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Editorial

Media ethics in covering health issues in the current crisis

Sri Lanka is in the midst of the worst socio-economic crisis in its post-independent history, and the once robust healthcare system is nearing collapse, with patients at risk from a lack of medicines, devices, and equipment. Importation of the above items depends on foreign currency and depleted reserves in the treasury make things worse. It critically undermines sexual and reproductive health services, including maternal health care and access to contraception, and care of newborns.

Donor agencies, health care professionals, and print and electronic media widely use sensitive information such as pictures and videos to raise funds and win the sympathy of the public and draw their attention. With the recently approved laws, the public has the right to know and can seek information.

In this context, it is important to balance the public's need for information against potential harm or discomfort. Pursuit of the news is not a license for arrogance or undue intrusiveness.

Demonstrating compassion for those who may be affected by news coverage and maintaining heightened sensitivity when dealing with children or adolescents, mothers, survivors of gender-based violence, and other vulnerable groups is expected from journalists.

Reporting on newborns, children and young people have its special challenges. In some instances, the act of reporting on children places them or other children at risk of retribution or stigmatization. Having a better understanding of media ethics will help journalists to serve the public interest without compromising the rights of children.

Leading professional groups should address the current concerns in media reporting in a series of meetings with journalists and directors of media institutes. If they can develop guidance of media ethics with the help of experts in bioethics and it would be the best outcome expected.

The dignity and rights of every child are to be respected in every circumstance. In interviewing and reporting on children, special attention is needed to ensure each child's right to privacy and confidentiality, to have their opinions heard, to participate in decisions affecting them, and to be protected from harm and retribution.

The best interests of each child are to be protected over any other consideration, including advocacy for children's issues and the promotion of child rights. When trying to determine the best interests of a child, the child's right to have their views taken into account is to be given due weight in accordance with their age and maturity.

Those closest to the child's situation and best able to assess it are to be consulted about the political, social, and cultural ramifications of any reportage. Do not publish a story or an image that might put the child, siblings, or peers at risk even when identities are changed, obscured, or not used.

All efforts should be made to photograph or film children in an age-appropriate and culturally sensitive manner. The best interest of the child must always be paramount, including advocacy for children's issues and the promotion of child rights. Before photographing or filming a child below the legal age of consent, written or videotaped verbal consent should be obtained from the parent or guardian.

Attention should be paid to where and how children are photographed or filmed. They should always be adequately clothed and not indecently exposed. Care should be taken to ensure children's comfort and consider the effects of surroundings on the child during the photographing or filming.

Dr. Surantha Perera
Managing Editor

Prof Indrajee Amarasinghe Oration 2022

Rising caesarean section rates – A global crisis: What can we do?

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Globally there is an increasing trend in CS deliveries without benefits of reduction of Maternal and Perinatal Morbidity and Mortality. Too many CSs are done too early resulting in increased morbidity and mortality. Too little CS are done too late where it is needed with resultant morbidity and mortality. Need to reverse the rising trend of CS and the phenomenon of 'too many too early' and too little too late' – Can we do it by Essential Intrapartum Care Package'. Globally CS crisis is due to its increasing incidence and consequent immediate and long term morbidity. It is a dire need to optimize CS rates to benefit mother and new born.

Considering Global and regional trends in CS rates from 1990 to 2014, there is an increase in trends in countries like Latin America and the Caribbean, North America, Africa and also in Asian countries. The world total remains to be static since 2010 with an initial rise in CS rates. (Figure 1)

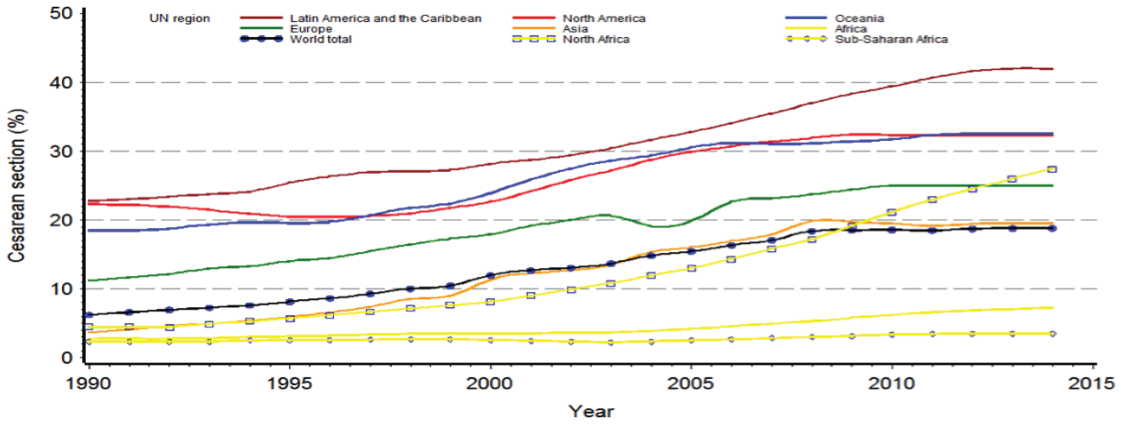

Figure 1

According to the WHO, the Caesarean rate ranges between 1% and 58% worldwide. The proportion is very low (below 5%) in 28 countries, of which, three-quarters are in sub-Saharan Africa. The lowest rates are observed in Niger, Chad, Ethiopia, Madagascar, and Timor-Leste (below 2%). Large developing countries where rates are low include Mali (2%), Nigeria (3%), Afghanistan (3%), and Congo (5%). Caesarean rates increase gradually with the level of development, and more than 100 countries are above the 15% maximum recommended by the WHO, 43 even have levels exceeding 30%. Many European countries such as Cyprus (57%), Georgia (41%), Romania (40%), and Italy (35%). The Dominican Republic tops the list with 58%, followed by Brazil (55%), Chile (50%), and Ecuador (49%), among others.

High levels seen in countries of the Middle East (Turkey, Lebanon, and Iran, with 46%–48%) and East Asia, such as South Korea (39%) and China (35%)[1].

The rate of CS in Bhutan was 18.7%. In Bhutan, CS was commonly performed for mothers with previous CS, fetal distress, and prolonged labour. Increasing maternal age, multiple pregnancy, and post-dated pregnancy and those with one child, or none, were more likely to undergo CS. To reduce the

CS rate, Bhutan should focus on decreasing the primary CS rate as well as preventing over-diagnosis of prolonged labour by focusing on the partograph [2].

For the period 2015–2019, the average national rate of caesarean section was 20.1% with a statistically significant increase from 18.1 to 21.5%. The average rate at the six obstetric centres was 29.9% with Phuentsholing Hospital (37.2%), Eastern Regional Referral Hospital (34.2%) and Samtse General Hospital (32.0%) reporting rates higher than that of the National Referral Hospital (28.1%). The common indications were 'past caesarean section' (27.5%), foetal distress and non-reassuring cardiotocograph (14.3%), failed progress of labour (13.2%), cephalo-pelvic disproportion or shoulder dystocia (12.0%), and malpresentation including breech (8.8%).[3]

Considering CS rates in India, 17.2% are by Ceaserean deliveries as a whole. In some regions in India such as Jammu, Kashmir, Tamil Nadu and Kerala CS rates are more than 30%. [4] In Nepal CS rate shows an increasing trend from 2001 to 2016.
(Figure 2)

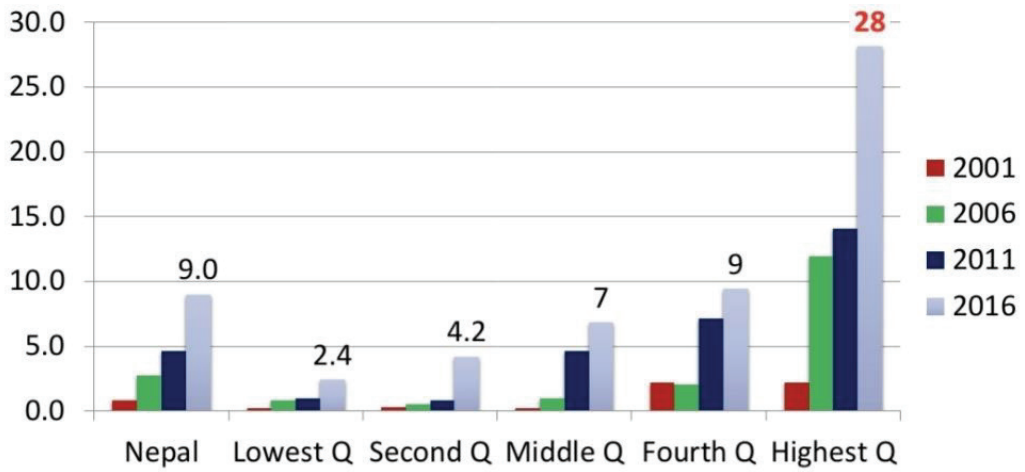

Figure 2

According to Robson's group Description in Nepal CS rate was higher in all multiparous and nulliparous women with previous uterine scar. Even women who are multiparous or nulliparous with a gestation of more than 37 weeks have an increase CS rate. (**Table 1)**

Grp	Robson Group Description	Nepal C-Section rate (%)	WHO Global reference rate (%)	Relative size of grp (%)
1	Nulliparous women, single cephalic, ≥ 37 wk, spontaneous labour	15.1	9.8	39.2
2	Nulliparous women, , single cephalic, ≥ 37 wk, induced labour or CS before labour	67.9	39.9	9.5
3	Multiparous women, , single cephalic, ≥ 37 wk, spontaneous labour	7.7	3.0	27.3
4	Multiparous women, , single cephalic, ≥ 37 wk, induced labour or CS before labour	54.7	23.7	4.5
5	All multiparous women, , single cephalic, ≥ 37 wk, **previous uterine scar**	84.8	74.4	5.9
6	Nulliparous women, single breech	80.3	78.5	1.4
7	Multiparous women, single breech, previous uterine scars	78.1	73.8	1
8	All multiple pregnancies	52.3	57.7	0.8
9	All women, single transverse or oblique lie	73.9	86.6	0.4
10	All women, single cephalic <37 weeks' gestation	21.5	25.1	10.2

Table 1: CS rates as per Robson's groups

According to the Pakistan Demographic & Health Survey (DHS), the trend in the CS rate is mirroring the global scenario. The rate increased from 14% in 2012 to 22% in 2018. Higher rates are reported in private than public (38% and 25% respectively) facilities. A greater likelihood of having a CS is reported among the richest, more highly educated, and urban-living women[5].

