"A STUDY ON PREVALENCE OF AUTISM SPECTRUM DISORDER AMONG TODDLERS BETWEEN HIGH-RISK BABY CLINIC AND WELL BABY CLINIC USING M-CHAT-R SCALE.A CROSS-SECTIONAL COMPARATIVE STUDY"

BY

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With reference to the above, we wish to inform you that your proposed research project titled **"A STUDY ON PREVALENCE OF AUTISM SPECTRUM DISORDER AMONG TODDLERS BETWEEN HIGH RISK BABY CLINIC AND WELL BABY CLINIC USING M CHAT- R SCALES A CROSS SECTIONAL COMPARATIVE STUDY."**, is ethical and justifiable. The proposed research project has been cleared by the JNMC Institutional Ethics Committee.

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LIST OF ABBREVIATIONS

ASD	Autism Spectrum Disorder
ADHD	Attention Deficit Hyperactivity Disorder
CARS	Childhood Autism Rating Scale
CPAP	Continuous positive airway pressure
DSM	Diagnostic Statistical Manual
FGR	Foetal growth restriction
GA	Gestational age
HRB	High Risk Baby
LBW	Low birth weight
LSCS	Lower Section Caesarean Section
NVD	Normal vaginal delivery
PE	Pre-eclampsia
WBC	Well Baby Clinic

ABSTRACT

"A STUDY ON PREVALENCE OF AUTISM SPECTRUM DISORDER AMONG TODDLERS BETWEEN HIGH-RISK BABY CLINIC AND WELL BABYCLINIC USING M-CHAT-R SCALE. ACROSS SECTIONAL COMPARATIVE STUDY."

INTRODUCTION: It is estimated that the global prevalence of Autism spectrum disorder has been raising, with rates now between 0.5% to 1%. In India and Southeast Aisa the prevalence is ranging from 0.09% to 1.07% among the children between 0-17 years. The Modified Checklist for Autism in Toddlers (M-CHAT) is one of the most widely used screening tools for ASD globally**.** The combined sensitivity of the M-CHAT(-R/F) was 0.83 (95% CI, 0.77-0.88), and the combined specificity was 0.94 (95% CI, 0.89-0.97). Low birth weight, preterm delivery , caesarean section are considered as the potential risk factors for ASD.

OBJECTIVES :

- **PRIMARY OBJECTIVES:** To study the prevalence of autism spectrum disorders in children aged between 16-24 months followed up at high-risk baby clinic and well-baby clinic in the tertiary care hospital using M-CHAT-R Scales.

- **SECONDARY OBJECTIVES:** To study the age at diagnosis, gender differentiation and perinatal risk factors of autism and other risk factors and to study the difference in the presentation of ASD between infants at HRB follow up clinic and Well baby clinic.

METHODS: A cross-sectional comparative study to know the prevalence of autism spectrum disorder (ASD) among 150 toddlers aged between 16-24 months, 75 each from High-risk baby clinic and well-baby clinic using M-CHAT-R scale at KLES Dr Prabhakar Kore Hospital. The child was labelled into Mild, Moderate and Severe.

RESULTS:

In our study, the gender distribution was male predominant, with 44 (58.67%) males in HRB and 51 (68%) in WBC, while females were 31 (41.33%) in HRB and 24 (32%) in WBC. Among all toddlers, only one female from HRB screened positive for ASD and was referred to a child psychiatrist.1 out of 75 from HRB showed high risk, with a p-value of 0.316. Regarding delivery mode, 13 (17.33%) from HRB and 44 (58.7%) from WBC were born vaginally, while 62 (82.67%) from HRB and 31 (41.33%) from WBC were born via caesarean. One HRB baby born via caesarean had a high-risk score, with a p-value of 0.857, statistically insignificant. Preterm birth and low birth weight (LBW) are risk factors for ASD Our study found a statistical significance in LBW with p-value <0.001, Neonatal sepsis was seen in 8% of HRB babies, with no significant link to ASD. Ventilation was required for 21 out of 75 HRB children (28%), with one showing high risk but p-value > 0.05. Inotrope usage showed a significant difference with p-value 0.003, with 6 (8%) HRB toddlers requiring inotropes and none in WBC.

CONCLUSION:

The study indicates that children attending the High-risk Baby (HRB) clinic are at a higher risk for ASD compared to those attending the Well-baby Clinic (WBC). Extremely low birth weight and preterm infants show a higher risk for ASD

compared to normal birth weight and term infants. Interestingly, females from the HRB clinic are at greater risk than males in the same clinic. Administering the M-CHAT questionnaire presented challenges, particularly with questions 2, 6, 9, 16, and 18, requiring proper demonstration and additional time for accurate responses from parents. The study highlights the difficulties of using M-CHAT for ASD screening in developing countries like India, where factors such as education status, multilingualism, and the need for proper training complicate the process, contrasting with the experience in Western countries.

