological and sociocultural factors associated with pregnancy and childbirth predispose the mothers to have adverse psychological consequences, leading to suicide, thus affecting the mother, baby, and family adversely.

Perinatal mental health disorders refer to the mental health disorders that arise in the period of pregnancy and the first twelve months following childbirth¹. Psychiatric disorders are more common in the first and third trimesters of pregnancy than in the second. Unwanted pregnancies are associated with anxiety and depression in the first trimester, whereas fears about the delivery or fetus are common during the third trimester. Psychiatric disorders in pregnancy are more common in women with a previous history of psychiatric and medical conditions. Depression is the most common psychiatric disorder associated with pregnancy. Pregnant women may also suffer from anxiety disorders, such as panic disorder, obsessive-compulsive disorder and eating disorders. It is rare for women to experience new-onset psychoses during pregnancy¹.

One of the most dreaded events for those who are involved in providing maternal

mental health care is maternal suicide. Suicide during the perinatal period represents a heart-breaking tragedy that is often difficult to comprehend. Apart from the loss of life itself, the repercussions on both the family and the wider community are profound and enduring.

Generally, suicide in women is not as common as among males, with an annual rate of about five to ten deaths per 100,000 population, and rarer in the perinatal period due to the protective factor of pregnancy and baby, with a rate of one to five deaths per 100,000 live births in high-income settings². However, suicide stands as a significant contributor to maternal mortality, constituting approximately 20% of maternal deaths³. This varies according to the region studied, with 5–20% in high-income countries and 1–5% in low and middle-income countries².

In Sri Lanka, it is observed that the rate of maternal suicide has increased from 0.8 per 100,000 live births in 2002 to 12.1 per 100,000 live births in 2010⁴. Such high figures cause significant concern as they highlight the need to recognize and address factors contributing to maternal suicide. A study conducted in a rural district of Sri Lanka revealed that 17.8% of recorded maternal deaths were due to suicide, and 79% of the women who had killed themselves were less than 30 years old⁵. In considering suicide as a cause of maternal mortality, it is also important to understand the prevalence of suicidal ideation and

suicide attempts (sometimes together labelled as suicidal behavior) and self-harm, as these are major risk factors for suicide⁶.

A study conducted in Anuradhapura district in 2019, 'suicidal ideation and intentional self-harm in pregnancy as a neglected agenda in maternal health; an experience from rural Sri Lanka', it was found that out of the study population, 0.8% answered "yesquite a lot" to suicidal ideation (SI) question whereas 2.3% answered "yes sometimes", and 2.7% answered, "hardly ever"⁵. The study also revealed that 0.8% of women reported having a history of intentional self-harm during their current pregnancy. It has been estimated that around 500 pregnant women each year have SI, and around 130 pregnant women have intentional self-harm annually in the district⁵.

Global statistics report a prevalence of suicidal ideation in the perinatal period ranges from 2 to 5% among women seeking obstetrical care^{7,8,9,10,11}. The reported rates are higher among special groups of women: 10% among women veterans between the third trimester and six weeks postpartum¹², 5 to 14% among perinatal women with depression or in mental health treatment^{13,14}, 8% among perinatal women living with HIV¹⁵, and 9% among those screening positive for postpartum depression among mothers of babies admitted to a neonatal intensive care unit¹⁶. These statistics indicate that women with special needs must be monitored more carefully for suicidal behaviour during pregnancy and childbirth.

Maternal Mortality Ratio (MMR), suicide rate, and maternal suicide rate

The annual number of female deaths from any cause related to or aggravated by pregnancy or its management during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy,

expressed per 100,000 live births, for a specified period is a 'maternal death'¹⁷. This excludes accidental or incidental causes¹⁸. The maternal mortality ratio is defined as the number of maternal deaths during a given period per 100,000 live births during the same period¹⁷. The MMR indicates the risk of maternal death relative to the number of live births. MMR is a crucial indicator of the health status of a population, particularly regarding maternal health and the quality of healthcare systems in a country.

The MMR in Sri Lanka has dramatically decreased because of exceptional maternal and childcare services in Sri Lanka and is currently 30.2 per 100,000 live births¹⁹ (Figure 1). Initiatives taken over the past years in Sri Lanka to promote safe pregnancy and puerperium have led to a fall in maternal mortality rate from 500 per 100,000 live births in the 1950s to 30 per 100,000 in 2015¹⁹. This decrease is due to the reduction of untreated medical conditions and complications of pregnancy contributing to maternal mortality from more widely acknowledged causes like sepsis and haemorrhage, which the improved perinatal care services of the country have successfully addressed. However, maternal suicide rates have increased from the year 2002 to 2010²⁰. This rise in maternal suicide in Sri Lanka is in marked contrast to the reduction in rates of maternal mortality due to other causes. Thus, the identification of associated factors and possible methods of prevention of maternal deaths due to suicide and addressing major drawbacks in the context of prevention of maternal suicide is becoming an increasingly crucial topic for open discussion²⁰.

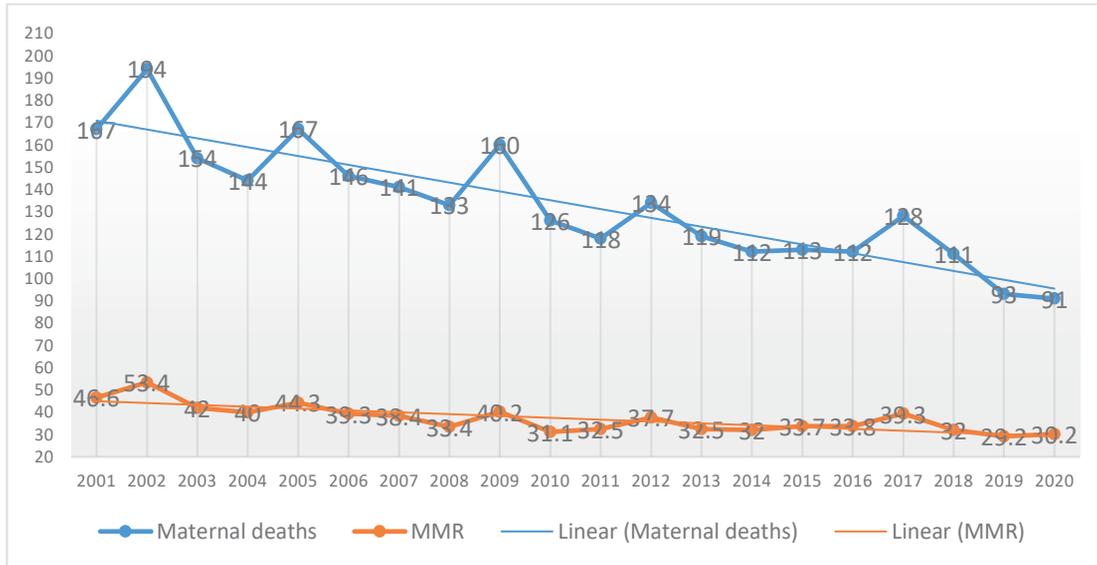


Figure 1: The number of maternal deaths in Sri Lanka from 2001 – 2020
 (Source: The annual report of the Family Health Bureau, 2020)

The number of deaths from suicide and intentional self-harm per 100,000 people is defined as the suicide rate of a country, and the current suicide rate in Sri Lanka is 15 per 100,000 population²¹. Following the peak of the suicide rate in Sri Lanka, the second highest in the world, in 1996, the Presidential Task Force for suicide prevention was established, which gave recommendations to reduce means of suicide like banning certain pesticides. Several other activities were initiated at the peak of suicide, including mental health educational programs for the detection and

treatment of mental disorders to health staff, the development of counselling services and the decriminalization of suicidal behaviour coupled with increasing availability of trained counsellors²². These measures were responsible for bringing down the suicide rate of the nation from 47 per 100,000 in 1996 to 15 per 100,000, which is compatible with many other countries in the world. The figure remains stable even following the pandemic²¹. The suicide rate and its correlation with the banning of certain lethal pesticides is illustrated in Figure 2.

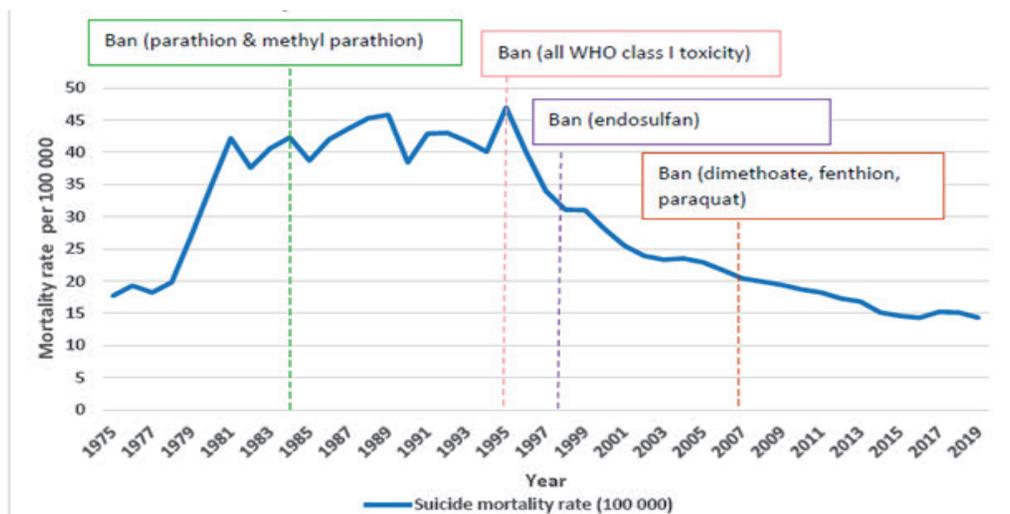


Figure 2: Mortality rate due to suicide in Sri Lanka (1975 – 2019)
 (Source: World Mental Health Report 2022)

As illustrated, Sri Lanka was successful in reducing the overall suicide rate of the country. Similarly, the current maternal mortality ratio of 30.2 in 2020, compatible with high-income countries, is also a significant achievement for a country that faces numerous challenges.

However, despite the reduction of both the above vital indices, there is a rise in the maternal suicide rate, as illustrated in Figure 3, indicating that a coordinated and streamlined approach is a necessary priority of the time to bring down the number of maternal suicides¹⁹.

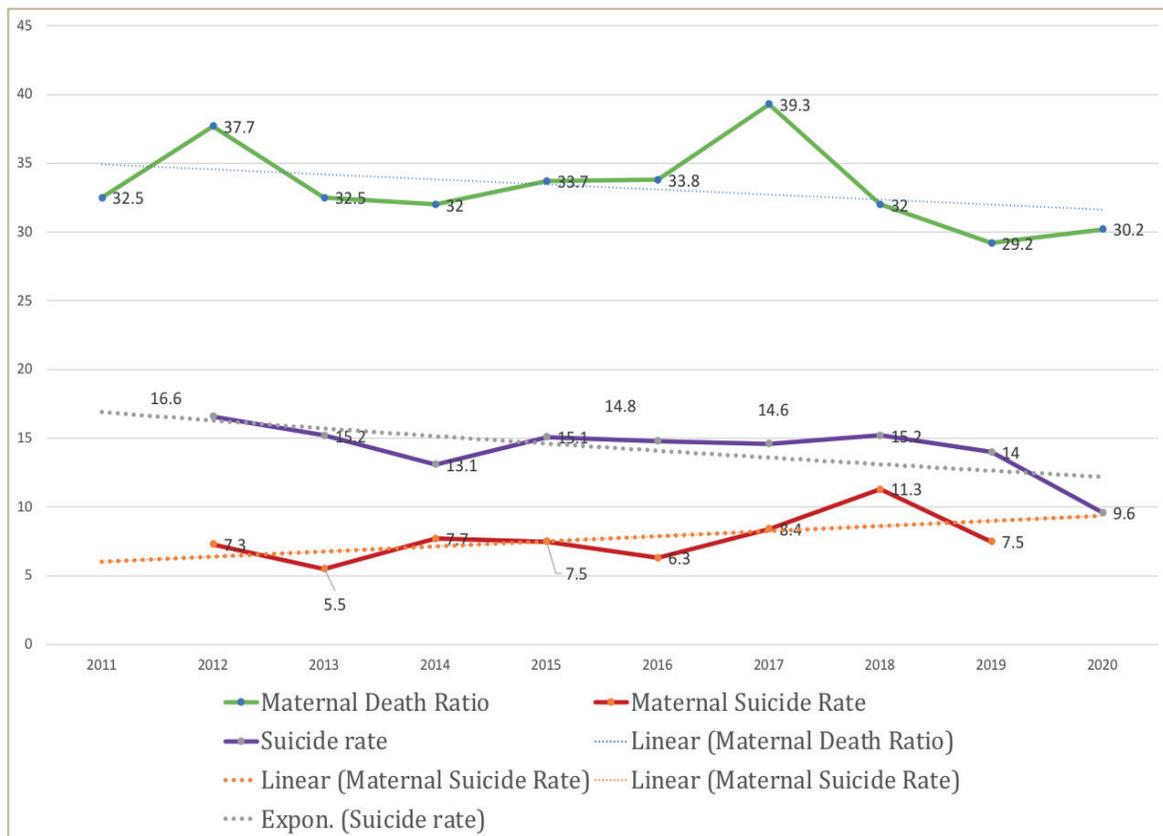


Figure 3: Comparison of maternal death ratio, maternal suicide ratio and suicide
 Source: *Counting and reviewing maternal suicides in resource-limited settings: Lessons from Sri Lanka*, Jayaratne K, Karunasena C, Rajapakse TN, Ranatunga RJKDRL

The number of maternal deaths and maternal suicides is shown in Figure 4, and it also illustrates that Sri Lanka has not been able to reduce maternal suicide rates despite other achievements in preventive health.