In Sri Lanka CS rates from 2015 to 2021 has increased from 33.8% to 43.1% according to family health bureau data (Figure 3). Data gathered from Castle Street Hospital for Women Colombo Sri Lanka shows that there is a trend in increasing CS rates but maintaining at a rate around 30 to 40% with a NVD rate maintained at a rate of 60 to 70%. (Figure 4)

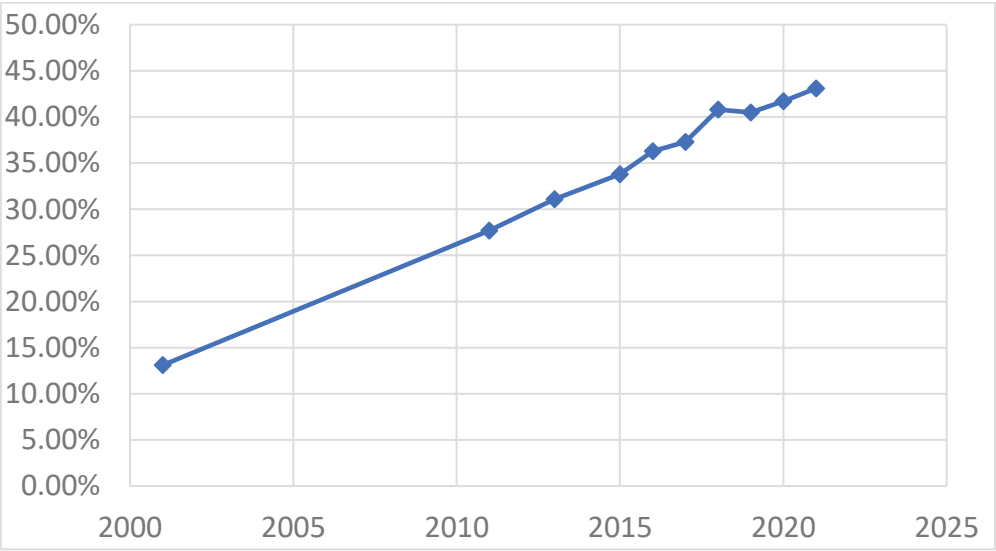

Figure 3

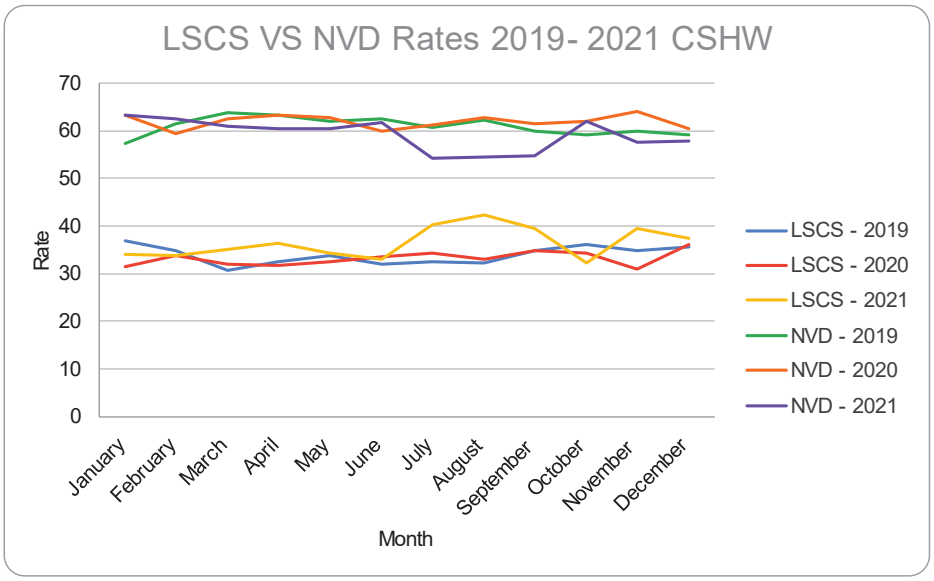

Figure 4

Considering CS rates among different communities, a study done in Southern Asia and Sub-Saharan Africa, CS rates were higher among richer women in rural and urban areas compared to poorer women.[6] (Figure 5)

Country	Caesarean delivery rate[a]				Absolute difference[b] (95% CI)
	Rural poorer	Rural richer	Urban poorer	Urban richer	
Southern Asia					
Bangladesh	2.29	11.52	1.32	20.37	10.19 (7.73 to 12.65)
India	3.59	15.23	5.99	21.75	9.25 (7.44 to 11.05)
Nepal	1.51	7.03	4.40	17.24	2.63 (−1.97 to 7.23)
Pakistan	2.00	10.50	1.65	14.97	8.85 (6.53 to 11.18)

Figure 5

A study done on maternal and perinatal mortality and complications associated with caesarean section in low-income and middle-income countries (LMIC), 196 studies from 67 LMICs. Risk of Maternal death who had CS; 116 studies; 2,933,457 CSs -7.6 per 1000 procedures (CI 6.6-8.6); SS Africa 10.9/1000. 23.8% of maternal deaths in LMICs had CS. CI 21- 26.7% (72 studies 27,651 deaths). Maternal & PN deaths after CS disproportionately high in LMICs. Timing & urgency of CSs pose major risks. "CS – too little, too late OR too many, too soon". Evidence based training in management of labour & monitoring indications for CS. Multi-disciplinary surgical training, resource provision, skills training in IVD, Management of PPH & NN Resuscitation can reduce maternal & Perinatal complications.[7] (Figure 6)

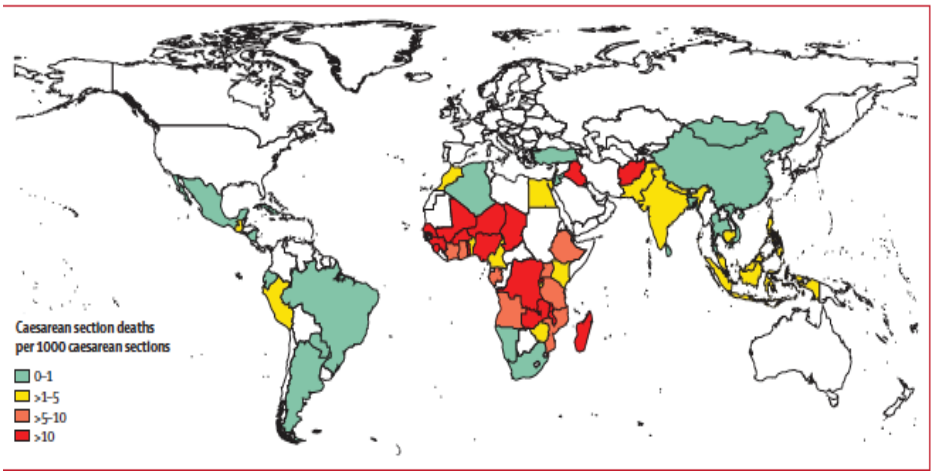

Figure 6

Child birth by its very nature carries risks to the mother and the baby regardless of the route of delivery. Such risks are blood transfusion, uterine rupture, anesthetic complications, shock, cardiac arrest, acute renal failure, assisted ventilation, venous thromboembolism, major infection, in-hospital wound disruption or hematoma. These risks are increased by three folds in cesarean deliveries compared to vaginal deliveries, 2.7% vs 0.9% respectively.

Considering post operative complications there are 4.5% of major complications and 31.2% of minor complications. Common complications include blood loss (1.5%), re-laparotomy (0.8%), pelvic infections (0.6%), VTE (0.6%), fever (15.7%), haematoma (2.6%), UTI (2.5%) and other complications such as thrombophlebitis, wound infection, ileus, endometritis, bladder paralysis accounting for 1-2%.

Maternal morbidity with elective CS is around 3.9% compared to vaginal delivery (3.2%). Urinary incontinence is 4.5% compared to vaginal delivery which is around 7.3%.[1] Early postpartum haemorrhage is around 0.6% and febrile morbidity is 2.2% in CS deliveries.[11]

Increasing CS rate would increase the incidence of Placenta Accreta –thereby increasing uterine rupture, blood loss before, during and after surgery increasing maternal morbidity & mortality. Prevalence of placenta accreta: 0.24%, 0.31%, 0.57%, 2.13%, 2.33%, and 6.74% after the first, second, third, fourth, and fifth or more repeat CS deliveries respectively. In women with placenta praevia 3%, 11%, 40%, 61%, and 67% respectively.[12]

Initiating breastfeeding after CS is often delayed. Babies born via CS may be somewhat drowsy and lethargic and pain medication may make baby sleepy. In some institutes antibiotics are given before and after CS, and may affect baby. Mothers with CS often find it difficult to find a comfortable position in which to nurse without putting pressure on their incision.

Considering CS and the neonatal risks there is,

- Increased transient tachypnoea/ respiratory distress
- Increased risk of pulmonary hypertension
- Risk of inadvertent prematurity
- Increased of cost care
- Fetal injury
- Loss of immunological benefits of “labor” and vaginal birth
- Increased risk of separation from mother after birth

Neonatal respiratory morbidity with elective CS,

- TTN 3.1%, OR 2.8 (2.1-3.8)
- RDS 0.2%, OR 1.3 (0.5-3.8)
- Combined respiratory problems 3.7%, OR 2.8 (2.1-3.6)

3 fold increase in NICU admission with elective CS.[13]

In comparison with VBAC, neonates born after elective repeat CS have significantly higher rates of respiratory morbidity and NICU admission and longer length of hospital stay.[1]

There are several large population based studies done to correlate CS rates to maternal and perinatal mortality.[15,16]

At population level, CS rates more than 10% are not associated with reductions in maternal and neonatal mortality. (Figure 7)

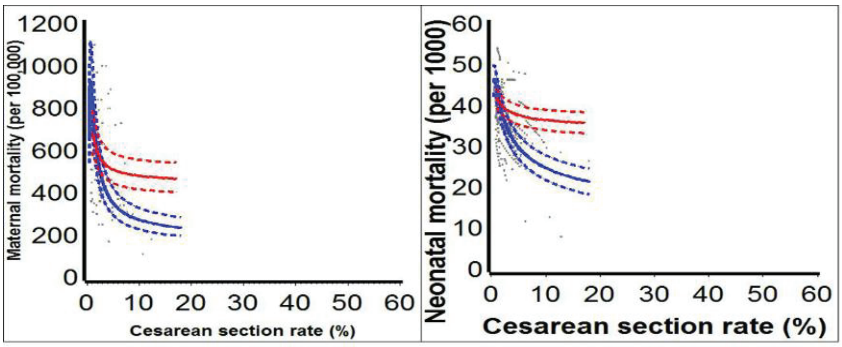

Figure 7

WHO statement made in 2015 on CS rates states that WHO does not promote any specific rate to be achieved at population level. Provide CS to all women in need rather than striving to achieve a specific rate. WHO proposes to adapt the Robson classification system as a global standard for assessing, monitoring and comparing CS. CS are effective in saving maternal and infant lives, but only when they are required for medically indicated reasons. CS can cause significant complications, disability or death particularly in settings that lack the facilities to conduct safe surgery and treat complications. CS should ideally only be undertaken when medically necessary.