Keywords: Autism spectrum disorder, High risk baby clinic, well baby clinic, M-CHAT-R scales.

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INTRODUCTION

Autism is classified as one of the five developmental disorders under pervasive developmental disorders (PDD). This group includes autism, Asperger's syndrome, Rett's disorder, Childhood Disintegrative Disorder, and Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS), the latter used when criteria for the other disorders are not fully met. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), autism spectrum disorder (ASD) involves persistent deficits in social communication and interaction, encompassing issues with social-emotional reciprocity, non-verbal communication, and relationship development and understanding.[1]

Globally, the prevalence of ASD has been rising, with rates now between 0.52% and 1.01% (Elssabbagh et al, 2012).[2] A review by (Anil Chouhan et al. 2019) found prevalence rates in India and Southeast Asia ranging from 0.09% to 1.07% among children aged 0-17 years.[3] Early detection and intervention are crucial for improving outcomes, and ASD can be identified as early as 24 months. Pediatricians often use the Modified Checklist for Autism in Toddlers, revised (M-CHAT-R) to screen children aged 16 to 30 months.

The M-CHATR Scale is a validated tool used for screening "Autism Spectrum Disorder" (ASD) in children aged 16 - 30 months. It consists of 20 yes/no questions that parents or guardians answer. The questionnaire has been translated into Kannada and Marathi for broader accessibility. A score below 3 indicates a negative screening result. For children under 24 months, it is recommended to repeat the screening at 24 months. If the score is between 3 and 7, a follow-up screening or referral to

psychiatrist for his evaluation is advised. Scores above 8 necessitate an immediate referral to a psychiatrist for further assessment and treatment.[34]

With the recent rise in the prevalence of autism spectrum disorder (ASD), early identification and intervention have become increasingly important. Early intervention can significantly improve the quality of life for individuals with ASD and their families. Pediatricians can utilize the M-CHAT-R Scale, a validated screening tool, to identify children at risk for ASD.

Pediatricians are often the first medical professionals to interact with children. They play a crucial role in the early identification of Autism Spectrum Disorder (ASD) and in making timely referrals to psychiatrists for early treatment.

NEED FOR THE STUDY

With the use of the M-CHAT-R scores, autism can be identified as early as 24 months. In this study we compared the prevalence of ASD between High-risk baby clinic and Well baby clinic and the associated risk factors. Pediatricians are often first medical professionals to interact with children and can refer the children to 'psychiatrist' for further evaluation.

AIM OF THE STUDY

1. To compare the prevalence of ASD using M CHAT-R scales among toddlers between High risk baby clinic and well-baby clinic.
2. To asses the associated perinatal and other risk factors by using M CHAT R scales.

OBJECTIVES

- **PRIMARY OBJECTIVES:**

1. To study the prevalence of autism spectrum disorders in children aged between 16-24 months followed up at high risk baby clinic and well-baby clinic in the tertiary care hospital using M-CHAT-R Scales.

- **SECONDARY OBJECTIVES:**

1. "To study the age at diagnosis, gender differentiation and perinatal risk factors of autism and other risk factors".

2. To study the difference in the presentation of ASD between infants at HRB follow up clinic and Well baby clinic.

REVIEW OF LITERATURE

HISTORY

Leading studies in child and adolescent psychiatry were carried out by American psychiatrist of Jewish origin Leo Kanner, MD (1894–1981), who specialized in "Early Infantile Autism." "Autistic Disturbances of Affective Contact," his landmark paper, was released in 1943. Based on his observations of 11 children, 8 males and 3 girls, Kanner came to the conclusion that these youngsters had "an inability to engage in typical social interactions and adapt to various situations from infancy" in his research.[1]

Similarly, Asperger Hans (1906–1980), German pediatrician, contributed to the understanding of autism through his 1944 paper, which echoed many of Kanner's findings. Asperger also identified these individuals as "autistic" and emphasized the difficulty in social interaction as a key characteristic of the disorder.[1]

EPIDEMIOLOGY

Before the 1980s, 'AUTISM' was a rare condition, affecting around 4 out of every 10,000 children. However, with the publication of the DSM-III, which is a manual used by doctors to diagnose mental disorders, the reported rates of pervasive developmental disorders, including autism, began to rise steadily worldwide.

After the DSM-IV was published, the reported prevalence of autism spectrum disorder (ASD) varied widely, ranging from 2.8 to 94 cases per 10,000 people.[2] The ratio of affected males to females was approximately 4 to 1.