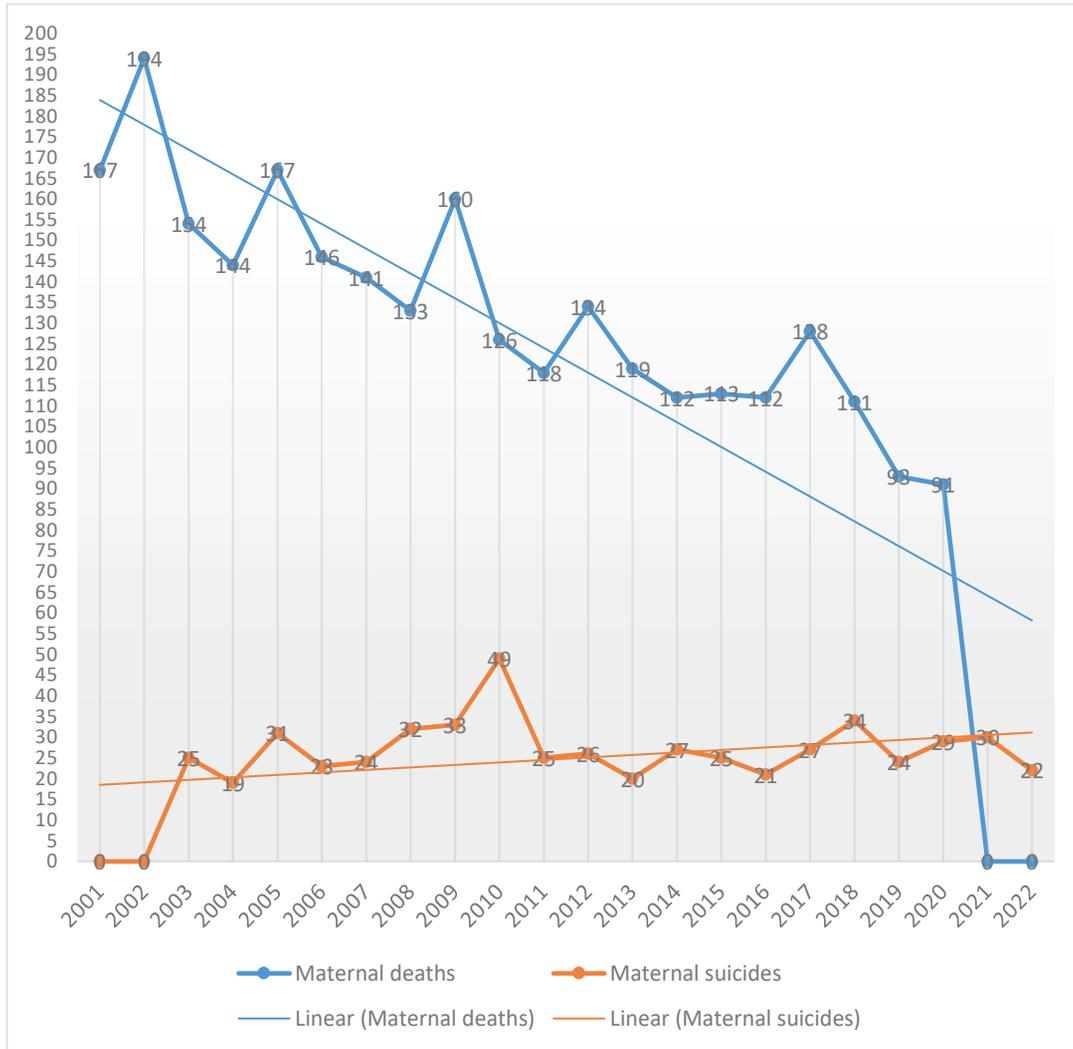


Figure 4: Maternal deaths and maternal suicides
Source Family Health Bureau 2024

The status of maternal suicide in Sri Lanka

Statistics on maternal suicides were not analyzed prior to 2001. Jayaratne et al. reviewed data on maternal suicides in Sri Lanka from 2002 to 2017. The number and rate of maternal suicides increased from 0.8 per 100,000 live births in 2002 to peak at 12.1 in 2010 and showed a slight decline to 8.4 in 2017¹⁹. Following analysis of data collected from psychological autopsies carried out on maternal suicides. The team observed that 56.2% married and 9.2% unmarried women killed themselves during the perinatal period. Out of the women who committed suicide, 42.33% of women committed suicide during pregnancy and 31.4 % after delivery. The common

methods used were self-poisoning (36.8%) and hanging (31.6%). Out of maternal suicides studied, 73.7% were temporarily associated with interpersonal conflicts. Underlying depression was likely in 36.8%, and there was a family history of suicide in 15.8%¹⁹ of women. On analyzing data from 22 maternal suicides out of 29 in 2020 at the National Maternal Desk Review, 54.5% were due to hanging, while 22.7% were due to burns. 27.3% had a recorded mental illness in the past. 81.8% had recent stressors closer to the attempt, and 72.2% had relationship issues (Unpublished data from the Maternal Desk Review 2020).

Factors affecting maternal suicides

Limited data from Sri Lanka indicate a significant number of mothers who committed suicides had interpersonal stressors like intimate partner violence before the incident. Self-poisoning, hanging and burning had been used as methods, and a significant proportion had underlying depression¹⁹. History of mental illness and family history of suicides were also associated with maternal suicides to some extent.

In the global context, demographics, history of suicide or deliberate self-harm, intimate partner violence, sexual abuse or assault, comorbid psychiatric disorders and psychoactive substance use are the most commonly associated factors with maternal suicides. These are similar to the factors associated with the general population and apply to the Sri Lanka setting, too^{23,24}. Globally, younger age, being unmarried, and marital issues are considered risk factors for maternal suicide³. Jayaratne et al. further observed that complex social situations, interpersonal conflicts and impulsivity have contributed to maternal suicides in Sri Lanka. Out of the psychiatric comorbidities, depression was a critical associated factor in Sri Lanka¹⁹.

Postpartum psychosis and postpartum depression are two well-known contributors to maternal morbidity and mortality in 2008²⁵. The distinctive features of these mental disorders and underlying contributory factors need to be recognized by caregivers to avert major catastrophes. Postpartum psychosis is the most severe form of postpartum mental disorder, typically in the first two weeks after delivery^{26,27}. Puerperal hormonal shifts¹, obstetric complications²⁸, sleep deprivation²⁹ and increased environmental stress are recognized contributing factors to the onset of illness.

Preventing maternal suicides

Globally, strategies that are recommended for the specific prevention of maternal suicides are screening for mental health issues and substance abuse and specifically for suicidal ideation, treatment of psychiatric conditions, and improving access to care and integrated mental health treatment approaches³.

Barriers to reducing maternal suicides in Sri Lanka are several. Some of these factors include the deficiency of research on the prevalence of maternal suicide and associated risk factors, lack of reporting leading to non-identification of cases (cases may be reported as accidents), lack of awareness and knowledge about psychiatric disorders in the perinatal period, poor merger between mental health services and maternal health services, lack of supervised screening programs for identification of vulnerable or high-risk mothers, and lack of identification of barriers to seek treatment²⁰.

Considering the paucity of data from Sri Lanka, it is safer to follow global trends in prevention. However, given the higher number of interpersonal conflicts and higher numbers of married women completing suicide, it is important to address these issues by care providers of maternal health. This highlights the need for training maternal health care providers in communication and counseling skills to achieve a more empathetic understanding of the psyche of mothers to prevent the tragedy of maternal suicides. Psychosocial factors leading to maternal suicides need more in-depth collaborative research to plan appropriate interventions in local context. With the clinical experience of the authors, it can be suggested that family health workers, medical officers of health, general practitioners, obstetricians, and pediatricians need to be sensitized on the detection of mental health issues of mothers and children to refer them to appropriate agencies for further care. These agencies

include mental health teams, agencies that provide legal aid, social workers, organizations that facilitate the financial empowerment of women and counseling services.

Careful and thorough assessment of pregnant and postpartum mothers' risk factors and psychological well-being should be a part of the overall care provided by healthcare professionals involved in maternal care. Members of the multidisciplinary team who may have more information about the individual and their family should be adequately trained to gather relevant and sensitive information to assist in identifying personal, psychosocial and familial risk factors and actively contribute to the management process³⁰.

Insufficient mental health literacy among healthcare professionals who are involved in maternal care is a major drawback in the prevention of maternal suicides. Including psychiatry in the medical curriculum is a major positive step. Primary health care providers and obstetrics teams should have a sound awareness of risk factors, common presentations and symptomatology of maternal psychiatric disorders to recognize when to refer for further management. Timely identification and adequate management of these disorders require a coordinated approach among maternal caregiver teams³¹. Thus, in-service mental health training of medical officers of health and their teams who are involved in maternal and child health programs is vital in improving maternal well-being and prevention of suicides.

Other factors, such as social stigma and varied cultural beliefs of the women and families, may also contribute to the underutilization of available mental health care facilities. Non-availability of well-developed community mental health care teams adds to the difficulty in reaching those mothers in need who may be reluctant to seek help²⁰. Programs aimed at reducing

stigma in accessing mental health care should be delivered by primary health care teams, obstetric teams and general practitioners. Further, print and social media can be used to reduce the overall stigma of reaching out for mental health issues.

On a positive note, recognizing the importance of screening, Sri Lanka has taken steps to screen all mothers at four weeks postpartum using a validated tool, the widely accepted Edinburgh postpartum depression scale (EDPS)³². The women who are found to be positive by screening with EDPS are advised to seek mental health assessment or referred to mental health services. The administration of EDPS has strengths and weaknesses. Strengths include the ability to detect women with postpartum issues by a self-administered questionnaire.

A weakness is high false negativity and positivity rates, which may result in overburdening of mental health services. The use of validated EPDS alone is insufficient; timely detection and adequate management of these disorders require a coordinated approach with various primary and secondary care services³³.

The strong maternal and child health (MCH) services in Sri Lanka is a blessing, as women have easy access to the services at first contact point. The proximity and the frequent visits by the public health midwife in the immediate postpartum period strengthen the screening process. Information is provided to the pregnant woman and the partner at the booking session and follow-up visits at antenatal clinics and hospitals. Public health midwives play a significant role in disseminating information at the grassroots level in the community as they meet the whole family during their field visits, thus a good resource to utilize to provide information on improving maternal mental health.

Another landmark initiative in Sri Lanka which contributes to planning preventive strategies for maternal suicide is collection of data using psychological autopsy tool for maternal suicides (PAMS). This national program was initiated by the Family Health Bureau (FHB) in collaboration with the Sri Lanka College of Psychiatrists in 2015. Comprehensive, in-depth information is gathered using the PAMS on each maternal suicide case. Information gathering is done in a structured format, and is conducted by a team consist of a psychiatrist, a medical officer of health (MOH), a family health worker and a social worker. This tool yields a wealth of medical and psychosocial information on possible causative factors before suicide that will assist in planning preventive strategies. Recognizing the importance of implementing a proper screening method, FHB is currently validating a tool to initiate the national psychosocial risk factor program in the Sri Lankan preventive care system. The inclusion of maternal suicides in national statistics as a cause of maternal mortality is an important step forward in depicting the present state of the country correctly.