WHO proposes the Robson classification system as a global standard for

- Assessing
- Monitoring
- Comparing caesarean section rates

within healthcare facilities over time, and between facilities. In order to assist healthcare facilities in adopting the Robson classification, WHO will develop guidelines for its use, implementation and interpretation, including standardization of terms and definitions. (Figure 8)

Robson groups;

1. Nulliparous women with singleton cephalic pregnancy = >37 weeks in spontaneous labour
2. Nulliparous women with singleton cephalic pregnancy => 37weeks who either had labour induced or delivered by CS before labour
3. All multiparous women, with at least one previous uterine scar and a single cephalic delivery = >37 weeks**

Primary CS is the route cause for escalating CS [17]

Indications for primary CS deliveries include (Figure 9),

- Labour arrest
- Non re-assuring CTG
- Malpresentation
- Multiple gestation
- Macrosomia

Figure 8

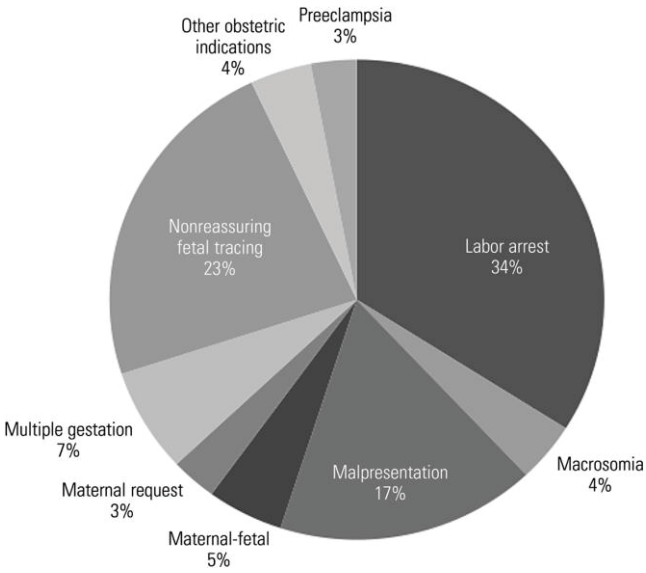

Figure 9

Steps towards safe reduction of primary CS deliveries include,

- Revisiting the definition of labour dystocia
- Improved fetal heart rate interpretation and management
- Reconsidering induction of labour
- Increasing skills of certain procedures-operative vaginal deliveries
- External cephalic version
- Twin delivery
- Increasing access to non medical interventions

Most complications during labour and childbirth could be averted with timely interventions by skilled healthcare providers. Yet, the quality and outcomes of childbirth care remains suboptimal in many health facilities in low-resource settings. To accelerate the reduction of childbirth-related maternal, fetal and newborn mortality and morbidity, the World Health Organization has initiated the "Better Outcomes in Labour Difficulty" (BOLD) project to address weaknesses in labour care processes and better connect health systems and communities.

It includes,

- Respectful care
- Communication
- Labor companion
- Essential physical resources
- Actionable information system

For over 40 years, the partograph has been the central tool for risk identification and intervention during the course of labour, and it is universally recommended for labour management. Despite its wide acceptance

and implementation globally, the use of the partograph has not successfully improved birth outcomes in many settings due to several factors. Notable among these factors are incorrect or inconsistent use, time constraints, shortage of skilled workforce and lack of knowledge of the partograph. Simultaneous monitoring of women in labour and deriving timely and appropriate actions is particularly challenging for health workers in labour units with staffing and equipment shortages, especially for those with non-specialist training. There is no clear evidence that the use of partograph has a positive impact on important clinical outcomes. There is increasing evidence that the pattern of spontaneous labour progression may differ considerably from Friedman's reports (the 1 cm/hour rule) which informed the foundation of the partograph.[18]

A cohort study done on progression of the first stage of spontaneous labour in two sub saharan African countries shows the following,[19]

Purpose of the study was persistent questions as to whether racial characteristics influence labour progression patterns, recent studies have been conducted among different populations, but not yet in any African population. As part of the WHO's Better Outcomes in Labour Difficulty (BOLD) project, which aimed to develop an innovative and effective labour monitoring-to-action tool we examined the patterns of labour progression in a prospective cohort of women in Nigeria and Uganda who gave birth vaginally without adverse birth outcomes following a spontaneous labour onset. Analysis done prospectively collected observational data of 5,606 women who presented in early labour (at or before 6 cm of cervical dilatation) following spontaneous labour onset and gave birth vaginally in 13 maternity hospitals in Nigeria and Uganda. The application of population average labour curves could potentially misclassify women who are slowly but normally progressing as abnormal and therefore increase their chances of being subjected to unnecessary labour interventions.

Conclusions of the study include,

- In monitoring to action tool they have examined the patterns of labour progression in a prospective cohort of women in Nigeria and Uganda who gave birth vaginally without adverse birth outcomes following a spontaneous labour onset.
- Analysis done prospectively by collected observational data of 5,606 women who presented in early labour (at or before 6 cm of cervical dilatation) following spontaneous labour onset and our labour progression data clearly demonstrate that a minimum cervical dilatation rate of 1 cm/hour throughout the period traditionally described as active phase may be unrealistically fast for some women and should therefore not be universally applied as a threshold for identifying abnormally progressing labour
- Likewise, for most nulliparous and multiparous women, labour may not accelerate until a threshold of at least 5 cm is reached
- Interventions to expedite labour to conform to a cervical dilatation threshold of 1cm/hour may be inappropriate, especially when applied before 5cm in nulliparous and multiparous women.
- Averaged labour curves may not truly reflect the variability associated with labour progression, and their use for decision-making in labour management should be de-emphasized. (Figure 10)

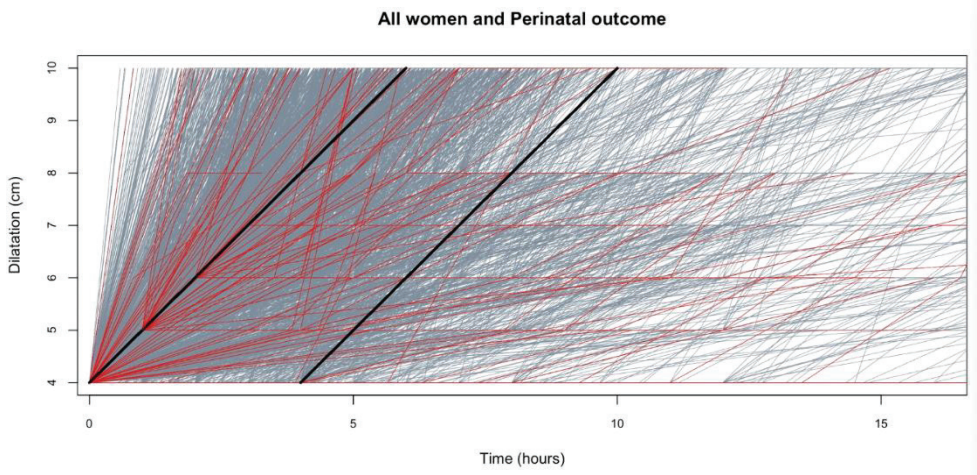

Figure 10: Labour progression profiles of 9995 women vs alert line

Active phase of labor may not start until 5 cm of cervical dilation in multiparas and even later in nulliparas

- A 2-hour threshold for diagnosing labor arrest may be too short before 6cm of dilation
- A 4-hour limit may be too long after 6cm

Given that cervical dilation accelerates as labor advances, a graduated approach based on levels of cervical dilation to diagnose labor protraction and arrest is proposed. [20] (Figure 11, 12, Table 2)

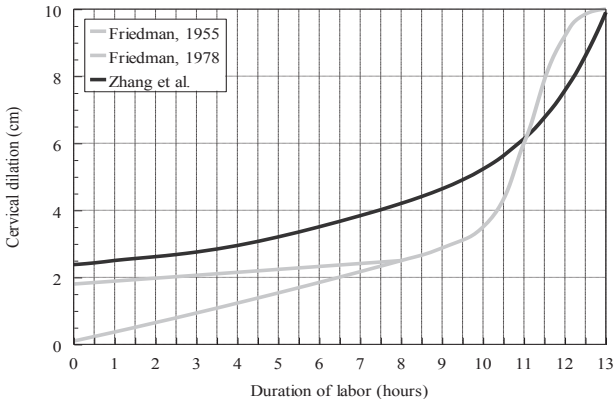

Figure 11

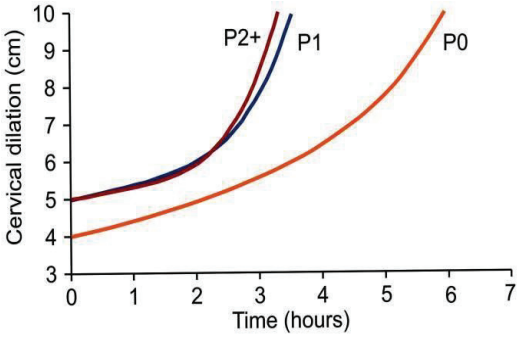

Figure 12

Cervical Change (cm)	Median (h)	95th Percentile (h)
3–4	1.8	8.1
4–5	1.3	6.4
5–6	0.8	3.2
6–7	0.6	2.2
7–8	0.5	1.6
8–9	0.5	1.4
9–10	0.5	1.8

Table 2: Duration of each centimeter change in cervical dilatation for nulliparous women with spontaneous onset of labour

According to a study conducted by S. Arulkumaran, 17% nulliparous and 8% multiparous women augmented using 3cm as start of active phase and 1cm/hr for alert and 2 hours to the right of alert as the action line used 6 to 8 hours of Oxytocin prior to the decision for CS.[21]

ACOG/SMFM consensus recommends the following for safe prevention of primary CS.[22]

- A prolonged latent phase should not be indication for CS
- Slow but progressive labour in first stage of labor should not be indication for CS
- Cervical dilatation of 6cm should be considered threshold **for active phase of most women in labor. Thus, before 6cm of dilation is achieved, standards of active phase** progress should not be applied
- CS delivery for active phase arrest in first stage of labor should be reserved for women 6cm or more of dilation with ruptured membranes who fail to progress despite 4 hours of adequate uterine activity, or at least 6 hours of Oxytocin administrator with inadequate uterine activity and no cervical change

A systemic review done on what matters to women during childbirth with an objective of; to describe what women want from intra-partum care based on open-ended accounts of their beliefs, values, and expectations about labour and childbirth. The findings show that: Women want a positive childbirth experience that fulfils or exceeds their prior personal and sociocultural beliefs and expectations. This includes giving birth to a healthy baby in a clinically and psychologically safe environment with continuity of practical and emotional support from a birth companion(s) and kind, sensitive clinical staff, who provide reassurance and technical competency.

According to WHO recommendations, evidence highlighted the individual variability of the progress of labours which resulted in good perinatal outcome. Many women do not experience a labour that conforms to the average rate on which the partograph design was based. In 2018, the WHO initiated a process to revise the partograph. Emerging evidence on normal labour progression, other recommendations towards improving experience of childbirth, made design of a new labour monitoring tool called the WHO Labour Care Guide.