Recent studies in India and other parts of Southeast Asia by (Anil Chauhan et al 2019) have found prevalence rates of ASD ranging from 0.09% to 1.07% among children aged 0 to 17 years.[3]

Several factors have been suggested to explain the increase in reported prevalence. These include broader diagnostic criteria, better understanding among doctors of how autism presents in young children and those with higher functioning levels, increased public awareness leading to earlier recognition, and the ability to diagnose autism alongside other conditions like ADHD or other mental disorders.

INCIDENCE AND PREVALENCE OF AUTISM SPECTRUM WESTERN PREVALENCE

'Autism spectrum disorder (ASD)' affects around one in every hundred people in western countries, although it affects significantly fewer people in underdeveloped countries (Fombonne, 2005; Williams et al., 2006; Elssabbagh et al., 2012).[4]

INDIAN PREVALENCE

A review included four studies done by (Anil Chauhan et al, 2019) .[3] One of these studies examined both urban and rural populations, while the remaining three focused exclusively on urban populations. The study in the rural setting reported a pooled prevalence rate of 0.11% (95% confidence interval [CI] 0.01–0.20) among children aged 1-18 years. The four studies conducted in urban settings showed a pooled prevalence rate of 0.09% (95% CI 0.02–0.16) among children aged 0-15 years.

A cross-sectional study BY DR Deepa c metgud ,2019 on 510 children in the age group of 16-30 months using cluster sampling in Anganwadi and play school

using M-CHAT-R scale. Prevalence was found to be 0.19% with prevalence found more in the upper middle class in the age group of 28-30 months .[5]

In 2016, S Ravi et al conducted a cross-sectional analytical study at a tertiary care teaching hospital, involving children aged 16-30 months and their mothers who were undergoing pediatric care. Out of the 350 children studied, 281 (80.28%) were identified as low risk, 36 (10.28%) as medium risk, and 33 (9.42%) as high risk for autism development. The study revealed that the group screening positive for autism had a significantly higher paternal age at the time of childbirth compared to the group that screened negative. Additionally, the study reported a higher prevalence of ASD at 9.42%, surpassing the global average.[6]

A cross-sectional two-way study, by Sk Raina et al., 2015. at the north west state of Himachal Pradesh, where they covered the children aged between 1-10 years using Indian scale for Assessment of Autism (ISAA), out of 11,000 children 53.6% and 44.63% of the studied population in the rural are belonged to the middle and lower middle class on SES. The overall result of their study showed a prevalence of 0.9/1000.[7]

RISK FACTORS FOR AUTISM

ENVIRONMENTAL RISK FACTORS

While considerable genetic role in autism is indicated by several family studies, as evidenced by greater concordance rates (up to 70%), the fact that the concordance rate is never 100% suggests that other factors may also contribute to the condition. This indicates the involvement of non-heritable factors in the etiology of autism.

Pre and perinatal risk factors have been a focus of autism research for over 40 years. Researchers have investigated various factors during pregnancy and around the time of birth that may influence the risk of autism in children. These factors include maternal infections, exposure to certain medications or toxins during pregnancy, complications during birth, and prenatal stress. Understanding the interplay between genetic and non-heritable factors is crucial for gaining a comprehensive understanding of autism spectrum disorder. [2]

STUDIES REGARDING ANTE NATAL, INTRA NATAL AND POSTNATAL RISK FACTORS

A comprehensive analysis of several epidemiological studies has identified several factors associated with an increased risk of autism spectrum disorder (ASD) (Gardener and Spiegelman et al 2009) .[8] These factors include:

1. Increased paternal age: Older fathers have been found to be associated with a higher risk of having children with autism.
2. Increased maternal age: Similarly, older mothers have also been linked to an increased risk of autism in their children.
3. Maternal immigration: Studies have suggested that mothers who immigrate to a new country may face increased risks for having children with autism.
4. Gestational bleeding: Bleeding during pregnancy has been identified as a potential risk factor for autism.
5. Gestational diabetes: Women with gestational diabetes, a condition that develops during pregnancy, may have a greater chances of having children with ‘Autism’.
6. Medication use: Certain medications used during pregnancy have been associated with an elevated risk of autism in offspring.

This meta-analysis provides valuable insights into the various prenatal and perinatal factors that may contribute to the development of autism. Understanding these risk factors is important for early identification and intervention strategies for children at risk for ASD.

ADVANCED PATERNAL AGE

Advanced paternal age is continuously highlighted as a highly repeated observation across various research, functioning as an independent risk factor for the emergence of autism spectrum disorder (ASD). Studies by (Pedersen CB, Lauritsen MB et al 2005; Reichenberg A et al. 2006; Gross et al 2006; Croen et al. 2002 Larsson HJ, Eaton et al 2005) have all found that advanced paternal age is associated with an increased risk of autism, even after controlling for confounding factors.[9-12] Specifically, paternal age over 35 years old is linked to a higher risk, with the risk doubling with each additional 10 years of age. Furthermore, paternal age above 50 years old has been found to further increase when compared to fathers under 30 years old.