Mental health care facilities for post-partum mothers were scarce in the past. Recently, several specialized mother-baby units have been established in the country to provide services to mothers with mental illnesses, such as the National Institute of Mental Health, Angoda and De Soysa Maternity Hospital. Further, several psychiatry units are providing specialized care to lactating mothers with dedicated mother-baby beds within the ward. Thus, this important care need has been recognized in some hospitals; however, it is not available island wide, which need to be improved.

General preventive strategies employed for suicide prevention can be strengthened by increasing awareness of mental health literacy among the health professionals, including public health midwives, medical officers of health, and public health sisters

and obstetric teams. Royal College of Obstetricians and Gynecologists recommends that all maternity staff should have basic training in the identification of current and past history of mental health problems in pregnancy and the postpartum period and when to refer to mental health and primary care services³¹.

To bridge the knowledge gap in this area, education and training on mental and social health issues contributing to perinatal morbidity and mortality need to be included in basic training curricula, continuing professional development programs and in-service training of health care workers involved in maternal and child health, mainly preventive health, and obstetric teams. Currently, the mental health directorate of the Ministry of Health conducts these activities nationally. The national mental health helpline 1926 provides telephone service to the population in Sri Lanka. It can also be used in the promotion of the psycho-social well-being of mothers during the perinatal period, contributing to the screening, detection, and referral of mothers with mental health issues and mental health services. The Family Health Bureau (FHB) of the Ministry of Health, an important pivotal government organization, can mobilize resources for a coordinated mental health promotion program to prevent maternal suicides.

Apart from the state sector involvement, several other non-governmental agencies like ‘Sri Lanka Sumithrayo’ and ‘Shanthi Margam’, two befriending services, helplines such as CCC line and ‘Suwaseriya’ ambulance service are involved in the care of people harboring suicidal ideas and interventions. They can be utilized to reduce maternal suicides in the country by training the staff to manage cases effectively.

Conclusion

In the quest to reduce maternal deaths and organize national-level interventions, the collection of national data on maternal suicides is a vital requirement. In this regard, the inclusion of maternal suicides in national health statistics should be the first step, making it mandatory to report maternal suicides at all levels. Secondly, at-risk factors for maternal suicides need to be identified through the collection of data gathered using psychological autopsy tool of all completed maternal suicides need to be prioritized to plan preventive interventions. Thirdly, from the current available knowledge, coordinated programs need to be initiated in collaboration with the mental health directorate, preventive services and family health bureau of the Ministry of Health; Ministry of Social Services, Ministry of Women, Child Affairs and Social Empowerment, non-governmental agencies and professional colleges like Sri Lanka College of Psychiatrists, Sri Lanka College of Obstetricians, Sri Lanka College of Pediatricians and College of Community Physicians of Sri Lanka. This is a mammoth task that needs prioritization at the policy level. A thorough evaluation of maternal mental health, identification of risk factors, referral to appropriate agencies, including mental health teams, mobilizing help, and providing continuity of care to identified mothers are essential facets of program delivery. Finally, the importance of maternal mental health needs to be promoted through mass media as well as by targeted educational programs directed towards young adults and parents.

Maternal suicides remain a significant issue in Sri Lanka and have multiple and complex causative factors due to universal as well as specific medical, socio-cultural, and economic factors. Interventions unique to maternal suicides, as well as general suicide prevention strategies, should be employed vigorously in a coordinated manner for favorable outcomes.

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Case Report

Protracted haemolytic disease of newborn due to Rhesus isoimmunisation by passive acquisition of anti-D antibodies through breast milk

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Key words: Rhesus isoimmunisation; haemolytic disease of newborn; anti-D antibodies; breast milk; neonatal jaundice; haemolysis; anaemia

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Background

Rhesus isoimmunisation is a well-recognised cause of haemolytic disease of the newborn (HDN), which could lead to severe haemolysis within the first few days of life. It typically presents in the first 48 hours of life, and the haemolysis is complete by 14 days. It is caused by the placental transfer of Rhesus anti-D antibodies from a sensitised mother to her offspring. Passage of Rhesus anti-D antibodies in human breast milk causing haemolysis in the baby is very rare. Here, we report a 23-day-old neonate with prolonged haemolysis due to acquisition of Rhesus anti-D antibodies through maternal breast milk, causing persistent haemolysis, anaemia and hyperbilirubinemia.

Case presentation

A thirty-year-old AB-negative woman gave birth to a neonate at 33 weeks of gestation. She had a triplet miscarriage at 19 weeks of gestation in the past, following which a single dose of RhoGAM was given. During the current pregnancy, her Rhesus anti-D antibodies were positive at the booking visit, and the baby was delivered via emergency lower segment caesarean section due to rising antibody titres (1:520) and fetal anaemia detected in Doppler studies.

The baby did not cry at birth and required resuscitation with one cycle of inflation breaths. APGAR scores at 1 and 5 minutes were 6 and 9 respectively, and the birth weight was 2145g. He developed mild respiratory distress soon after birth and managed for mild surfactant deficient lung disease with nasal continuous positive airway pressure.

The cord blood total bilirubin was 68µmol/L with indirect bilirubin of 55µmol/L (phototherapy range 40-80µmol/L) and haemoglobin was 15.6g/dL. The baby's blood group was A positive, and the direct antiglobulin test (DAT) was highly positive (IgG 4+ and C3d negative). The blood picture showed evidence of haemolysis. HDN due to Rhesus isoimmunisation was diagnosed, and the baby was started on double-surface phototherapy soon after birth and given intravenous immunoglobulin 1g/kg on day one of life. He received phototherapy from day one to four and was discharged home on day five on exclusive breastfeeding when bilirubin was well below the phototherapy level. He was followed up until the 14th day of life and he remained to have normal serum bilirubin levels.

He presented again with jaundice and a total bilirubin of 264 μ mol/L (indirect bilirubin 244 μ mol/L) on the 23rd day of life. His full blood count revealed haemoglobin- 8.6g/dL, white cell count- 9.6x10⁹/L, and platelet count- 314x10⁹/L.

Biochemical investigations revealed aspartate transaminase-13IU/L, alanine transaminase- 9IU/L, and C-reactive protein <5mg/L. The blood picture showed normochromic normocytic red blood cells (RBCs), polychromatic cells, and occasional nucleated RBCs, indicating ongoing haemolysis. His reticulocyte count was 6% (normal 1-2%), and DAT remained highly positive (IgG 3+). Further evaluation revealed strong positivity of anti-D in maternal breast milk, indicating passage of Rhesus anti-D antibodies through breast milk to the baby.

Prolonged HDN due to Rhesus isoimmunisation by the passive acquisition of anti-D antibodies through maternal breast milk was diagnosed. The baby was given a second dose of intravenous immunoglobulin 1g/kg and a 10mL/kg packed RBC transfusion. The post-transfusion haemoglobin was 12.6g/dL. Transient cessation of breastfeeding was attempted; however, it failed due to the development of cow's milk intolerance. The baby responded well to intravenous immunoglobulin and jaundice, and serum bilirubin gradually declined. At six weeks, his haemoglobin was 10.4g/dL, bilirubin was 75 μ mol/L, and his blood picture did not show evidence of haemolysis. Breast milk became negative for Rhesus anti-D antibodies, and repeat DAT was negative.

Discussion

HDN is caused by antibodies formed against over 50 RBC antigens; however, it is most commonly caused by antibodies formed against Rhesus antigens¹. Of the Rhesus antibodies, Rhesus anti-D is the most commonly reported cause of HDN. In

addition to Rhesus antibodies, HDN is caused by the incompatibility of the ABO blood group. Less common causes of HDN include antibodies directed against antigens of the Kell blood group (e.g., anti-K and anti-k), Kidd blood group (e.g., anti-Jka and anti-Jkb), Duffy blood group (e.g., anti-Fya), and MNS blood group².

HDN of Rhesus isoimmunisation is characteristically caused by the transplacental passage of maternal IgG antibodies to the fetus in utero. Hence, it typically presents within the first 48 hours of life, and the severity gradually weans off with time. This case report presents a neonate with worsening jaundice and hyperbilirubinemia during the fourth week of life. Ongoing haemolysis was evident by reticulocytosis, polychromatic cells in the blood picture, and persistently positive DAT. This prompted us to examine the sources of the continuing passage of anti-D antibodies, which confirmed the passage of anti-D via maternal breast milk.

A few previous studies had shown the presence of anti-D antibodies in breast milk leading to ongoing haemolysis in Rhesus-positive babies born to Rhesus-negative mothers^{1,3,4}. Similarly, there are reports of persistent neonatal thrombocytopenia caused by antiplatelet antibodies of immune thrombocytopenia mothers transmitted through breast milk⁵. In both instances, the cessation of breastfeeding had been a successful mode of treatment^{3,5}. However, in our patient, we could not stop breastfeeding due to the development of cow's milk protein intolerance; hence, the baby continued to have breast milk. We treated the child with intravenous immunoglobulin, to which the child responded.

In conclusion, this case report presents a very rare instance of prolonged haemolytic disease of newborn due to Rhesus isoimmunisation by passive acquisition of anti-D antibodies through maternal breast

milk. It also highlights the successful treatment with intravenous immunoglobulin when discontinuing breastfeeding is not feasible.

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Picture Story

Parapagus conjoined Twins: A Sri Lankan case report

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Keywords – Parapagus, Conjoined twins

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Introduction

Conjoined twins are a very rare occurrence where twins are born physically connected. There are 7 known subcategories¹, one of which is 'parapagus' meaning lateral sides of the lower halves of the body are connected to varying degrees.

A 24 year old mother in her 5th pregnancy with 3 previous miscarriages, was referred as she was diagnosed to have conjoined twins at 33 weeks of gestation, confirmed by fetal magnetic resonance imaging (MRI). Her 1st pregnancy resulted in spontaneous vaginal delivery of a healthy term neonate.

In this pregnancy fetal echocardiogram revealed a single heart with a single atrium, two well-formed ventricles with a large ventricular septal defect (VSD).

Elective lower segment caesarean section was planned at 34+4 weeks of gestation and babies were born with 2 heads, 4 upper limbs, single chest wall, single abdomen with a single umbilical cord containing 2 arteries and 1 vein, single anus, female genitalia and 2 lower limbs (Figure 1). No dysmorphic facial features, urine passed and bowel opened.



Figure 1 – Physical appearance of the parapagus conjoined twins.
(Photo reproduced with permission)

Right side twin not cried at birth, cyanosed, floppy, no spontaneous breathing, heart rate around 60-80 and APGAR score was 2,4,6 respectively at 1,5,10 minutes.

The left twin had a weak cry at birth, cyanosed, no tone, spontaneous breathing was present but not effective, heart rate around 60-80 and APGAR score was 3,4,6 respectively at 1,5,10 minutes.

5 inflation breaths given and ventilation breaths continued in both. Their colour improved, saturation around 70%, heart rate >100, weak cry in both, spontaneous breathing achieved but not effective.

Again condition deteriorated and despite resuscitation, they died after 1 hour of birth.

X-rays showed 2 rib cages which were fused medially, underdeveloped lungs and 2 vertebral columns (Figures 2, 3).