Appropriate duration of the second stage is not straightforward as it involves multiple short term and long term fetal and maternal outcomes. A longer duration of the second stage of labor is associated with adverse maternal outcomes, higher rates of puerperal infection, third-degree and fourth-degree perineal lacerations, and postpartum hemorrhage. Chances of spontaneous delivery reduces with each hour of the 2nd stage. A specific absolute maximum length of time spent in the second stage of labor beyond which all women should undergo operative delivery has not been identified if the maternal and fetal conditions permit, at least 2 hours of pushing in multiparous women and at least 3 hours of pushing in nulliparous women should be allowed. A specific absolute maximum length of time spent in the second stage of labor beyond which all women should undergo operative delivery has not been identified if the maternal and fetal conditions permit, at least 2 hours of pushing in multiparous women and at least 3 hours of pushing in nulliparous women should be allowed.

With increasing CS rates Operative vaginal deliveries have decreased. Fewer than 3% of women in whom Operative vaginal delivery has been tried go on for CS. In one survey, most (55%) resident physicians in training did not feel competent to perform a forceps delivery upon completion of residency. Attempts at OVD is acceptable in selected cases of Midpelvic station Occipito

transverse or posterior position. These require high level of skills.[23] Operative vaginal delivery by experienced and well trained physicians should be considered a safe, acceptable alternative to cesarean delivery. Training in, and ongoing maintenance of, practical skills related to operative vaginal delivery should be encouraged.[22]

Considerable variation and interpretation of the fetal heart tracings. Unnecessary CSs due to limited knowledge of FH tracing interpretation and lack of guidelines to manage.

Breech presentation at 37 weeks of gestation is estimated to complicate 3.8% of pregnancies, >85% of pregnant women with a persistent breech presentation are delivered by cesarean. With successful external cephalic version vaginal delivery is possible.[24]

Suspected Fetal Macrosomia is not an indication for CS. Ultrasonography for estimated fetal weight in the third trimester should be used sparingly and with clear indications. To avoid potential birth trauma, ACOG recommends that cesarean delivery be limited to estimated fetal weights of at least 5000 g in women without diabetes and at least 4500 g in women with diabetes.

Induction of labor has increased in the United States concurrently with the increase in the cesarean delivery rate, from 9.5% of births in 1990 to 23.1% of births in 2008.[25]

Studies that compare induction of labor to its actual alternative, expectant management awaiting spontaneous labor, have found either no difference or a decreased risk of cesarean delivery among women who are induced.[26]

WHO recommendations states that induction of labour should be performed only when there is a clear medical indication for it and the expected benefits outweigh its potential harms. In applying the recommendations, consideration must be given to the actual condition, wishes and preferences of each woman, with emphasis being placed on cervical status, the specific method of induction of labour and associated conditions such as parity and rupture of membranes. Induction of labour should be performed with caution since the procedure carries the risk of uterine hyperstimulation and rupture and fetal distress. Wherever induction of labour is carried out, facilities should be available for assessing maternal and fetal well-being. Women receiving oxytocin, misoprostol or other prostaglandins should never be left unattended. Failed induction of labour does not necessarily indicate caesarean section. Wherever possible, induction of labour should be carried out in facilities where caesarean section can be performed. Success of induction depends on Parity, Cervical Score, Period of Gestation, Position of vertex (OA Vs OP), Method of Induction (PG Vs Oxytocin).

Use of cervical ripening methods such as misoprostol, dinoprostone, prostaglandin E2 gel, Foley bulbs, and laminaria tents lead to lower CS rates, than induction of labor without cervical ripening. Use of >1 of these methods sequentially or in combination, such as misoprostol and a Foley bulb have been helpful to ripen the cervix. Labor induction should be performed primarily for medical indication; If done for non-medical indications, the gestational age should be at least 39 weeks or more and the cervix should be favorable(Bishop score 8 or higher) , especially in the nulliparous patient. The diagnosis of failed induction should only be made after an adequate attempt. Failed induction is defined as failure to generate regular (eg, every 3 minutes) contractions and cervical change after at least 24 hours of oxytocin administration, with artificial membrane rupture if feasible.[27]

The rate of cesarean deliveries among women with twin gestations increased from 53% in 1995 to 75% in 2008.[28] Women with either cephalic/cephalic-presenting twins or cephalic/non cephalic-presenting twins should be counseled to attempt vaginal delivery. Residents should be trained to twin vaginal deliveries.

Efforts should be made to ensure that women with a history of genital herpes, even in the absence of an outbreak in the current pregnancy, are offered oral suppressive Acyclovir therapy within 3-4 weeks of anticipated delivery or at the latest, 36 weeks of gestation. Cesarean delivery is not recommended for women with a history of herpes simplex virus infection without active genital disease during labor.[29]

Other factors taken into consideration are:

- Medical led opinion of safer pregnany and delivery due to higher rates of interventions
- Fear of child birth and labour pains on the part of the patient who requests an Elective C-section for her delivery
- Fear of medical litigation on the part of the Obstetricians, the medical teams and the hospitals
- The belief that C-section prevents trauma and damage to the pelvic floor
- The belief that C-section is less traumatic to the baby
- Convenience to the care provider and to the mother in delivering by C-section
- Cultural considerations such as auspicious birth date and time for the baby to be born which will bring good luck for the baby and the family
- Low tolerance of anything less than the perfect birth outcome

Presence of continuous one-on-one support during labor and delivery was associated with improved patient satisfaction and a statistically significant reduction in the rate of cesarean delivery.[30]

Five concerted steps to lower CS rate.[31]

1. Financial incentive
2. Courses/ training to increase safety in the labour ward
3. National guidelines to best manage labour
4. Open publication of outcomes
5. Information leaflets to health care personal and pregnant mothers

Main points of the concerted action

- Wide dissemination of the risks
- Financial incentives
- National guidelines
- Training of professionals
- Clear dissemination of results
- It was possible to reduce national c-section rates with a concerted action incorporating dissemination of information, training and financial incentives

Quality improvement initiatives lead to reduction in nulliparous term singleton vertex CS rates.[32] (Table 3)

Five factors that were introduced are,

- Proper CTG education, interpretation and action
- Modern labour curve – longer latent phase, slow active labour (increased BMI, Epidural, Elderly mothers)
- VBAC + drills to do immediate CS
- Proper management of GDM and shoulder dystocia drills
- Training in operative vaginal delivery
- Elective induction in nulliparae, >39 weeks, good indication, good cervical score. If induction < 41 weeks – vetted by Labour ward lead
- Elective CS vetted by Labour ward lead.

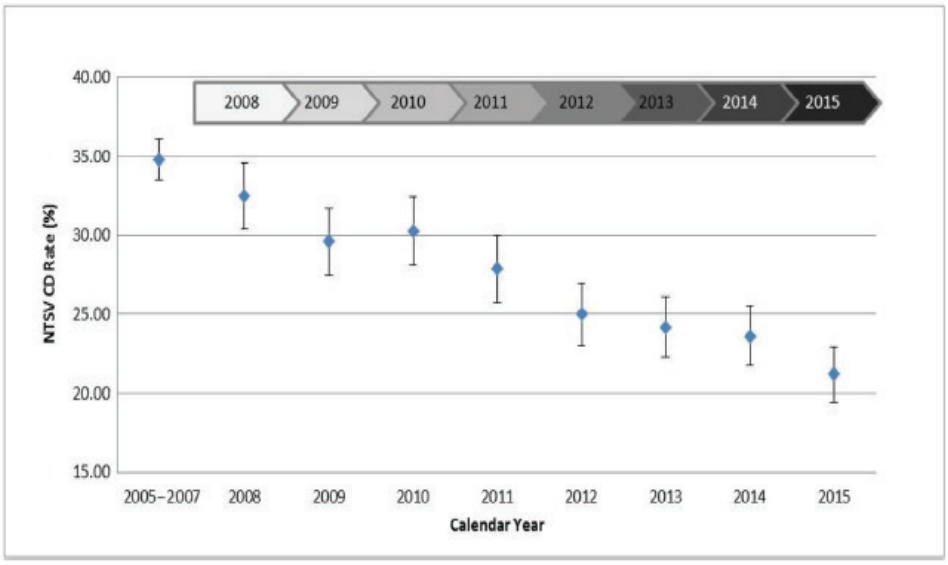

Table 3: Interventions and the nulliparous term singleton vertex cesarean rate 2008-2015

When a woman requests a CS because she has a fear of childbirth, she should be offered counselling (such as cognitive behavioural therapy) to help her to address her fears in a supportive manner, because this results in reduced fear of pain in labour and shorter labour.[35] When surveyed, most nulliparous patients with term singleton cephalic fetuses and uncomplicated pregnancies state that their preferred mode of giving birth is vaginally. Only a small minority such patients, about 1 to 5 percent in the United States and about 3 percent globally, prefer a cesarean birth (so called cesarean delivery on maternal request [CDMR]). The American College of Obstetricians and Gynecologists (ACOG) states that it is the provider's right to decline to perform a CDMR, but a referral to another provider should be facilitated.

In conclusion towards safe reduction of CS deliveries, revisit the definition of labour dystocia and guidelines, partograph to WHO labour guide and induction of labour, improve fetal heart rate interpretation and management, increase skills in certain procedures such as operative vaginal delivery breech delivery, external cephalic version and twin delivery and increase access to non-medical interventions such as respectful maternity care. We should regain our role as Obstetricians, maintain our obstetric competencies and inform and respect women's choices.

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Original Research

Disruption to antenatal and postnatal services during the COVID-19 pandemic: Experience in a selected Medical Officer of Health area in Colombo District

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Key words – antenatal care, post natal care, Covid-19 pandemic

Background

Sri Lankan government imposed nationwide curfew to curtail the spread of COVID-19 in March 2020. Colombo district having the highest caseload was under the curfew over six consecutive weeks.

Objective

To analyze the effect of COVID-19 pandemic on provision and utilization of antenatal, and postnatal services at field level during the curfew in a selected Medical Officer of Health (MOH) area in Colombo district.

Methods

A descriptive cross-sectional study was conducted in Boralesgamuwa MOH area by comparing data for the second quarter for 2019 with 2020 in monthly returns of Public Health Midwife (PHM). Difference between two proportions were compared using Chi-squared test. Significance level was taken as $p<0.05$.

Results

Pregnant mothers under care for second quarter of 2019 and 2020 were 353 and 345 respectively. Significant reductions were observed in subsequent antenatal clinic (ANC) visits (15.20%, CI 8.00%-22.18%, $p<0.0001$), attendance to second antenatal session (22.94%, CI 11.88%-33.21%, $p<0.0001$), number of pregnant mothers who attended more than seven ANC (12.92%, CI 1.67%-23.70%, $p=0.024$), and number referred for oral health (21.84%, CI 11.55%-31.49%, $p<0.0001$). Postpartum mothers under care during the study period for the years 2019 and 2020 were 58 and 53 while infants registered were 151 and 133 respectively. Infants registered with a normal birth weight decreased by 14.82% (CI6.19%-23.27%, $p=0.0008$). Continuation of home visits by PHM after 42 days of delivery and the number of infants who were brought to the clinic at one month showed a significant decline of 18.25% (CI 15.61%-20.85%, $p<0.0001$) and 30.93% (CI 20.30% - 40.48%, $p<0.0001$) respectively.