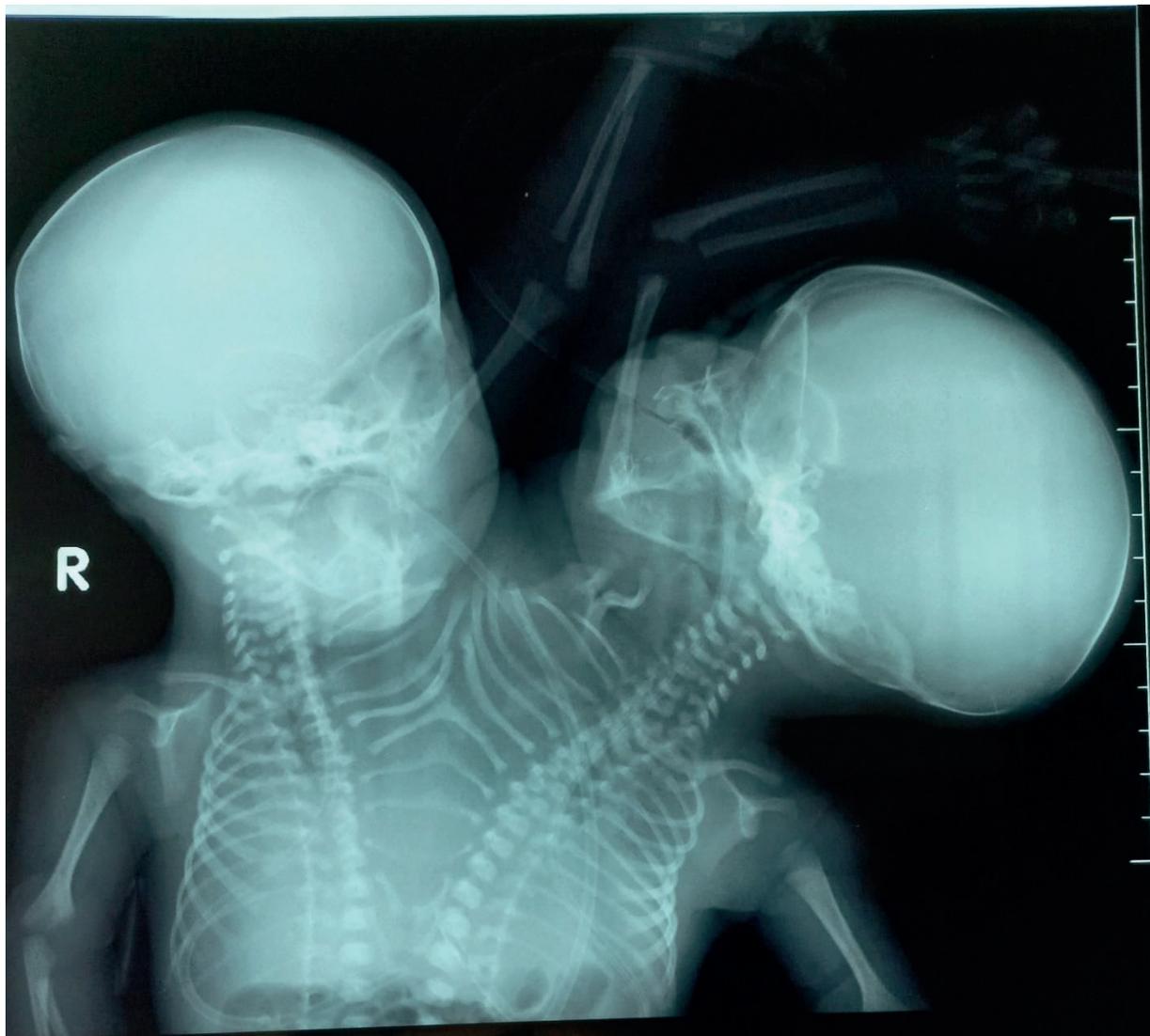


Figure 2 – Medially fused rib cages and underdeveloped lungs.

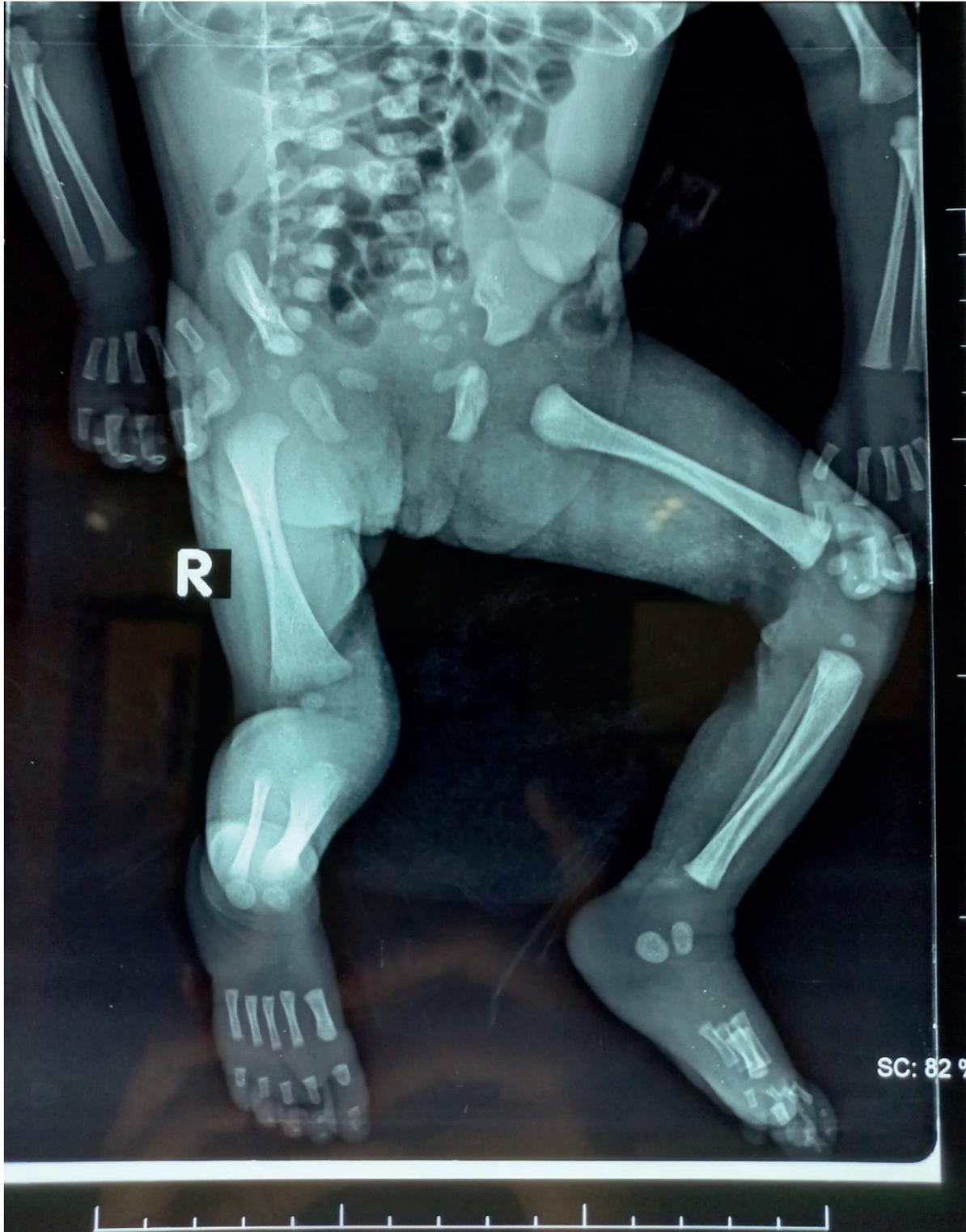


Figure 3 – Separate vertebral columns.

Discussion

Conjoined twins are rare, with the incidence being approximately 1:50,000 in utero to 1:250,000 live births². 65% of cases are stillborn, while 35% out of live births, babies die within the first 24 hours³. Although the exact aetiology is uncertain the probable aetiology is incomplete division of the zygote between 13 to 15 days after fertilization⁴ resulting in 7 subcategories according to the site of conjunction: craniopagus, pyopagus, thoracopagus, cephalopagus, parapagus, ischiopagus, and omphalopagus¹. Male to female ratio is 1:3⁴. Conjoined twinning has no associated risk found with race, parity, maternal age or heredity⁵.

Above discussed babies are female parapagus conjoined twins.

Early diagnosis will be crucial as this condition leads to physical implications to the mother as well as psychological and social implications to both parents. Prenatal ultrasound scan, fetal echocardiogram and fetal MRI are useful investigations in diagnosing and determining the extent of the condition.

It will help to decide on the postnatal treatment plan for the conjoined twins medically and surgically as early as possible.

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SUPPLEMENT

Summary Proceedings of the 22nd Annual Sessions of the Perinatal Society of Sri Lanka 2023

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EARLY DIAGNOSIS OF LETHAL CONGENITAL ABNORMALITIES

Based on Panel Discussion II: Early diagnosis of lethal congenital abnormalities at the 22nd Annual Scientific Congress of the Perinatal Society of Sri Lanka.

Panelists:

- *Professor Tiran Dias (Obstetrician and Gynaecologists)*
- *Dr. Nishani Lucas (Consultant Neonatologist) Senior Lecturer in the Department of Paediatrics, Faculty of Medicine, University of Colombo*
- *Dr. Chithramalee de Silva (Director of Maternal and child health, Family Health Bureau, at Ministry of Health Sri Lanka)*

Introduction

Lethal congenital anomalies are devastating birth defects that are tragically incompatible with sustaining life. Infants diagnosed with these anomalies often endure profound pain and suffering, while their families are left to grapple with immense emotional and financial hardships. At the same time, the Sri Lanka healthcare sector is constrained in its ability to provide optimal care to both these children and their caregivers.

Prenatal diagnosis of lethal anomalies plays a pivotal role in preparing for the birth of newborns with complex needs, but its effectiveness has been hampered by a shortage of trained specialists, proper scan machines and time constraints within the government health sector. Alternatively, prenatal diagnosis of lethal anomalies without comprehensive care options increases the burden on care givers as well as healthcare staff. This can lead to transfer of neonates to distant tertiary care neonatal centers, driven by unrealistic parental expectations and combined with the lack of options for care for fetuses and newborns this places an undue financial and emotional burden on parents hampering their quality of life. Moreover, the absence of legislation regarding treatment limitations or withdrawal in Sri Lanka leads to prolonged bed occupancy in intensive care units (ICU) by these neonates, without overall

improvement in outcomes. A combined effect is an increased neonatal mortality rate due to death of babies born with lethal congenital anomalies and healthy babies denied critical care facilities held up by babies with lethal anomalies who will invariably die later.

The current scenario poses a significant burden on parents, healthcare resources, and neonatal care outcomes, which necessitates comprehensive reforms.

Problems

1. Non uniform access to standard pre-natal anomaly scans
Lack of availability of obstetricians trained in fetal medicine, substandard obstetric scan machines and time constraints in busy government health care setup has led to inequities in access to pre-natal anomaly scans.
2. Lack of management options following diagnosis of prenatal congenital anomalies.
Currently in Sri Lanka, medical termination of pregnancy (MTP) is only legal when the mother's life is in danger. As such lethal congenital anomalies of the fetus is not an indication for

termination. This means that families who have received a prenatal diagnosis of a lethal congenital anomaly have no choice but to continue the pregnancy to term. Furthermore, there are no specialized palliative care services for neonates diagnosed with lethal congenital anomalies.

3. Financial and Emotional Burden on Parents

Due to the legal situation mothers are forced to carry the pregnancy to term and give birth to a baby who will die shortly after birth. Often these neonates are transferred far from home to tertiary care neonatal centers. This causes an undue financial and emotional burden on families already grappling with the heartbreaking diagnosis.

4. Occupancy of ICU Beds and critical care services.

Following birth, babies with lethal congenital anomalies occupy precious ICU beds and other critical care services for extended periods, despite the absence of improvements in overall outcomes. This is due to a lack of laws and regulations on the limitation or withdrawal of treatment in Sri Lanka. This in turn limits resources for babies with treatable conditions and excellent long-term outcomes.

Proposed Solutions

1. Enhance accessibility to high-quality anomaly scans

Promote specialized fetal medicine training for postgraduate trainees. Invest in obtaining high quality obstetric scan machines and equitable distribution of them and ensure accessibility to anomaly scans at government sector institutes for all pregnant women to allow for early detection.

2. Legalization of MTP for Lethal Congenital Anomalies

Advocate for the legalization of medical termination of pregnancy in cases of lethal congenital anomalies to provide parents with a compassionate and humane choice, advocate for community support for MTP and establish clear guidelines and criteria for MTP, involving bioethics boards composed of multiple professionals to ensure ethical decision-making.

3. Development of Holistic Palliative Care Services for babies born with lethal congenital anomalies

Establish holistic palliative care services including comfort care and educate medical professionals regarding availability of such palliative services.

4. Care for Caregivers

Establish care services for caregivers including mental health support, respite care and financial assistance programs.

Conclusion

Addressing the issues surrounding lethal congenital anomalies in Sri Lanka is a pressing matter that requires comprehensive reform especially given the limited health budget in Sri Lanka currently. Legalizing medical termination of pregnancy, expanding anomaly scans, and developing palliative care services and holistic care for caregivers are crucial steps to reduce the burdens on parents, optimize healthcare resources, and ensure compassionate care for affected babies. These measures will ultimately lead to improved neonatal care outcomes and a reduction in neonatal mortality rates.

IMPROVING NEONATAL OUTCOMES WITH ADVANCED TECHNOLOGY

Based on Panel Discussion I: Improving Neonatal Outcomes with Advanced Technology at the 22nd Annual Scientific Congress of the Perinatal Society of Sri Lanka.

Panelists:

- *Dr. Dilani Dehigama (Consultant Neonatologist), Teaching Hospital Mahamodara*
- *Dr. Saman Kumara (Consultant Neonatologist), Castle Street Hospital for Women*
- *Dr. Nalin Gamaathige (Consultant Neonatologist), De Soyza Hospital for Women*
- *Dr. Amit Gupta (Consultant Neonatologist), John Radcliffe Hospital in Oxford, UK*

Presentations were done by Dr. Dilani Dehigama, Dr. Saman Kumara and Dr. Nalin Gamaathige while Dr. Amit Gupta shared his views and experiences on all the discussed topics.

Three clinical interventions for the management of preterm newborns were discussed by the panelists, where the technology used in Sri Lanka is compared with similar clinical scenarios in the United Kingdom (UK).

The key interventions discussed were:

1. Surfactant treatment- current practice and future trends
2. Therapeutic cooling for perinatal hypoxia and sudden unexpected postnatal collapse
3. Nitric Oxide therapy for preterm newborns with PPHN (Persistent pulmonary hypertension)

Dr. Dilani Dehigama was the first speaker of the discussion, and her topic was based on the current practice and future trends of surfactant treatment.

A few of the salient points she emphasized were:

1. Importance of exogenous surfactant in the reduction of the risk of pneumothorax and neonatal death in infants with respiratory distress syndrome.

2. Surfactant administration as a way to minimize mechanical ventilation times.
3. Recommended modes of Surfactant delivery - Non-invasive mode over invasive mode.
4. Doses of surfactant - High dose against low dose.
5. Multiple dosing of surfactant and the questionable additional benefit.
6. Other indications of surfactant therapy such as meconium aspiration and congenital pneumonia.

During the discussion following the presentation,

Dr. Amit Gupta mentioned that the current volume of surfactant being used is safe but emphasized that if it is administered to the wrong side of the lung, it might lead to collapse.

He added that small doses are preferred, the second dose will be less used, and multiple dosing has no additional benefit. However, if multiple doses of surfactant are given, the gap between the first and second doses is usually around 8 hours, which is also practiced in the UK.

Two approaches to Surfactant replacement were discussed. Brief intubation combined with surfactant administration followed by extubating (INSURE) was compared with more recently introduced less invasive surfactant administration (LISA). The cost of using LISA is around 10,000 Indian rupees. However, LISA is not available in Sri Lanka.

The future use of synthetic surfactants and their cost-benefits were discussed, and it was emphasized that using surfactants on all patients with respiratory distress won't be advantageous.

The next speaker was Dr. Saman Kumar, who spoke on Therapeutic cooling for perinatal hypoxia and sudden unexpected postnatal collapse.

The key points by the speaker were;

1. The effectiveness of therapeutic hypothermia in treating mild to moderate Hypoxic Ischaemic Encephalopathy in newborns.
2. The survival of apoptosis-prone cells due to modification by therapeutic hypothermia
3. The target temperature for therapeutic hypothermia
4. Using therapeutic cooling beyond widely accepted criteria depending on the Clinician's judgment, for i.e., using cooling after day one
5. Common unclear areas include therapeutic cooling for babies born at the margin of the defined maturity and cooling for babies with severe PPHN or coagulation defects.

During the discussion,

Prof. Amit Gupta mentioned that cooling worsens the condition of babies with Pulmonary Hypertension.

Dr. Nalin Gamaathige has questioned whether to stop cooling once the condition improves or wait for 72 hours. Prof. Amit Gupta was in favor of waiting, provided that the baby is being continuously monitored.

Nitric oxide (NO) therapy for preterm newborns with PPHN was the topic taken by the final speaker, Dr. Nalin Gamaathige. A case scenario of a preterm baby who received nitric oxide therapy during the hospital stay was presented, and a discussion was held on that.

The key points discussed were,

1. Place of nitric oxide use in pre-term babies -

Improved oxygenation with NO and its impact on term babies who were suspected to have lung hypoplasia is well understood in the available literature. As per the guideline, NO therapy can also be used in selected pre-term babies on suspicion of lung hypoplasia.

2. Current practice in the UK and issues identified.

In Oxford, UK, the use of NO therapy for very preterm babies has been carried out for many years. Ideally, an echocardiogram should be done on these babies before the commencement of NO therapy.

For 9 out of 10 babies, they are conducting an echocardiogram. However, when the baby is very sick with low saturation and on an oscillator or when the cardiologist is not available can start on NO therapy without an echocardiogram upon the decision made on clinical grounds. But try to get it done soon.

NO therapy is commonly used in the UK, and a graph from 2013 -2021 was shown by Dr. Amith Gupta, which showed the use of NO therapy in his center at Oxford. Following a thorough investigation of cases where NO therapy was used, they found that most of the babies were switched off from NO early. However, the problem identified was not switching off NO when there is no benefit.

Thus, Dr. Gupta recommended starting with the NO if lung hypoplasia is suspected and if the baby is not improving while receiving NO to take it off.

Compiled by

Dr. Casthuri Kandasamy

Dr. Morina Fernando

CHALLENGES IN NUTRITION SUPPORT IN PRETERM NEONATES

Based on Plenary 1: Challenges faced in pre-term nutrition at the 22nd Annual Scientific Congress of the Perinatal Society of Sri Lanka.

Conducted by Dr. Manoj V C (India)

Challenges faced in pre-term nutrition are an important aspect at present, given that nutrition plays a pivotal role in ensuring the well-being of a newborn. The pre-term neonate can be defined as a baby born alive before 37 weeks of pregnancy is completed (1). Based on the plenary in the sessions conducted by the Perinatal Society of Sri Lanka, Dr. V C Manoj stated that the three main nutrition challenges in a pre-term neonate are the neonate being too sick to feed, sepsis, and mother's milk being unavailable. The most common solutions that are generally carried out are to nurse and keep the baby Nil Per Oral (NPO) and commence total parenteral nutrition, even if asymptomatic, start antibiotics to prevent sepsis, and start formula feeds if breast milk is unavailable.

Enteral feedings have been incorrectly withheld due to low APGAR scores, the use of umbilical catheters, apnea and bradycardia, mechanical ventilation, CPAP, vasoactive drugs, and total parental nutrition, as Dr. V C Manoj mentioned. Enteral feeding, however, must not be avoided. Dr. Elsie Widdowson identified that the suckled pig's duodenum gains 42% of its weight in the first 24 hours after birth. This fact can also be taken in the context of neonates, and minimal enteral nutrition (MEN) should be promoted from birth. Mucosal growth and development depend on trophic feeds such as MEN, not parenteral nutrition (2).

It has been proved that minimal enteral nutrition brings about improved feeding tolerance and growth, less requirement for phototherapy, decreased cholestasis, decreased osteopenia, contributes to

gastrointestinal trophic hormone surges, improved motility, and no added increase in complications (eg:- NEC) (2). In fact, the factors influencing abnormal intestinal bacterial colonization in preterm neonates are the hospital environment, particularly non-human milk feeding within that environment, antibiotic therapy, and caesarian delivery (3).

Another common misconception is that preterm neonates require antibiotics; the justification for this is that the preterm neonate has an immature immune system, preterm labor or delivery may have been caused by infection in the mother, immaturity-related respiratory distress cannot be readily distinguished from infectious pneumonia and under the assumption that antibiotic use is safe. However, antibiotic use is unnecessary and may result in more harm than good as it may lead to antibiotic resistance (4).

Breast milk, or human mother's milk, is a substance so potent and dense in nutrition that it must be given to all neonates (5). As such, breast milk must always be promoted. We must keep in mind that all preterm infants do not require the NICU, not all mothers of NICU infants are the same, not all human milk is the same, and the nutritional needs of the preterm infant are variable.

Precision nutrition can be utilized in the management of such neonates. Precision Nutrition (PN) is an approach to developing comprehensive and dynamic nutritional recommendations based on individual variables, including genetics, microbiome, metabolic profile, health status, physical

activity, dietary pattern, food environment, and socioeconomic and psychosocial characteristics (6).

In addition to maintaining nutrition, particularly gut nutrition, mother skin-to-skin care contributes to a distinct microbial pattern and accelerated oral microbial repertoire maturity (7).

What is of critical importance is to ensure that the preterm infant obtains enteral feeds with human milk and skin-to-skin care to promote the child's well-being?

In a country such as Sri Lanka, where the majority follows breast milk commencement in the golden hour, preterm infancy should not be excluded (8). Our first contact healthcare team must be actively engaged in preterm infant management with enteral nutrition and the environment of the infant in mind. Whilst this is by and large followed by most neonatal care centers, we must ensure that the healthcare team is aware that antibiotics, nil per oral, and withholding human milk is not in the best interest of the neonate.

Compiled by:

*Dr. Nimani de Lanerolle,
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MANAGING PAST CAESAREAN SECTIONS TO OPTIMISE PERINATAL OUTCOMES

Based on a Symposium I : Managing past Caesarean Sections to optimise perinatal outcomes at the 22nd Annual Academic Sessions of the Perinatal Society of Sri Lanka.

Panelists:

- *Dr. Chamila Ayyavoo, (India)*
- *Dr. Chandana Jayasundar (Consultant Obstetrician), De Soysa Hospital for Women*
- *Dr. U.D.P Ratnasiri (Consultant Obstetrician & Gynaecologist), Castle Street Hospital for Women*

1. Background

Globally, more than 1 in 5 (21%) of all deliveries currently take place via caesarean section. The so-called "caesarian on maternal request" and the non-medically indicated CS rates are both rising rapidly. Therefore, not all CS are being performed for medical reasons. These trends are projected to continue increasing over this current decade, where both unmet needs and overuse are expected to coexist with the projected global rate of 29% by 2030 (Angolile et al., 2023).

2. Immediate and late complications of caesarean section

Caesarean sections may be essential in situations such as prolonged or obstructed labour, foetal distress, or malpresentation. However, they can have risks, though, just like any surgery. These include the potential for heavy bleeding or infection, slower recovery times after childbirth, delays in establishing breastfeeding and skin-to-skin contact, and increased likelihood of complications in future pregnancies (WHO, 2021).

Injury to the uterine, urinary tract, and colon are among the intra-operative complications that can occur during a caesarean section, which increases the risks of this procedure (Stedman & Kline, 1988). Some major risks

associated with CS for the mother include infection, haemorrhages, thrombophlebitis, venous thromboembolism, and amniotic fluid embolism.

The rate of major transfusions following delivery is on the rise. Prior caesarean delivery was shown to be one of the key risk variables that were present prior to birth (OR 4; 95% CI 3.1-6.0), while primary caesarean delivery (OR 3) is one of the risk factors present at the time of delivery (Thurn et al., 2019).

Infants born through caesarean section have an increased risk of hypoglycemia, breastfeeding difficulties, and respiratory distress (Karlstrom et al., 2013). Emerging research suggests that CS exposes newborns to a variety of hormonal, physical, microbiological, and medicinal exposures that may subtly change neonatal physiology. Reduced intestinal gut microbiota variety, altered immunological development, and a higher risk of allergy, atopy, and asthma are some of the short-term hazards of CS. Although there is a regularly documented link between CS use and higher incidences of late childhood obesity and asthma, the persistence of these concerns into later life is less thoroughly researched (Sandall et Al., 2018). Many clinicians perform planned CSs before 39 weeks of gestation. Such planned early birth could increase the risk of respiratory problems and hypoglycemia.

The risks of severe maternal morbidity associated with planned caesarean delivery are greater than those associated with planned vaginal delivery, despite the fact that the absolute difference is minor. Women thinking about having an elective caesarean delivery, as well as their doctors, should weigh these risks. (Liu et al., 2007).

The incidence of placenta previa increases with each subsequent caesarean delivery, from 1% with one prior caesarean delivery to 3% with three or more prior caesarean deliveries. Morbidity also increases. After three caesarean deliveries, the risk that a placenta previa will be complicated by placenta accreta is nearly 40% (Silver et al., 2006).

Due to adhesions between the anterior lower uterine section and the anterior abdominal wall, the caesarian scar may result in technical limitations for pelvic ultrasound. The scar from the caesarean delivery makes the patient more prone to a variety of unusual conditions. A "niche" in a caesarean scar is a tethering of the endometrium that might act as a reservoir for intermenstrual blood and fluid. Endometrial implants may form in the abdominal wall years after surgery, and intrauterine devices may be improperly positioned in the scar after a caesarean delivery. Additionally, caesarean scar ectopic pregnancy, retained products of conception, and placenta accreta are among the implantation anomalies to which these patients are more susceptible (Rodgers et al., 2012).