No significant reduction in pregnant mother registration or antenatal and postpartum home visits.

Conclusions

A significant disruption of antenatal and postnatal services occurred during the COVID-19 pandemic at the field level.

Introduction

Coronavirus outbreak reported in Wuhan, China in December 2019 later developed into a pandemic affecting 213 countries and territories all around the world. As of April 13th 2022, over 500 million had contracted the virus and over 6 million deaths reported globally[1]. Sri Lankan statistics revealed over 600,000 cases with 16,000 deaths during the same period[2]. To curtail the disease spread, various social distancing measures were adopted by the governments. Sri Lanka was under strict social distancing measures including nationwide curfew imposed by the government during 20th of March to 11th of May 2020. Due to high case load curfew was extended in Colombo district which lasted over 52 days[3]. Under such a national and global situation every aspect of living was affected to large scale. Health care system was playing the topmost important role in controlling this pandemic. However, as expected in any disaster situation, routine public health services got disrupted. Reasons may include closure of public health clinics to prevent spread of the disease, and non-participation of service recipients due to fear of being contracted.

Despite the fact that pregnant women were placed in the 'vulnerable group', women's rights to have optimum antenatal care were threatened during the pandemic. In UK, pregnant women were asked to not to visit a health centre unless they have an appointment that involve an ultrasound or laboratory test[4]. Case studies from Italy, Germany and Israel reveal swift recalibration of health care during the pandemic was instrumental in maintaining the essential service provision and therefore the well-being of pregnant women and their babies[5]. In Sri Lanka, after initial disruption of service provision over a period of three weeks, pregnant women were given special permission to travel despite the nationwide curfew for their medical needs. Antenatal clinics, postnatal clinics and obstetric wards operated under extreme cautions of hygiene and social-distancing according to the new guidelines issued by the Ministry of Health[6].

Since this pandemic is a sudden onset novel scenario, global lack of preparedness is foreseeable. Due to the lack of research evidence extreme caution is necessary especially when dealing with vulnerable groups such as pregnant women and infants. Hence, there should be no disruption in the provision of health care for those particular groups. With this in mind, the aim of our research was to get an overview of antenatal and postnatal health care in a selected MOH division in Colombo district during the first wave of the COVID-19 pandemic in order to identify service disruptions and help in future preparations for such pandemics.

Methods

A cross sectional study was conducted using secondary data related to antenatal and postnatal services obtained from the electronic based routine health management information system of the MOH office which included Quarterly MCH Clinic Returns (H527), and the PHM monthly returns (H524). The selected study period was April to June (second quarter) for the year 2020 which was compared with the same period for 2019. This period was purposefully selected since it included the period of lockdown and indefinite curfew in the country during the first wave of the COVID-19 pandemic. Two trained pre-intern medical undergraduates extracted the relevant data from the MOH office database under the supervision of the MOH. Antenatal clinic visits, investigations and other routine care, postpartum maternal morbidity, postnatal care and family planning for the above mentioned periods were entered into in an excel sheet. Data was presented as percentages with 95% CI using tables and graphs and statistical significance of difference between two proportions were

analyzed using the Chi-squared test. Level of significance was taken at $p<0.05$.

Results

Antenatal care

Total number of pregnant mothers under care during the study period (second quarter April to June) for the year 2019 and 2020 were 353 and 345 respectively. Registration of new pregnant mothers was similar over the period compared (n=156 for year 2019 and n=156 for 2020). However, there was a statistically significant reduction in the proportion of subsequent clinic attendance percentage difference of 15.20% (CI 8.00-22.2) ($p<0.0001$). Percentage of antenatal clinic attendance at either government hospitals or field (more than 7 visits) showed a statistical significant reduction percentage difference of 12.92% (CI 1.67-23.7)($p<0.024$) (88 visits in 2019 vs 70 visits in 2020). Percentage of attendance to 2nd antenatal sessions conducted at the MOH clinics and percentage of pregnant mothers referred for oral health also showed a significant statistical difference for the study period for year 2019 and 2020. (Table 1). Antenatal home visit at least one done by PHM for new mothers was 141 in 2019 and 122 for the 2020 during the data collection period. There were 508 subsequent visits done in 2019 compared to 2020 which was 337 visits during the same period.

Table 1: Comparison of field antenatal care services for the second quarter of 2019/2020

Indicator*	**2019 N (%)**	**2020 N (%)**	**% Difference (95% CI)**	**Test statistic Chi value***	**P value**
Subsequent antenatal visits (old)	245 (69.40)	187 (54.20)	15.20 (8.00-22.2)	17.072	**<0.001**
ANC attendance either govt. hospitals or field (more than 7 visits)	88 (58.66)	70 (45.75)	12.92 (1.67-23.7)	5.046	**0.0247**
Couples attending 2nd antenatal sessions conducted by MOH office	105 (70.00)	72 (47.05)	22.94 (11.8-33.21)	16.356	**0.0001**
Pregnant mothers referred for oral health	121 (80.66)	90 (58.82)	21.84 (11.5-31.49)	17.035	**<0.001**
Pregnant mothers with oral health problems reported	25 (16.66)	10 (6.53)	10.13 (2.92-17.52)	7.583	**0.0059**

*** denominator taken as pregnant mothers under care in the quarter*

Proportion of mothers investigated for, HIV status and diabetes mellitus was not significant for the 2nd quarters for the two years.

Postpartum care

The number of postpartum delivery reporting (by message or physically) was 172 and 148 for the years 2019 and 2020 during the period from April to June. Post-partum mothers under care during study period for the year 2019 and 2020 were 58 & 53. The postpartum home visits done within the first 10 days was 142 and 119 for 2019 and 2020 respectively. Post partum visits done during 14-21 days and around 42 days was 135 and 134 for 2019 and 109 and 110 for 2020 respectively (denominator is estimated births).

Number of infants under care for the 2nd quarter of 2019 and 2020 were 591 and 552 respectively. Infants registered with a normal birth weight decreased by 14.82% (CI 6.19%-23.27%, p=0.0008) for the two compared years. Continuation of home visits by PHM after 42 days of delivery and the number of infants who were brought to the clinic at one month showed a significant decline of 18.25% (CI 15.61%-20.85%, p<0.0001) and 30.93% (CI 20.30% - 40.48%, p<0.0001) respectively (Table 2). Infant registration for the second quarter for year 2019 was 187 when compared to 145 for the year 2020. Child welfare clinic attendance at one month showed a significant reduction for the same quarter for the year 2019 and 2020 which was 118 and 48 respectively.

Table 2: Comparison of field infant care services for the second quarter of 2019/2020

Indicator	2019 N (%)	2020 N (%)	% Difference (95% CI)	Test statistic Chi value*	P value
*No. of live births >2.5kg	134 (89.33)	114 (74.50)	14.82 (6.19-23.27)	11.166	**0.000**
**No. Registered within one month	187 (31.64)	145 (26.26)	5.37 (0.10-10.2)	3.995	**0.0456**
**Infants new home visits	100 (16.92)	58 (10.50)	6.41 (2.42-10.37)	9.846	**0.001**
**Infants subsequent (old) home visits	125 (87.81)	187 (33.87)	53.94 (48.9-58.45)	351.35	**0.0001**
**CWC attendance within one month	112 (59.89)	42 (28.96)	30.93 (20.3-40.48)	31.318	**0.001**

** denominator taken as total number of deliveries reported during the quarter*
*** denominator taken as number of infants under care during the quarter*

Discussion

The selected study period was April- June 2020 (second quarter) which was compared with the services provided and utilized during the same period in 2019. This period was selected since this was the period during which continuous curfew was imposed that could have adversely affected the MCH service provision at field level.

The Family Health Bureau released several guidelines during the COVID-19 pandemic period regarding the method of conducting field clinics and home visits. The midwives were expected to prepare a list of mothers who were over 32 weeks of gestation and high risk mothers and to visit them at home after prior appointment. The registrations of new antenatal mothers were done via phone calls. The public health midwives were expected to conduct at least one home visit during the postnatal period after prior appointment from the mothers[6].

Provision of routine health care being limited to high risk antenatal women to prevent overcrowding and reduction in utilization of the limited services provided may have contributed to the observed findings. This reduction in health seeking behaviour could be attributed to the reluctance of public transport utilization for travelling and avoidance of crowded places due to fear of contagion. A study conducted in Nepal reported that lockdown took the form of severe restrictions on transport and closure of outpatient departments of many hospitals, and only intra district travel has been permitted once the lockdown was lifted. They also reported that the capacity to provide routine health services were restricted in hospitals while instituting COVID-19 preparedness. In Nepal, fear of COVID-19 transmission in hospital settings was widespread because of a scarcity of proper protective equipment. Therefore, the authors concluded that all these factors would have affected a woman's access to safe delivery[7].

A similar study on utilization of maternal and child health services was conducted in South West Ethiopia where they compared the same time periods for the year 2019 and 2020. Compatible with our findings, the authors reported that there was a statistically significant reduction in mean utilization of all services including antenatal care, institutional delivery, postnatal care, family planning and child immunization by 27.4%, 23.5%, 29.1%, 15.9% and 28.5% respectively[8].

Another study reported that the COVID-19 pandemic was indirectly threatening breastfeeding practices such as early initiation and exclusive and continued breastfeeding specially in the lower middle income countries[9]. This was due to the limited provision and use of health services and disruptions to the enabling environment and availability of skilled health workers and limited community based lactation support and counselling. However, in our study we were unable to extract this evidence.

In par with our findings, another study on the impact of COVID-19 pandemic on the preventive services in Qatar reported that a marked decline in the utilization of wellness services by 20%, well baby clinic and immunization services by 40% and breast cancer screening services by 100% during the lockdown period[10].

A similar study was conducted in Bangladesh to assess the potential impacts of COVID-19 on maternal health services by analyzing the routine monthly service statistics from January to July in the year 2019 and 2020. The authors reported the antenatal clinic visits had reduced by 50% during the study period, a clear negative trend in the postnatal visits and reduction in institutional deliveries[11]. Ahmed et al conducted a study in three low- and middle-income countries in 2021 during the period

from March to May 2020 on the effect of COVID-19 on maternal newborn and child health (MNCH) services and they reported that there was a reduction in utilization of basic essential MNCH services such as antenatal care, immunization of children and family planning services[12]. Although our findings indicate a reduction in antenatal and postnatal care service provision compatible with the findings reported by Ethiopia, Bangladesh and Qatar, the rate of reduction was not more than 25% for the antenatal service provision. Sri Lanka had provided better services when compared to other countries cited in the literature during the same period of study.