A higher risk of bowel obstruction (OR 2.92; CI 2.55-3.34), bowel obstruction surgery (OR 2.12; CI 1.70-2.65), incisional hernia (OR 2.71; CI 2.46-3.00), incisional hernia surgery (OR 3.35; CI 2.68-4.18), and abdominal pain (OR 1.41; CI 1.38-1.44) is linked to caesarean sections. The risk for these problems increased dramatically with smoking, obesity, and deliveries via multiple sections (Larsson et al., 2021). Obese women who undergo Caesarean

sections are at higher risk for surgical wound complications, include haematomas, seromas, abscesses, dehiscence, and surgical site infections. (Słabuszewska et al., 2021).

There is no evidence that the risk of maternal or newborn morbidity or mortality has decreased as a result of CS, in addition to the numerous early and late consequences of the procedure. This raises serious concerns about the overuse of Caesarean sections.

3. Prevention of the burden of the primary section

The escalating global and Sri Lankan rates of Caesarean sections (LSCS), currently standing at around 40% in Sri Lanka, underscore a multifaceted issue. Contributing factors include increased use of intrapartum fetal monitoring, instances of labour induction failing progression, changes in obstetric training, legal ramifications shaping medical decisions, evolving societal expectations regarding childbirth outcomes, and an increased emphasis on maternal autonomy in decision-making. This surge in primary LSCS instances unavoidably engenders a parallel increase in repeat LSCS procedures. Regrettably, this gratuitous rise in Caesarean deliveries amplifies risks to both maternal and fetal well-being, including complications like abnormal placentation and obstetric haemorrhage. Furthermore, the strain on healthcare costs is undeniable. Addressing this trend necessitates a more balanced approach to childbirth that prioritises the health of mothers and infants while considering economic implications.

In addressing the high caesarean section rates in developing countries like Sri Lanka, implementing Robson's 10-group classification system has emerged as a promising strategy. However, the lack of information technology infrastructure in these regions has posed a significant challenge to effectively implementing and auditing this approach. A potential solution

lies in the form of a web app, Robsapp, developed by the university obstetric unit. Operating on smartphones and utilising a bring-your-own-device approach, this innovation holds the potential to streamline the classification process, significantly reducing the financial burden associated with implementing Robson's classification. Robsapp's versatility allows for a more targeted approach, enabling tailored solutions to address the specific factors contributing to high cesarean section rates in each category. Notably, a multi-centre study employing Robsapp has been completed, with findings set for publication shortly, promising insights and strategies to curb cesarean section rates and enhance maternal care effectively.

4. Why the fear of scar

The introduction of lower segment transverse incision for Caesarean section in 1926 has demonstrated a lower risk of uterine rupture compared to classical incision. The maternal mortality and morbidity historically linked to Caesarean section owing to sepsis and haemorrhage have decreased as a result of antibiotics and blood transfusions. Caesarean section rates have increased significantly as a result of this.

Following observational studies from the 1960s revealed that vaginal delivery was a reasonable option, giving birth after a Caesarean and had become a practice with little fear of rupture.

The benefits of vaginal delivery surpass those of caesarean delivery. However, in the past ten years, there have been fewer vaginal births following caesarean procedures due to concern over scar rupture. The fewest complications result from successful vaginal birth after caesarean delivery (VBAC). When a planned VBAC results in an emergency caesarean section, there is the greatest chance of unfavourable outcomes.

The probability of uterine rupture during spontaneous, planned VBAC is 1:200. With a VBAC, there is a very small (4:10,000) absolute risk of birth-related perinatal death, which is about the same as the probability of a nullip during labour. Although there is a slightly higher risk of neonatal respiratory morbidity before 39+0 weeks gestation, the risk of perinatal death with elective repeated caesarian section (ERCS) is also very low. The incidence of placenta praevia/accreta complicating subsequent pregnancies is slightly elevated in patients having ERCS. Future abdominal-pelvic surgeries could be complicated by pelvic adhesions. Absolute contraindications to vaginal birth are previous uterine rupture, previous classical caesarean section and major placenta praevia. Relative contraindications are previous T/J shaped incisions on the uterine angle extensions, significant uterine surgery, e.g., open myomectomy, previous B Lynch sutures, Multiple pregnancy, Breech presentation and Fetal macrosomia.

Symptoms and signs of scar dehiscence/rupture (NB scar dehiscence may be "silent") are persistent CTG abnormalities (the most frequent observation), Vaginal bleeding, Uterine scar tenderness, Pain between contractions, Cessation of contractions, Pain "breaking through" epidural analgesia or excessive epidural requirements, Maternal tachycardia, hypotension, shock, palpation of fetal parts outside the uterus and Haematuria.

Unfavourable maternal and perinatal outcomes of VBAC are linked to incorrect case selection, inadequate monitoring and intrapartum management of labour, a failure to recognise complications, hyperstimulation - improper use of oxytocics, and failure to intervene when it is required.

Conclusion

In conclusion, putting Robson's 10-group classification method into practice and encouraging vaginal birth after caesarean birth can help to reverse Sri Lanka's rising trend in caesarean sections. Further, to reduce caesarian sections performed at the mother's request, it is critical to teach parents about the risk of cesarean sections during the antenatal period.

Complied by

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OPTIMIZING INDUCTION OF LABOUR FOR BETTER NEONATAL OUTCOMES

Based on Symposium III: Optimizing induction of labour for better neonatal outcomes at the 22nd Annual Scientific Congress of the Perinatal Society of Sri Lanka.

Speakers:

- *Dr. Indunil Piyadigama (Consultant Obstetrician & Gynaecologist)*
- *Dr. Vijay Roach (Royal Australian and New Zealand College of Obstetrician & Gynaecologist)*
- *Prof. Mike Robson (Consultant Obstetrician), UK*

Induction of labour is artificially initiating the uterine contractions prior to the natural onset of labour using chemical or mechanical methods. The induction of labour (IOL) is usually recommended only if there is a medical indication after outweighing the risks and benefits for the fetus and the mother. As for all other medical interventions, IOL is associated with adverse clinical outcomes and IOL not only resulted in normal vaginal delivery but also ended up in instrumental deliveries and lower segment cesarian section (LSCS).

Sri Lanka is rated as the country having highest induction rate in Asia (35.5%) where 27.8% are without clear medical indication (Lazzerini *et al.*, 2018). One of the main reasons for this high rate is not having clear protocol and guideline developed based on evidence for Sri Lanka. One guideline was published in 2014 which is not practicing in routine clinical practice. Even though there are several guidelines at an international level there is no consensus in our setting to practice one guideline. World Health Organization (WHO), the National Institute for Health and Care Excellence (NICE), American College of Obstetricians and Gynaecologists (ACOG), the Society of Obstetricians and Gynaecologists of Canada (SOGC), the Federation of Obstetric and Gynaecological Societies of India (FOGSI) and Queensland Health are the most recent international guidelines widely followed in the world. Choice and the attitude of the

obstetrician and maternal knowledge and demand play major roles in decision making in the current situation in the country.

Having ultrasound scan within the first trimester to accurately date the pregnancy is essential to prevent unnecessary IOL due to wrong period of amenorrhea. Maternal counselling needs to be considered as a priority to minimize the number of unnecessary LSCS as most of the mothers' demand LSCS despite IOL (Piyadigama I.).

Higher perinatal morbidity and mortality are associated with postdate pregnancies. According to a systematic review done by Middleton *et al* in 2018 comparing 30 trials, IOL will reduce perinatal mortality if there are clear protocols for IOL and it will further decrease LSCS rate compared to waiting for normal vaginal delivery postdates. Reduction of intensive care admissions and improved APGAR score also evident in the study.

When developing a guideline, need to consider several factors. One main factor is the best time for IOL. There are new evidence suggesting induction as early as 37 weeks rather than waiting up to 41 weeks improve neonatal outcomes. (Middleton, Shepherd and Crowther, 2018)

There are pharmacological and non-pharmacological methods of induction. To decide on what method to be used, there

should be evidence of clinical effectiveness as well as cost effectiveness. Duration of hospital stay on different methods, and cost of the intervention need to be considered. Complication rates of different methods, and availability of monitoring facilities are other main factors that should be taken into account when developing a guideline and a protocol (Vijay Roach)

Lack of strong generated evidence on best time for IOL, and maternal and perinatal complications related IOL such as postpartum hemorrhage, length of hospital stay, birth trauma rates, impact on breast feeding, postpartum depression and child development are key challenges encountered in developing guidelines and promote evidence-based decision making.

Not only availability of guideline will regularize the process but need auditing

system and supervisions. If we develop standard protocol and a guideline for IOL, we will be able to use the guideline as a tool for clinical auditing which will promote rational decision making.

Following development of guideline need to consider capacity building of all categories of health staff to adapt the guidelines to the Sri Lankan context. Intrapartum monitoring of mother and fetal well-being and documentation, standard protocol to follow in management for different indications need to be considered. All the stakeholders should be involved in developing guidelines to reach consensus and to sustain the process.

Compiled by

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FAMILY CENTERED CARE OF A SICK NEWBORN

Based on Symposium IV: Family centered care of a sick newborn at the 22nd Annual Scientific Congress of the Perinatal Society of Sri Lanka.

Speakers:

- *Dr. Sathika Amarasekara (Acting Consultant Neonatologist, Ministry of Health)*
- *Dr. Sandya Doluweera (Consultant Paediatrician), Castle Street Hospital for Women*
- *Dr. Nimesha Gamhewage (Consultant Neonatologist & Senior Lecturer, University of Sri Jayewardenepura)*

The Annual Conference of the Perinatal Society of Sri Lanka -2023, played a vital role in advancing knowledge and best practices, fostering collaboration among healthcare professionals, ultimately contributing to improved health outcomes for newborns and maternal care in the country and region. Among the many areas discussed at the forum, family-centered care of a sick newborn was discussed in a symposium to bring about how it is crucial as it promotes emotional support and active involvement of parents, leading to better outcomes and a more positive healthcare experience for the newborn and family. This symposium was conducted by a group of experts in newborn care, including neonatologists and paediatricians.

Family-centered care is an approach to healthcare that recognizes the family as an integral part of a child's care team and involves them in decision-making and the overall care process. It was discussed how for successful implementation of the Family-centered care, three key areas were to be considered, namely; Parental support, Staff support, and Adaptive NICU policies.

It was highlighted how parents should be supported to engage in developmentally appropriate care by ensuring consistency of their presence for their baby whenever possible, supporting to understand the behavioural communication of their baby to respond to the baby's needs, providing supportive handling for their baby,

collaborating with NICU staff to minimise their baby's stress and pain, and optimising their baby's nutrition with breastmilk and breastfeeding whenever possible.

The aspect of supporting staff in the delivery of family-centered care for sick newborns was shown to be vital to ensure the well-being of both the healthcare providers and the families they serve. An appropriate and pleasant reception for families should be partnered with the admission of each baby to NICU including introductory messages to parents in primary language, providing knowledge on hand hygiene technique, and providing unlimited information and access to the baby. Staff should be educated on principles of implementing FCC and proper, personalised, and understandable communication should be maintained within parents and staff for better implementation.

Discussing on NICU policies, they were to be reoriented in a way that parents were part of the team and not as visitors, clear policies on the family support system, and how these support measures should be started whenever maternal or foetal conditions and diagnoses were identified which could lead to an NICU stay. Also, that palliative care policy, discharge planning, and quality improvement measures should be included in the policy.

As the next component of the symposium, Kangaroo Mother Care (KMC) was

discussed and how it provides great benefits to babies, mothers, and other family members. Low awareness of KMC, issues with the environment, and fear of hurting the infant were identified as some of the barriers. It was explored how KMC can be implemented through increasing maternal awareness during antenatal and postnatal period through IEC materials, providing a supportive environment, emotional support, and improving workplace culture through using technology, clear guidelines, and proper communication and how proper followup at the community level was essential. Policy makers were urged to focus on healthcare service quality improvement, sustainable measures, and good leadership and governance.

The final topic in the symposium was handing over the care back to the community. Where the experts exchange views on how shared care for newborns involves a collaborative approach between healthcare providers in both the hospital and community settings to ensure comprehensive and seamless care for newborns and their families and how this approach aims to transition newborns from the hospital to home while maintaining continuity of care. It was further discussed how this is a more patient centered concept with more accessibility, how it will help economically by reducing the resources utilized in the hospital, and how well developed public health system in Sri Lanka with trained grass root level staff and well organized domiciliary care system will ensure the early detection of failure to thrive, developmental disorders, and other new concerns. It was also highlighted that ensuring the partnership with the public and curative health sector, proper followup, and training of staff will help to improve the shared care while managing the baby in the community.

This symposium, among others, served as a platform for the exchange of cutting-edge research and expertise, driving advancements in perinatal and maternal healthcare.

Compiled by

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GOVERNANCE, QUALITY OF CARE, AND PARENTAL UNDERSTANDING IN SRI LANKA

Based on Interactive Session: Governance, Quality of Care, and Parental Understanding at the 22nd Annual Scientific Congress of the Perinatal Society of Sri Lanka.

Panelists:

- *Dr. Amit Gupta (Consultant Neonatologist, John Radcliffe Hospital, Oxford, UK)*
- *Dr. Micky Chopra (UK)*
- *Surender Bisht (India)*
- *Dr. Deepika Atygalle (Senior Health Specialist, World Bank, Colombo)*
- *Dr. Susie Perera (Consultant Community Physician)*
- *Dr. Surantha Perera (Consultant Paediatrician, Base Hospital, Panadura)*

Introduction:

Sri Lanka's healthcare system has made significant progress over the years, but there remain critical challenges in terms of governance, the quality of care, and parental understanding, especially in the context of perinatal health. This has specially been important given the current socio-economic situation in Sri Lanka. To address these challenges and improve healthcare outcomes for the people of Sri Lanka many proactive steps will need to be taken in a timely manner.

Identified Problems

1. **Lack of Accountability:** While the health sector is undergoing many crises simultaneously, the lack of accountability has hampered attempts to deal with issues in a concrete manner.
2. **Failing to address health sector issues using an evidence-based approach:** Many health sector issues can be anticipated or solved by approaching it in an evidence-based manner using a data driven approach.
3. **Lack of Community Involvement:** An unenthusiastic community involvement

on health issues due to many reasons is impeding the resolution of these issues.

4. **Over-reliance on Incentives:** People have a general tendency to be over-reliant on temporary incentives for quality of life improvement purposes which negate their long term benefits.

Proposed solutions

1. **Enhancing Accountability:** Implement accountability measures at all levels in the healthcare system to ensure quality healthcare services.
2. **Utilizing Big Data for Projections and Planning:** Use data-driven insights for long-term planning, resource allocation, and effective healthcare delivery and dissemination of such data for use by all health care professionals
3. **Community Involvement at All Stages:** Promote community involvement from problem identification to research, program implementation, and monitoring and evaluation and establish community health committees and

engage local leaders to facilitate participation.

4. **Advanced Crisis Planning:**

Anticipate and plan for possible crises that can happen given Sri Lanka's current situation.

5. **Empowerment-Oriented Approach:**

Promote empowerment-oriented approaches rather than incentives-oriented approaches.

6. **Evaluation of 'Palak Melawa' Concept:**

Evaluate the suitability of the 'Palak Melawa' or 'Parent Fair' concept in the Sri Lankan healthcare context and Pilot the concept in select regions and gather feedback to determine its effectiveness and potential for scale-up.

Conclusion

Improving governance, the quality of care, and parental understanding in Sri Lanka's healthcare system is essential for achieving better perinatal health outcomes. By addressing these issues and promoting community involvement, data-driven planning, crisis preparedness, and empowerment, Sri Lanka can pave the way for a more inclusive and resilient healthcare system that serves the needs of its citizens effectively.

Compiled by

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MATERNAL WEIGHT GAIN AND ITS IMPLICATIONS FOR LBW REDUCTION

Based on Plenary Symposium: Maternal Weight Gain and its Implications for LBW reduction at the 22nd Annual Scientific Congress of the Perinatal Society of Sri Lanka

Speakers:

- *Prof. Athula Kaluarachchi (Professor of Obstetrics & Gynaecology & Consultant Obstetrician & Gynaecologist, University of Colombo)*
- *Prof. Sachith Mettananda (Professor of Paediatrics & Consultant Paediatrician, University of Kelaniya)*
- *Dr. Uditha Bulugahapitiya (Endocrinologist; Diabetologist)*

Maintaining appropriate maternal weight gain during pregnancy is of utmost importance due to its double-edged adverse effects on maternal and fetal wellbeing. This fact was acknowledged during the annual academic sessions of the Sri Lanka Perinatal Society, and a symposium titled “Maternal weight gain and its implications for LBW reduction”.

Insufficient Maternal weight gain during pregnancy can result in Low Birth Weight (LBW) in the newborn; and LBW in turn is associated with a myriad of short- and long-term complications. Few of the short-term effects include increased risk of hypoxia and respiratory distress at birth, jaundice and infections, while new evidence has shed light on its long-term effects such as delayed motor and social development, and increased susceptibility to chronic non-communicable diseases such as obesity, high blood pressure and diabetes in later life.

Excessive maternal weight gain during pregnancy on the other hand adversely affects maternal health overtime. Inability to lose the weight gained with each pregnancy will accumulate over time, leading to increased prevalence of overweight and obese conditions among women in the reproductive age group. Overweight and obesity renders these women vulnerable to complications during subsequent pregnancies, as well as increase their

likelihood of developing chronic non-communicable disease states.

Therefore, maintaining GWG within recommended amounts is vital to the health and wellbeing of both the mother and the baby. Despite its extremely sensitive nature, the importance of appropriate GWG has not been given due recognition. Most countries including Sri Lanka and even the World Health Organization currently refer to the Institute of Medicine’s guidelines on weight gain during pregnancy (IOM, 2009). The World Health Organization has commenced a project in 2023 to develop guidelines on weight gain during pregnancy which are expected to be formulated by 2025.

Problems identified:

1. **Monitoring gestational weight gain and providing appropriate care services is not prioritized within the healthcare system.**

Sri Lanka is equipped with a comprehensive antenatal care package which includes regular monitoring of gestational weight gain. However, at present it is merely limited to routine weight monitoring and recording, with minimal attempts at its interpretation. Maternal weight is measured at MOH field clinics and recorded on pregnancy records. Although the pregnancy record

is equipped with a chart to monitor weight gain during pregnancy, this is rarely utilized by the staff. Furthermore, there appears to be a service delivery gap in actively monitoring women who are susceptible to inadequate/ excessive GWG.

2. **Lack of guidelines and referral pathways for women with inadequate/excessive gestational weight gain**
Even though general guidelines exist for the care of malnourished pregnant women, there exists a need to formulate a set of guidelines that provide specific instructions on identifying, referring and managing a pregnant lady with inadequate or excessive weight gain.
3. **Lack of awareness among healthcare staff on the implications of excessive maternal weight gain.**
Healthcare staff in general may tend to place greater importance on inadequate maternal weight gain when compared to excessive weight gain, possibly due to the effect of inadequate weight gain on the fetus. One reason for excessive maternal weight gain to be given less importance could be attributed to lack of awareness among healthcare staff, as its effects are longterm.
4. **Cultural beliefs that can contribute to excessive maternal weight gain.**
Lack of awareness among pregnant women on the amount of weight that should be gained during pregnancy is another major problem that was identified. This coupled with various socio-cultural beliefs on how a pregnant lady should 'eat for two people' is likely to result in GWG that exceed recommendations.
5. **Lack of research surrounding Gestational Weight Gain**
Despite the large research interest in LBW in Sri Lanka, studies on gestational weight gain, either as standalone studies or as studies that assess the effect of GWG on birthweight, are limited.

Solutions:

1. **Empowering active weight monitoring in pregnant women by healthcare providers**
Empowering routine monitoring of weight of pregnant women at all contact points with the healthcare system, including but not limited to: MOH field clinics, government hospital obstetric clinics and the private sector, Empowering healthcare providers to mark recorded weights on the weight gain monitoring chart available in the pregnancy record (H-512) to allow easy interpretation of weight gain, Establishing guidelines which include care pathways on when, how and where to refer pregnant women with inadequate/excessive gestational weight gain patterns and Training of ground level healthcare staff to identify pregnant women with inadequate/ excessive GWG
2. **Increasing knowledge on maternal weight gain among healthcare workers**
Conduction of awareness sessions to healthcare staff at district and ground level on the importance of appropriate GWG, ensuring that maternal weight gain is discussed during the in-service trainings at MOH level at least once a year, Presenting data on maternal weight gain (as inadequate, adequate or excessive) by each PHM at the MOH monthly conference and Incorporating the importance of maintaining appropriate GWG to the curricula of Public Health Midwife, Public Health Nursing Officer and Public Health Nursing Sister training programs
3. **Increasing knowledge of pregnant women on weight gain during pregnancy**
Ensuring that gestational weight gain is discussed with pregnant women during the first trimester antenatal counselling session, developing an information

pamphlet on the importance of appropriate GWG which can be given to pregnant women at the booking visit. The pamphlet can be used as a means of:

- Increasing women's awareness on the recommended amount of weight gain based on her BMI
- Increasing women's awareness on the adverse effects of inadequate and excessive GWG
- Empowering pregnant women to routinely measure their weight (either at home, or at any point-of-contact with a healthcare provider where a weighing scale is available)
- Advising women on how they can achieve appropriate weight gain
- Addressing common myths and socio-cultural beliefs surrounding eating during pregnancy

4. **Conducting research on gestational weight gain and its implications of Low Birth Weight**

Research on the GWG patterns in women and assessing its associated with fetal birth weight will invariably shed light on further solutions.

Conclusion

It has been shown that excessive GWG is a significant contributor to overweight and obesity in women in later life, while inadequate GWG is a major contributor to Low Birth Weight in newborns, with almost 50% of its women being overweight/obese, and about 15% of its newborns having Low Birth Weight, Sri Lanka needs to act promptly to combat this double burden and Striving for GWG within the recommended amounts may be the key towards addressing both these problems.

Compiled by

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FOCUSING ON PARENT CRAFTING IN SRI LANKA

Based on Symposium V: Advocacy Brief Focusing on parent crafting in Sri Lanka at the 22nd Annual Scientific Congress of the Perinatal Society of Sri Lanka.

Speakers:

- *Dr. Mohamed Rishard (Obstetrician & Gynaecologist, De Soysa Hospital for Women)*
- *Dr. Surender Bisht, India*
- *Dr. Prabath Randoombage (Consultant Obstetrician & Gynaecologist)*
- *Dr. Amila Chandrasiri (Consultant Community Physician)*

Introduction Parenting skills encompass a range of knowledge, behaviors, and attitudes that equip parents to provide nurturing, loving, and supportive care to their children. These skills form the foundation for healthy child development and well-being. Sri Lanka recognizes the vital role of parenting in shaping the future of its children and the nation as a whole. Effective parenting skills and support during the antenatal period are essential components of fostering healthier, happier families. Our aims are to emphasize the importance of developing parenting skills during the antenatal period, the benefits of reflective practices in parenting training, and the need for comprehensive reforms in Sri Lanka's approach to parenting education and support. The pioneering efforts of Dr. L.A.W. Sirisena in introducing parent crafting classes in 1996 at Castle Street Hospital for Women marked a significant milestone in promoting parenting skills in Sri Lanka. Since 2006, the Family Health Bureau has initiated antenatal education and parent craft

Challenges

Limited Parental Preparedness- Many parents lack the necessary knowledge and skills to navigate the challenges of parenthood, often resulting in anxiety and stress during pregnancy, childbirth, and then raising the children.

Insufficient Antenatal Education -Antenatal classes address waste areas of pregnancy and childbirth-related topics but often fall short in addressing crucial topics, leaving parents without comprehensive guidance on pregnancy stages, fetal development, partner involvement, cultural appropriateness, women's rights, and the importance of feedback and follow-up.

Varied Parental Backgrounds-Parents come from diverse cultural, ethnic, and socioeconomic backgrounds therefore, resources and strategies may not be compatible with every individual. Tailoring support to meet these diverse needs is a significant challenge

Benefits

Empowered Parents -When parents are empowered with essential skills, it means they have the knowledge and abilities they need to care for their children effectively. This includes understanding how to provide love, support, and nurturing care. When parents are equipped with these skills, they are better prepared to create a positive and loving environment for their children. This, in turn, helps in building healthier families and communities because children who receive nurturing and supportive care tend to grow up with a stronger sense of emotional well-being and are more likely to contribute positively to their communities.