Conclusions

This study showed that utilization of maternal, reproductive, and newborn health-care services was adversely affected by the pandemic. These findings will help the public health policymakers to understand the effects COVID-19 on preventive services. Through monitoring the utilization of the essential preventive health services and having a contingency recovery plans to manage the backlog in provision of quality care is needed to prevent recurrence of similar situation during any future pandemic. Further research is needed to explore the impact of the service disruption due to COVID-19 on maternal and perinatal outcomes.

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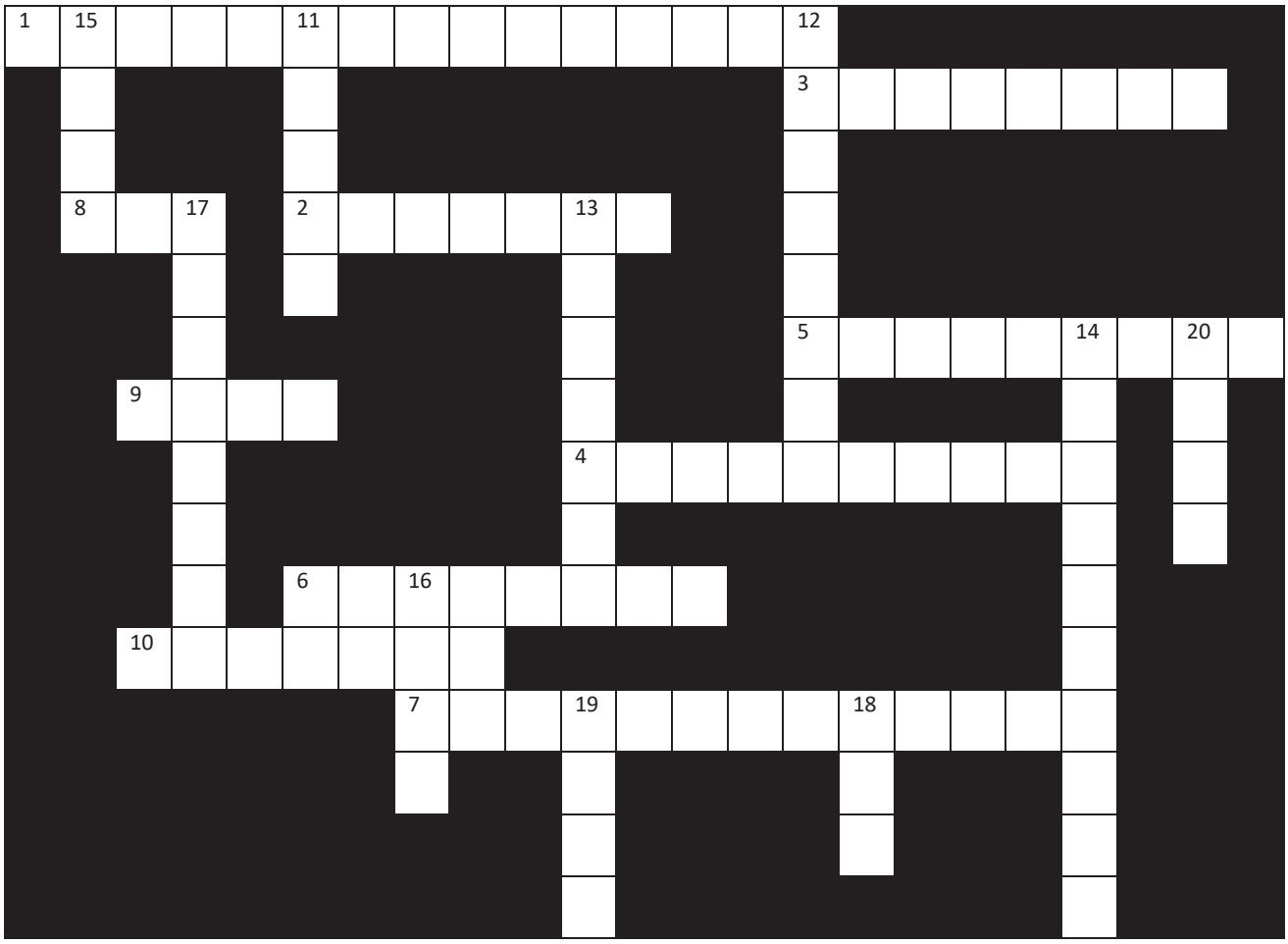
CROSS WORD PUZZLE

Dr. Surantha Perera



Across –

1. A syndrome due to the diminished growth of first and second pharyngeal derivatives
2. One of the nematode phylum
3. One common cause of the diarrhea
4. Esophageal atresia will present with
5. Collection of ganglion cells in the retina
6. Pathognomonic dermatologic sign of SSSS
7. Semisynthetic glycopeptide with wide coverage
8. Temporary suppression of erythropoiesis
9. Respiratory support is usually needed in PPHN
10. Hip disease caused by the avascularity

Down –

11. These bodies carry inclusions
12. A collection of symptoms is called as
13. Cerebral edema of hyponatremia is due to
14. Skeletal dysplasia of Hurler's syndrome
15. Lethal disease in the males
16. Nonpharmacological treatment diet for epilepsy
17. Drug of choice in apnea
18. Preterm babies are prone for
19. Pseudohypertrophy is seen in the
20. Brain tumor developed in Tuberous sclerosis

ANSWERS

[1]T	[15]R	E	A	C	[11]H	E	R	C	O	L	L	I	N	[12]S								
	E				E									[3]Y	E	R	S	I	N	I	A	
	T				I									N								
	[8]T	E	[17]C		[2]N	E	C	A	T	[13]O	R			D								
			A		Z					S				R								
			F							M				[5]O	P	T	I	C	[14]D	I	[20]S	C
		[9]H	F	O	V					O				M					Y		E	
			I							[4]S	E	C	R	E	T	I	O	N	S		G	
			E							I									O		A	
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SECTION 2

Proceeding of the 21st Annual Scientific Congress 2022
Perinatal Society of Sri Lanka, Colombo

Abstracts

A SURVEY ON PERINATAL AND FOLLOW-UP OUTCOMES OF FETAL ANOMALIES WITH MULTIDISCIPLINARY CONSULTATION

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Abstract

Introduction and objectives: Fetal anomaly increases the risk of infant death as well as causes great pain to the family. We aimed to investigate the frequency of different types of fetal anomalies and their outcome after a multidisciplinary consultation by a team consisting of Obstetricians, Paediatricians and Clinical Geneticists.

Methods

A retrospective study was conducted in pregnant women who were diagnosed with fetal anomaly by ultrasound between April 2021 and September 2021. Patient's information and the ultrasound findings were obtained from the database at the centre and outcome and follow up details were obtained by contacting the patients over the phone.

Results

There were 33 women. The anomalies affected central nervous system (n=9, 27.27%), genitourinary system (n=8, 24.24%), multiple malformations (n=7, 21.21%), cardiovascular system (n=4, 11.42%), gastrointestinal system (n=3, 9.09%), and musculoskeletal system (n=2, 6.06). 24 (72.72%) of pregnancies were carried to the third trimester. Of them 12 (50 %) were normal deliveries and 12 (50%) were caesarean sections. The outcome was a stillbirth (16.66%, n=4), neonatal death (37.5%, n=9), live with CNS anomalies (20.83%, n=5), live with renal anomalies (8.33%, n=2), or live with minor abnormalities (16.66 %, n=4). The neo-natal deaths were due to renal anomalies (33.33%, n=3), congenital diaphragmatic hernia (22.22%, n=2), cardiac abnormalities (22.22%, n=2) gastrointestinal abnormallities (11.11%, n=1), and skeletal dysplasia (11.11%, n=1). The still births were due to heart diseases (50%, n=2), CNS anomalies (25%, n=1), and renal abnormalities (25%, n=1). Of the babies delivered by Caesarean Section, 50% (n=6) were alive. Of those delivered normally 33.33% (n=4) were still births, 25%, (n=3) were neonatal deaths, and 41.66 % (n=5) were alive. Of the babies who were alive only 5 (45.45%) were developmentally normal or near normal.

Conclusion

Fetal anomalies are associated with poor pregnancy as well as poor long term outcomes for surviving babies. The establishment of a multidisciplinary consultation team is necessary to manage and support these families.

Keywords : multidisciplinary consultation, fetal anomalies, pregnancy outcome

CAN CORD BLOOD PREDICT BODY COMPOSITION?

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Introduction

The simplest 2-compartment model of body composition describes our body content as fat mass (FM) and fat free mas (FFM). Cord leptin, which is mainly secreted from fetal adipocytes and cord insulin, which is produced by the fetal pancreas is directly proportional to the fetal fat mass whereas cord adiponectin, which is secreted by fetal adipose tissue and cord IGF-1, which is secreted by the placenta is directly related to fetal fat free mass.

Objective

To assess the relationship between cord leptin, insulin, adiponectin and IGF-1 with infant body composition

Methods

Body composition was measured at 3,6,9,12,18 and 24 months based on the deuterium-dilution-method using saliva sample analysis, in healthy, term babies as part of a longitudinal study from 2015-2019, at Pro-fessorial Unit, De Soysa Hospital for Women, Colombo. Cord blood collected at birth was centrifuged and stored at -800C. DRG-Leptin-Sandwich-ELISA-EIA-2395, DRG-Insulin-Sandwich-ELISA-EIA-2935, Demeditec-Adiponectin-ELISA-DEE009 and Demeditec-IGF-1-600-ELISA-DE4140 was used for analysis. Ethics approval was obtained from Faculty of Medicine, University of Colombo. Graph Pad Prism 9 for mac OS, version 9.1.1(223), GPS – 2127662 was used to generate the standard curves. Data was analysed via SPSS v27 using linear regression, to determine whether cord blood factors can predict body composition of infants, after ensuring that assumptions of normality, linearity, multicollinearity and homoscedasticity were met.

Results

A total of 250 cord blood samples were analysed. Mean and SD for cord blood were 7.3 ± 9.9 ng/ml for leptin, 6.4 ± 5.2 mIU/ml for insulin. 60.6 ± 39.9 ng/ml for IGF-1 and 31.3 ± 14.8 µg/ml for adiponectin. Each ng/ml increase in adiponectin decreased FFM index (FFMI) by 0.1g/cm at 3 months of age[beta=-0.022, p=0.008, r2=0.074, F(1,91)=7.251, p=0.008] and 0.3g/cm at 9 months of age [beta=-0.027, p=0.013, r2=0.078, F(1,77)=6.518, p=0.013]., each mIU/ml in insulin increased FM by 0.05g at 24 months of age [beta=0.046, p=0.044, r2=0.125, F(1,31)=4.425, p=0.044] and each ng/ml increase I IGF-1 increased FFMI by 9g/cm at 9 months of age [beta=0.009, p=0.041,r2=0.053,F(1,77)=4.308, p=0.041].