Improved Child Well-being- Effective parenting plays a crucial role in a child's overall well-being. When parents understand how to support their child's emotional and cognitive development, they can help boost their child's self-esteem and encourage positive behavior. Additionally, proper nutritional care is vital for a child's physical health and growth. All of these factors contribute to a child's overall health and well-being. When children grow up with a strong sense of self-esteem, good behavior, and physical health, they are better equipped to become responsible citizens. This, in turn, has a positive impact on the progress and development of the nation as a whole.

Holistic Development- Providing comprehensive support to parents during the antenatal period is crucial for parents. When expectant parents receive guidance and support, they are better prepared for the responsibilities of parenthood. This preparation can lead to healthier pregnancies, safer childbirth experiences, and better postnatal care. As a result, parents are more likely to raise children in a nurturing and supportive environment. This holistic approach to parenting not only benefits the immediate family but also has a positive impact on the nation's future. Children raised in such environments tend to grow up with a strong foundation for success and responsible citizenship, contributing positively to the nation's progress.

Recommendations

Enhance Antenatal Education- Antenatal education plays a major role in improving parental education and preparing them for better parenthood. About 40% of the participants in a study considered that accepted that antenatal education shapes their parenthood (Fabian, Rådestad and Waldenström, 2005). Therefore, Addressing the existing gaps in antenatal classes by explaining concepts such as pregnancy stages, fetal development, partner involvement, cultural appropriateness, and

women's rights will lead to better parenting through antenatal sessions. And also needs to promote a feedback mechanism and develop follow-up strategies to continuously improve the quality of antenatal care

Diverse Resources and Strategies- Utilizing multimedia resources such as videos, interactive apps, and online courses, to provide parents with engaging and appropriate content and population-based dissemination through mass media channels to reach a broad audience attention. Furthermore, it can incorporate parenting education into routine healthcare services such as routine antenatal classes. In addition to that foster family and group-based sessions will promote peer learning and support and can enhance digital outreach through websites, mobile apps, webinars, and virtual support groups as Adult educational techniques that are participatory and experiential in nature (Entsieh et al., 2016).

Reflective Writing for PHMs - Promote reflective writing among Public Health Midwives (PHMs) to enhance their parenting training skills to improve service delivery on parenting training skills. It will facilitate selfevaluation, experiential learning, empathy, and identification of areas for improvement. Therefore, the government can integrate reflective writing skills into PHM training and conduct some professional development programs to improve that skill among them. Also, it is important to facilitate peer support and feedback sessions to enrich the learning experience.

Workshops for Parental Empowerment - Implementing workshops that empower parents can lead to enhanced parenting skills. Such workshops can reduce the rate of cesarean sections, promote vaginal delivery, and enhance maternal and child bonding (Chen and Tan, 2019) and also cost saving by reducing LSCS according to the economic analysis (Sarmiento et al., 2023).

Conclusion

Empowering parents through careful antenatal education and reflective behaviors is more than just a personal development opportunity; but also, a path to a brighter future for Sri Lanka. By addressing the problems, embracing the benefits, and putting our suggestions into action, we can ensure that every parent in Sri Lanka has the knowledge, skills, and support they need to give their children the best possible start in life. We build stronger families and a stronger Sri Lanka by working together.

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DIGITAL TRANSFORMATION AND PATIENT EMPOWERMENT IN PERINATAL CARE

Based on Symposium IV: Digital transformation and patient empowerment in perinatal care at the 22nd Annual Scientific Congress of the Perinatal Society of Sri Lanka.

Speakers:

- *Dr. Pandula Siribaddana (Senior Lecturer in Medical Education, Post Graduate Institute, Colombo)*
- *Dr. Kaushalya Kasturiaratchi (Consultant Community Physician, Family Health Bureau, Ministry of Health)*
- *Dr. Surantha Perera (Consultant Paeditricians, Base Hospital, Panadura)*

Nowadays, the delivery of health and healthcare across the globe is being revolutionized by artificial intelligence (AI) and digital health care, which includes a number of smart technologies. Telemedicine, remote tools, sensors and other smart technologies supported by big data might lower healthcare costs and significantly increase access, outcomes, and efficiency(1). However, nearly one third of the world's population does not have access to the internet and new technology, this will remain as a challenge for many countries in the world and Sri Lanka is no exception(2). Sri Lanka is considered as a low- middle income country, although it has well developed health care system. However, with economic instability and lack of resources, accessing AI and digital health care in health system of the country is questionable.

According to literature, a wave of health data and digital technologies, including telemedicine and AI, are eradicating long-held beliefs about global health and the availability and accessibility of healthcare(3). As a result, this idea was chosen as a focal point for World Health Day in 2023, with the goal of focusing on how precisely these creative improvements may be incorporated into the future healthcare system to improve access and benefit everyone(4).

New treatments, better patient outcomes, better and earlier diagnostics and prevention, earlier treatment, and improvements in the quality and efficiency of healthcare delivery as well as effective surveillance are just a few of the positive changes that health-focused technologies have the potential to make. By lowering overall healthcare spending and increasing efficiency, AI and digital health technologies can help to close the healthcare financing gap. Literature suggests that telemedicine, remote patient diagnosis, and treatment via telecommunications systems could ease the burden of patient care(5, 6). This is further proven by many countries in recent COVID 19 pandemic, as health needs and care were well managed by them through digital health technologies successfully all over the world(6,7). Therefore, advancements in healthcare through digital and AI enabled approaches for prevention, monitoring, consultation and treatment. It could dramatically boost healthcare access for individuals around the world with lowering healthcare costs. Further it will be beneficial in situations like disasters, pandemics and even in economic crisis for better provision of healthcare.

With the recent introduction of generative AI platforms like ChatGPT and Med-PaLM, the use of digital health technology is evolving quickly. However, use of AI and

digital health technologies in health care is having reasonable concerns. Availability of adequate underlying infrastructure including internet connectivity, human resources and digital technology devices will be the major challenge in proceeding with this new concept. Apart from that ethical concerns related to data sharing, confidentiality and data security will be required to handle carefully. Hence, a national policy on technical innovation for health care will be required to address these major concerns in a country.

With this back ground, possibility of going forward with AI and digital health for health care in Sri Lanka is doubtful. Although, Sri Lanka has well developed health care delivery system, it runs with limited resources. As country facing in an economic crisis, spending money for provision of infrastructure and human resource development to incorporate this new concept of AI and digital health will be a challenge. However, as this new concept will reduce healthcare cost, it has a direct benefit to the country. Data gathering and surveillance systems can be well improved with this technology enabling Family Health Bureau, Epidemiology unit and medical statistic units to do their work more efficiently. Although Sri Lanka, is a small island, still people in some parts of the country do not have easy access for health care. By incorporating this new concept, those people will get benefited and further it will reduce out of pocket expenditure for them. Public health staff as well as hospital staffs will motivate to their work efficiently with this new concept by minimizing work overload at fields, out patients' department and even in ward setup. With this background, although incorporating AI and digital healthcare is a challenge, it is worthwhile to consider its incorporation into health care delivery system of the country.

How a country can face the challenges in incorporation of AI and digital health care into health system? A thorough action plan

with short-, medium-, and long-term objectives is needed to address the role that digital technology can play in enhancing access to and provision of healthcare. As supply chains and healthcare delivery are optimized, immediate action is required to encourage investment that fuels innovation in medication and treatment development. In the future, healthcare sector will need to standardize data utilization and applications to make various healthcare tools and systems work together. Longer term, the medical community must collaborate with decision-makers to develop a regulatory framework that encourages innovation across the board in the world healthcare system. Multi-sectoral alliances, such as those between providers of digital solutions, decision-makers, and interested parties like the civic sector and philanthropy, can aid in the rapid deployment of digital solutions at scale. Big data models, telemedicine, predictive medicine, wearable sensors, and a plethora of new platforms and apps may help to rethink how the world offers, maintains, and accesses health and healthcare in the future. For those with and without internet connections, a perfect storm of funding, innovation, and legislation is necessary to enhance access to high-quality healthcare globally. Hence, it would not be a dream for a new era of digital healthcare to Sri Lanka.

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BRIDGING GAPS IN DISABILITY IN PREGNANCY

Based on Symposium VII: Bridging Gaps in Disability in Pregnancy at the 22nd Annual Scientific Congress of the Perinatal Society of Sri Lanka.

Speakers:

- *Ms. Niluka Gunawardana (Lecturer/Disability Specialist, University of Kelaniya)*
- *Dr. Dilini Vipulaguna (Consultant Community Paediatrician)*
- *Ms. Bernadette Muyomi (Disability and Inclusion Specialist)*
- *Dr. Lahiru Perera (Humanitarian Project Manager UNFPA Sri Lanka)*

Overview

Individuals with disabilities have greater healthcare requirements, encompassing both general and disability-related needs. In Sri Lanka, women living with disabilities receive basic healthcare services, which is also common to normal individuals without any disability and lack access to specialized healthcare compatible with their diverse needs. Sametime, sexual and reproductive health (SRH) services are not easily accessible to women and young people with disabilities. Additionally, women and young people with disabilities may encounter financial, social, and psychological obstacles when attempting to access adequate SRH services.

Pregnant women with disabilities face various disparities such as physical inaccessibility, insufficient availability of appropriate medical equipment, and inadequate knowledge among healthcare providers on providing disability-inclusive care. Research has indicated that pregnant women with a disability have a higher risk of adverse maternal outcomes including complications during pregnancy and childbirth. Research conducted in other countries has revealed an elevated rate of abortions, miscarriage, cesarean section deliveries, and low contraceptive prevalence among disabled women. Discrimination and stigmatization due to the poor attitude of healthcare providers can further deteriorate

access to quality healthcare services by pregnant women with disabilities.

Pregnant women with sensory impairment or intellectual disabilities face more communication barriers within healthcare settings due to inadequate access to information and, a lack of facilities for sign language interpreting.

Numerous international human rights instruments, such as the United Nations Convention on the Rights of Persons with Disabilities (CRPD), stress the right of individuals with disabilities to access healthcare on equal terms with others. National policy on disability highlights the importance of improving the accessibility of disabled people to healthcare services.

Objectives:

To understand the associated factors that prevent the implementation of responsive care for pregnant women with disabilities and also to integrate responsive care for pregnant women with disabilities into routine antenatal care services

Methodology

Awareness was been conducted in the Annual Academic Sessions of the Perinatal Society of Sri Lanka on the 6th of September 2023. Around 250 healthcare professionals have participated encompassing curative and preventive sectors, global policy specialists, influential decisionmakers, and academics.

Key factors identified

Poor access to routine healthcare services for pregnant women with disabilities, only addressing physical accessibility but not social inclusivity with stigmatization and discrimination within the health system, Unavailability of a mechanism for cooperation and integration of the maternal care package with suites and cater the pregnant mothers with disabilities, Poorly activated policies and the unavailability of legal frameworks exist to protect the rights of disabled pregnant women in accessing healthcare.

Inadequate expertise and competencies among healthcare professionals and relevant stakeholders when it comes to delivering holistic and inclusive sexual and reproductive health services for pregnant women and young females with disabilities, Extended family support due to the cultural values in our society was a protective factor in terms of mothers with disabilities though due to the changes in the sociodemographic in the country, the situation in the current context is different and with the sudden changes in the environment including climate change as well as disasters, for women with disabilities in refugee camps adherence to the same routine services would be nonbeneficial to the pregnancies with disabilities.

Recommendations

Ensure that pregnant women with disabilities have access to routine healthcare services, addressing not only physical accessibility but also social inclusivity, free from stigma and discrimination, the importance of cooperation and integration of the maternal care package with suites and cater the mothers with disabilities and activate the policies and establishment of legal frameworks that exist to protect the rights of disabled pregnant women in accessing healthcare.

Empower healthcare professionals and relevant stakeholders to expand their capacities in delivering comprehensive and inclusive sexual and reproductive health services for pregnant women and young females with disabilities, Enhance the capacity of family members and the community to offer adequate physical and emotional support for pregnant mothers with disabilities, the collaboration of healthcare providers, disability organizations, policymakers, and advocacy groups to overcome the challenges encountered by pregnant women with disabilities and advocacy endeavors to raise awareness, shape policy reforms, and allocate resources to enhance healthcare services that are inclusive of individuals with disabilities.

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Editorial Comment –

The Editors wish to note that in the instances where personal views have been expressed in these symposia, those are personal to the presenters and do not reflect any affiliation to any organization or government.