Conclusion

Cord blood insulin, adiponectin and IGF-1 can be used to predict body composition within the first 2 years of life.

PROSPECTIVE ANALYSIS OF NEONATAL SURGICAL EMERGENCIES MANAGED BY THE PIONEERING PAEDIATRIC SURGICAL TEAM OF COLOMBO NORTH TEACHING HOSPITAL RAGAMA

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Introduction

Prospective analysis of neonatal surgical emergencies managed by the pioneering paediatric surgical team of Colombo North Teaching Hospital Ragama since establishment of the service 10 months back was performed. All neonates were provided multi-disciplinary care at the two special care baby units of the hospital.

Objectives

To study spectrum of pathologies and assess quality of care.

Method

Data of all neonatal surgical interventions performed from 2021.11.01-2022. 08.31 was collected from first author's personnel operations log book

Results

Total number of surgical neonates: 10

There were 5 neonates with left congenital diaphragmatic herniae (CDH). All 5 were intubated at birth. Four underwent reconstruction after maximum possible stabilisation. First baby to undergo a neonatal laparotomy at the hospital was born as term NVD weighing 1.68kg. He had an uneventful recovery. Second baby born as term NVD weighing 2.5 kg had severe pulmonary hypertension and cardiac defects. He survived only 24 hours post-operatively. Third baby born at term as emergency LSCS weighing 2.4kg had uneventful surgical recovery. Fourth baby born as NVD at 27/52 POG weighing 0.8kg, was unstable to undergo surgery and survived <24 hours. Fourth baby born at term weighing 2.4kg had uneventful surgical outcome.

Two had congenital gastro-intestinal pathologies. A baby with type 3b apple peel type of ileal atresia with ileal perforation and large meconium cyst had laparotomy with end to end ileal anastomosis. After treatment for septicaemia, he was sent home. One with gastroschisis with 25/52POG weighing 0.9kg underwent repair within few hours of diagnosis. He succumbed after 48 hours.

There were 3 pre-term babies with NEC requiring surgical intervention. All having birth weights ranging from 1.34-1.8kg. Two born as NVD had insertion of peritoneal drains. One recovered well. Second baby recovered bowel functions but succumbed to septicaemia after 2 days. Third baby was second of a twin with syndromic-facies having NEC and intra-peritoneal haematoma. He underwent laparotomy for decontamination and is on supervised feeding 2weeks after laparotomy.

Conclusions

Pioneering Neonatal Surgical Team of THCN managed 34 neonates over 10 months since establishment. The multi disciplinary teams of two special care baby units of hospital facilitated improved surgical out-come.

ASSOCIATION BETWEEN NEUROMOTOR ASSESSMENTS AND THE DEVELOPMENTAL OUTCOMES OF HIGH-RISK INFANTS AT 9-24 MONTHS

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Introduction

Early detection of neuro-developmental (ND) disorders enables infants to be promoted to early intervention services.

Objective

This study aimed to evaluate ND outcomes in high-risk infants by examining the association between the neuro-motor assessments at 3 and 6 months corrected age (CGA) with the neuro-developmental assessments at 9 months to 24 months.

Method

A retrospective cohort study of the infants recruited to Ayati Centre. The Hammersmith Infant Neurological Examination (HINE) at CGA 3 and 6 months and Bayley Scales of Infant and Toddler Development III (BSID-III) assessment at CGA 9 to 24 months were analyzed. The evidence shows HINE scores of less than 57 and 73 at CGA 3 and 6 months respectively indicating a high risk for CP. Based on these scores the infants were grouped into normal and abnormal HINE scores. An index composite score of more than 85 in BSID-III was considered as typical development. The confidentiality of the study participants was preserved. Statistical analysis was done using SPSS version 22.0.

Results

Fifty-nine infants (35 males and 24 females) were eligible for the study. The mean CGA at presentation was 11.09±7.425 weeks. The mean birth weight (BW) was 2.12±0.89 kilograms and the mean gestational age (GA) was 35.83±5.601 weeks. Common risk factors included neonatal sepsis (64.4%) and prematurity (55.9%).

Seventeen children had normal HINE scores and 60 children had abnormal HINE scores between 3 to 6 months of age. Thirty of the 38 infants with absent fidgets had abnormal HINE scores at 3 to 6 months. Out of the 59 infants who were recruited, 36 children were identified as having typical neuro development. Five infants were diagnosed with cerebral palsy.

Eighteen children were identified as having motor developmental concerns which is higher compared to the number of children having cognitive (n=12) and language (n=11) developmental concerns. There is no significant association between presence of fidgets and the cognitive, language and motor development($p>0.05$). There is no significant association between HINE scores at 3 to 6 months and the cognitive, language and motor development($p>0.05$).

Conclusion

Early neuro-motor assessments help predicts neuro-developmental outcomes of at-risk infants.

Keywords - HINE; BSID-III; GMs; Neuro-developmental outcome; Infants

AUDIT ON MAINTENANCE OF MODIFIED NATIONAL PARTOGRAM IN LABOUR MANAGEMENT IN A TERTIARY CARE HOSPITAL

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Introduction

The partogram is used in intrapartum assessment of progress of labour and fetal and maternal wellbeing.

Objective

The aim of the study was to assess the proper maintenance of the national partogram in District Base Hospital Dambulla.

Method

This was a retrospective audit carried out on a sample of obstetric records of parturients who gave birth from 1st of July 2022 to 15th of August 2022.A total of 200 partograms were analysed. The gold standard considered was 100% accurate maintenance of all the components with 100% accurate intervention where indicated.

Results

From the 200 partograms studied, the basic details including name, age, parity and the blood group was documented in all. But the anenatal risk factors and specific instructions were mentioned only in 158 (79%). Regarding the fetal well being assessment fetal heart rate and the liquor assessment was properly documented in 194(97%) and 158(79%) respectively. Among parameters for labour progress, cervical dilataion and descent of the head were assessed and recorded in 156(78%) and 154 (77%) respectively. Action line was drawn in 157 (78%) and the alert line in 163 (81%). But the oxytocin dosage and the titration was mentioned only in 126(63%) and uterine contractions were documented only in 120 (60%) Maternal Blood pressure and the pulse rate mentioned in 174 (87%). But the necessary actions were taken in almost all cases to achieve optimal fetal outcome.

Conclusion

Although there was good fetal outcome, substandard maintenance was observed in all the components of the partogram except the basic details of the patient. The documentation of uterine contractions and the oxytocin dose titration was far below the standard. This should be improved with proper education of all the Labour room staff members regarding the importance of proper maintenance to achieve a 100% target and mainly regarding the method of marking the contractions and the oxytocin dosages. Re audit will be planned after appropriate interventions.

PRECONCEPTIONAL, ANTEPARTUM AND POSTPARTUM FOLIC ACID INTAKE, FOLIC ACID AWARENESS AND ASSOCIATED FACTORS AMONG MOTHERS IN GALLE MUNICIPAL COUNCIL MEDICAL OFFICER OF HEALTH AREA

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Introduction

Folic acid (FA) is an important micronutrient before and during pregnancy because of its vital role in the prevention of neural tube defects, orofacial clefts and anemia.

Objectives

This study was carried out to determine the FA awareness; preconceptional, antepartum and postpartum FA intake and associated socio-demographic factors among mothers in Galle Municipal Council (MC) Medical Officer of Health (MOH) area.

Methodology

A cross-sectional study was carried out recruiting 368 mothers of children aged up to one year, attending the Child Welfare Clinics conducted by the Galle MC MOH office. Data were obtained through a self-administered questionnaire and analyzed using SPSS version 26.0. Chi-Square test was used to find out the associations between variables. $p<0.005$ was considered as the level of significance.

Results

The majority of the mothers were Sinhalese (n=214, 58.2%) and educated above grade 11(n=246, 66.8%). The mean age of the mothers was 30.4 years (SD=+5.3, range 18-45 years).

The mean percentages of awareness on FA and importance of FA in relation with pregnancy among mothers were 50.3% (SD+19.6) and 54.0% (SD+19.3) respectively. Age, ethnicity, occupation, educational level and monthly income ($p<0.05$) were associated with a satisfactory overall awareness on FA. The mean percentages of FA intake during preconceptional, antepartum and postpartum periods were 62.6% (SD+40.5), 90.8% (SD+24.0) and 44.8% (SD+43.6) respectively. Ethnicity, monthly income, educational level and occupation were associated with FA intake during preconceptional, antepartum and postpartum periods ($p<0.05$). The major source of information on preconceptional FA was Public Health Midwife (PHM) (47.23%) while consultant obstetrician and their clinics were the main sources during antepartum (48.28%) and postpartum (47.57%) periods. The major reason for not to have preconceptional FA (44.45%) was lack of knowledge while forgetfulness was the main reason for lack of compliance during postpartum (65.8%) period.

Conclusions

The awareness on FA among mothers in Galle MC MOH area was moderate. The intake of FA during preconception and postpartum periods were significantly low compared to that of the antepartum period. Therefore, measures to increase FA awareness, and intake of FA during preconceptional and postpartum periods should be strengthened further.

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AUDIT TO STRENGTHEN THE CURRENT INTERPRETATION OF A CARDIOTOCO-GRAPH (CTG) AND ITS DOCUMENTATION IN THE ANTENATAL WARD OF ASIRI CENTRAL HOSPITAL

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Introduction

The antenatal unit of Asiri Central Hospital performs CTG on patients admitted into the unit with a gestational age of 28 weeks and above. The unit has never audited the practice of CTG documentation and interpretation. The main aim was to conduct a retrospective audit to quantify the gaps and to improve the quality of practice.

Objective

To assess current practices of CTG documentation, to identify gaps in the current practice of documentation and to estimate current practices against standard practices.

Methodology

Records from 1st September 2021 to 30th November 2021 were analysed after obtaining consent from the hospital management. Each CTG was reviewed with standard view tools the NICE and SLCOG guidelines and data was analysed.

The audit tools utilised were Name of patient, Bed head Ticket no, Date, Maternal temperature, Pulse, base-line foetal heart rate, Accelerations, Decelerations, Variability and the Interpretation of CTG.

Results

A total of 97 CTG's were taken into consideration. The comment on the CTG was best documented in nearly 1/3rd. The baseline heart rate was recorded in 55%. Acceleration was documented in 56% while deceleration in 54%. Variability was documented in 58% of the entries.

Name of patient, bed head ticket number and date were documented in all patients (100%). Pulse recorded in 3/4th of the patients, while temperature was documented in 81%. Nearly 36% had all indicators documented, constituting one third of the population involved in the audit.

Conclusion

Gaps in documentation and interpreting of CTG were identified. Capacity building workshops, unit protocol for CTG documentation and use of checklists were proposed. A reaudit is planned in six months to establish change in practice.

EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION THERAPY ON REDUCING ANXIETY, STRESS AND IMPROVING PREGNANCY OUTCOMES IN PRIMIGRAVIDA ANTENATAL MOTHERS: A RANDOMIZED CONTROLLED TRIAL

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Introduction

Anxiety and stress during antenatal period cause many adverse effects on pregnancy outcomes; therefore require early screening and management.

Objective

Our objective was to evaluate effectiveness of progressive muscle relaxation therapy in reducing anxiety, stress and improving pregnancy outcomes among primigravida mothers in Badulla district.

Methods

A community-based cluster randomized controlled trial was conducted among 288 primigravida mothers in latter stage of second trimester who screened to have anxiety or stress or both (Anxiety Score > 16, Stress Score > 20) by Depression Anxiety Stress Scale-21 (DASS-21). Primigravida mothers numbering 144 were recruited to each intervention and control arms; 18 clusters from selected Medical Officer of Health areas in Badulla. Mean scores of anxiety and stress between intervention and control arms were compared at pre intervention and 6 weeks post intervention using independent sample t test and paired t test. Pregnancy outcomes were assessed in both arms at one month post-partum and relationship between stress, anxiety and pregnancy outcomes were determined calculating Pearson's correlation coefficient.

Results

No significant difference in anxiety and stress between two arms was identified at pre-intervention stage ($p>0.05$). Both anxiety and stress were significantly reduced in intervention arm after six weeks of intervention (Anxiety: $p<0.001$ and Stress: $p<0.001$). Both anxiety and stress were significantly increased in control arm after six weeks of recruitment (Anxiety: $p < 0.001$ and Stress: $p < 0.001$). Pregnancy outcomes at one month post-partum in two arms showed significant differences in caesarean section or assisted vaginal delivery (OR = 2.44; 95% CI = 1.34, 4.46), delivery of baby before 37 weeks of gestation (OR = 2.35; 95% CI = 1.31, 4.21), prolong labour (OR = 4.93; 95% CI = 1.05, 23.27) and experienced post-natal complications in babies (OR = 2.12; 95% CI = 1.03, 4.35) in the control arm compared to the intervention arm.

Conclusion

Progressive muscle relaxation therapy was effective in reducing anxiety, stress and improving pregnancy outcomes in primigravida mothers.

Key words - Anxiety, Stress, Progressive Muscle Relaxation, Primigravida mothers, pregnancy outcomes

AUDIT ON EVALUATION OF DECISION-TO-DELIVERY INTERVAL AND DECISION-TO-ARRIVAL TO THEATER IN EMERGENCY CESAREAN SECTION IN A TERTIARY CARE HOSPITAL IN SRI LANKA.

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Introduction

NICE guidelines recommend that "in cases of suspected or confirmed acute fetal compromise, delivery should be accomplished as soon as possible, accounting for the severity of the fetal heart rate abnormality and relevant maternal factors" (1) & proceeding with an emergency cesarean section less than 30 minutes interval from the time of decision making. Evidence shows poor fetal and maternal outcomes if a delay of more than75 min in the presence of maternal or fetal compromise (2).

Several factors can influence the decision-to-delivery interval(DDI). Those are related to obstetricians, anesthesiologists, and other staff, as well as lack of theater time and technological difficulties. But most of the factors can be avoidable.

Objectives

To take an idea about DDI and decision-to-arrival to the theater in the emergency cesarean section(CS) as well as to analyze whether the meantime for decision-to-delivery meets the current standards in ward 16 De Soysa Hospital Colombo.

Material and Methods

The data were collected retrospectively for the decision to arrive at the theater, reaching the anesthesia, and the DDI of the baby in all consecutive women undergoing emergency CS (Category 1,2 and 3) [12] for a period of 3months, which was defined as the study population (n = 92). The data collected for the study included age of the mother, parity, indications for CS, category of the urgency of CS, time of decision-making, time of transfer to operating theatre. The primary outcome measures of the study were duration to reach the theater from decision and decision to delivery interval. The DDIs for each category of cesarean sections were compared with recommended standards as part of an audit and quality improvement process. The data analysis was done with a simple analysis technique.

Results

The mean of the decision to the patient reaching the theater in the category 1 CS was 31 minutes and 1 second, the category 2 CS was 42 minutes and 1 second and category 3 CS was 51 minutes and 2 seconds. The mean of the decision to the delivery interval in category 1 CS was 52 minutes and 37 seconds, in category 2 CS was 74 minutes and 42 seconds and in category 3 CS was 79 minutes and 25 seconds.

Conclusion

In study sample, decision to delivery interval does not meet the current standards. According to results, improving the time delay when transferring patients to the theater will remarkably reduce the DDI and can improve the quality of care.

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NURSES' PERCEPTION AND PRACTICES OF ASSESSMENT AND MANAGEMENT OF NEONATAL PAIN. AN ISLAND WIDE SURVEY.

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Introduction

Newborns admitted to intensive care, undergo multiple painful interventions. Pain in the newborn is associated with acute and long-term negative consequences. However, despite the recommendations and guide-lines, research shows that neonatal pain is a neglected entity.

Objective

To assess the nurses' perception and practices regarding non-pharmacological pain management in neonates.

Methods

This is a cross-sectional, descriptive study. Data collection was done through a self-administered questionnaire circulated as a google form among nurses working newborn care units around the country. Nurses working exclusively in post-natal wards and mother-baby units were excluded. We expected to collect 100 responses. Ethical clearance was obtained from the hospital's ethics review board. Data were collected between June 2022 to August 2022 and were analyzed using SPSS.

Results

Altogether, 107 nurses from nine districts of the island responded to the google form. Majority (40.2%) of nurses have work experience of 1-5 years in a neonatal unit. 93% of nurses have never received training on neonatal pain management during their carrier. While 90% were aware of acute complications of pain, only 68.8% were aware that of long-term consequences. 39%

of participants have never used a pain assessment tool and 45% use it occasionally. 20-25% attend to pain management while performing intercostal tube insertion and intubation, while it is 65-70% for venipuncture, heel prick and 55% for lumbar puncture. Those who had knowledge on acute and long-term consequences of pain were more likely to use adequate measures to alleviate pain (p= 0.01 and 0.005 respectively). Knowledge and use of pain relieving measures when performing painful procedures were not associated with age, experience and availability of a protocol in the unit.

Conclusion

Neonatal pain is underestimated and use of measures to assess and control pain is insufficient. Majority of nurses lack training.

AUDIT ASSESSING THE KNOWLEDGE, ATTITUDES & PRACTICE OF PREVENTING HYPOTHERMIA IN NEWBORNS AT TH-MAHAMODARA.

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Introduction

Newborns (NB) especially preterms are more prone to hypothermia. Maintaining body temperature is critical for survival as hypothermia increases mortality & morbidity. Hypothermia(<36.5˚C/<97.7˚F) alone could increase risk of neonatal death. Standards of maintaining normothermia includes warm chain concept e.g. maintaining warm delivery room, skin-to-skin contact & breast feeding(BF) sooner. The key to manage hypothermia is recording temperature, early detection & rewarming where necessary. BF is 1 best way of preventing hypothermia & rewarming.

Objectives

- Set standards for management of hypothermia
- Pre intervention knowledge assessment of staff
- Audit Intervention by education
- Post intervention knowledge assessment
- Giving recommendations for improvement & consistency

Existing practice was assessed by using randomly selected 110 bed head tickets (last2weeks-July-2021). Obtained temperature recording at 1h after birth. This was done in 3 labour rooms&2 operating theatres and also on arrival at 3 Post-Natal(PN) wards. Temperature recording at NICU was obtained on 1random-ly selected day. Time taken to initiate BF was checked. Pre-education questionnaire was used to assess knowledge. Data were analysed to identify deficient areas. Education was done through lecturing & posters. Post-education-questionnaire was used to assess improvement. Re-Audit was done (last 2weeks-Octo-ber-2021) in the same manner.

Results

Pre-intervention overall knowledge was 90% & Post-intervention was 97%. At all delivery settings percentage of temperature checking at 1hour had improved. Among the 3 PN-wards only 1 postnatal ward showed improvement in documentation of

temperature on arrival. At all settings, time of commencing BF had improved.

Conclusion

Although knowledge was satisfactory its clinical application was deficient leading to suboptimal diagnosis of hypothermia. After educating &thereby changing attitude, commencing BF within 1 hour was improved. Inadequate number of nursing staff in PN-wards, made it difficult to check temperature on arrival. Therefore we recommend to practice the warm chain, to maintain condition of warmers regularly & to specify 1nursing-officer for each shift for recording temperature on arrival &also to add a cage for temperature recording on arrival to PN-ward in H-1162-form & suggest that temperature chart used should be1 that include hypothermic range.

Poster Presentation

Neurodevelopmental outcomes of infants referred to High-Risk Infant Follow-up (HRIF) program at a tertiary care centre

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Keywords : HINE; BSITD-III; GMs; Neurodevelopmental outcome; Infants

Introduction

The High-risk Infant Follow-up (HRIF) program aims for early detection and interventions for infants at risk of adverse neuro-developmental (ND) outcomes.

Objectives

This study aimed to examine the clinical and neuro-motor characteristics of the infants in HRIF and their ND outcomes at 9 months to 2 years of corrected age (CGA), referred to Ayati Centre.

Method

A retrospective descriptive cohort study of the infants recruited to HRIF program. Data of infants who had undergone standardized neuro-motor and developmental assessments such as General movement assessments (GMA), Hammersmith Infant Neurological Examination (HINE) at CGA 3 and 6 months, and Bayley Scales of Infant and Toddler Development-III (BSID-III) at CGA 9 to 24 months were selected from the clinic records. According to BSID-III, an index composite score of less than 85 was considered as having developmental concerns. No client identification data was used to protect privacy and confidentiality. Statistical analysis was carried out using SPSS version 22.0

Results

A total of 163 infants (90 males, and 73 females) fulfilled the inclusion criteria. Gestational age varied from 25 to 41 weeks (mean±SD of 35.33±4.382). Eighty-two infants (50.3%) were born preterm. The mean birth weight was 2.25(±0.921) kg. The mean CGA at presentation to the study setting was 20.71(±17.136) weeks. The most common risk factors were neonatal sepsis (57.4%), prematurity (50.3%), and low birth weight (48.8%).

In GMA during the writhing period, 19 infants (48.7%) had poor repertoire and 15 (38.5%) had cramp-synchronized movements. Forty-eight of 64 infants (75.0%) had absent fidgets. Of the assessed infants, 67.6% and 87.5% had abnormal scores on the HINE at CGA 3 and 6 months follow up respectively. At 3 months, 22 of the 27 infants with absent fidgets had HINE scores <57.

In infants who underwent BSID-III assessment at 9-24 months, 86 had typical development while 34 had developmental concerns in only one domain. Thirty-five infants were diagnosed with cerebral palsy and 32 had cortico-visual impairment. Social communication deficits were noted in 13 infants.

Conclusion

High-risk infants have many adverse neuro-developmental outcomes. With early intervention programs and protocols, these outcomes could be optimized.

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