However, when other influencing factors, such as higher maternal age, are taken into account, these findings fall short. They argue that increased paternal age is linked to a number of additional diseases, including 'Apert Syndrome' (Tolarona MM 1997), cleftt lip/palate, hydrocepholus (Savitz DA et al 1972), 'Down Syndrome, intellectual handicap, and schizophrenia'. Thus, older paternal age may not be the only factor influencing autism risk.[13]

Penrose et al 1955 proposed to explain the increased risk associated with advancing paternal age.[14] The Copy Error Hypothesis suggests that as spermatocytes

divide every 16 days after puberty, approximately 540 cell divisions would have occurred by age 35. This raises the chance of new genetic mutations caused by replication mistakes and weakened DNA repair systems. Furthermore, advanced paternal age has been linked to an increased occurrence of point mutations, new mutations, copy number variations (CNVs), gene imprinting irregularities, and epigenetic alterations (Shelton et al., 2010; Sandinet al., 2013).[13] These pathways contribute to the accumulation of genetic mutations, which may explain the higher risk of autism in children born to older fathers.

INCREASED MATERNAL AGE IN ASD

Studies by Sven Sandin and Hultman's in 2012, which reviewed approximately 16 comprehensive epidemiological studies, confirms that advanced maternal age is associated with an increased risk of autism spectrum disorder (ASD), independent of other factors. This analysis indicates that the risk of autism rises progressively with maternal age. For instance, mothers over 35 are 1.52 times more likely to have children with ASD compared to those aged 25-29, with a 95% confidence interval of 1.12-1.92. This finding is corroborated by the research of 'Eaton et al. (2001), Croen et al. (2002), and Glasson et al. (2004)'.[15-17]

Mixed results have been reported in studies by 'Lauritsen et al 2005[9] Reichenberg A et al 2006[10] and Larson et al. 2005'[18] suggest that the association between increased maternal age and autism may be confounded by increased paternal age, and after adjusting for confounding factors, this association may not hold.

Biological mechanisms underlying this association include the increased risk of chromosomal abnormalities associated with advanced maternal age. Additionally, trinucleotide repeats, which are known to be associated with certain genetic disorders including autism, have been found to increase As mothers age, the chance of anomalies increases (Pearson et al., 1998; Persico AM and Zhang, 2002).[13] Unlike normal-length repetitions, enlarged trinucleotide repeats become more unstable and longer with each generation, raising the possibility of defects. This proposes a genetic mechanism by which advanced maternal age may affect the likelihood of autism in offspring.

INCREASED MATERNAL IMMIGRATION

Kolevson et al [13]; Reichenberg et al. 2007[10]; Lauritsen and Pedersen 2005[12], Hultman CM SparenP 2002 [19]; and Gilberg 1996 [13]) have collectively indicated that maternal immigration increases the risk of autism spectrum disorder (ASD). Specifically, studies conducted in Nordic countries have shown that the offspring of parents who were born abroad face a heightened the prevalence of ASD, with an increase in risk of approximately 58%.

Several hypotheses have been proposed to explain the situation. Firstly, immigrant women might be more susceptible to prevalent diseases in their new environment due to insufficient immunity. Moreover, the stress associated with adapting to a new country could adversely affect pregnancy outcomes for these women. Furthermore, they may have limited social and emotional support networks in their new environment, which could further exacerbate stress levels during pregnancy. These factors combined may contribute to the increased risk of autism observed among offspring of immigrant mothers.[10-13]

MATERNAL DRUG USAGE

"Gardener et al 2009 [11]; Maimburg RD et al 2006" has indicated a greater association between maternal use of psychiatric drugs during pregnancy and autism spectrum disorder (ASD). Additionally, the usage of other drugs such as valproic acid (VPA), cholrpyrifos, misoprostol, ethanol, and thalidomide during pregnancy has also been linked to an increased risk of autism. These findings suggest that exposure to certain medications and substances during pregnancy may pose risks to fetal neurodevelopment and increase the likelihood of ASD.[20]

ENVIRONMENTAL CHEMICAL EFFECTS

A systematic review conducted by (De Cock et al. in 2012) evaluated the potential risk factors for the development of autism spectrum disorder (ASD), including exposure to "pesticides, phthalates, bisphenol A (BPA), and hazardous air pollutants in the environment". This review aimed to assess whether these environmental factors may contribute to the risk of ASD.[2]

The findings of this review provide insights into the potential role of environmental exposures in the development of ASD. It suggests that exposure to pesticides, phthalates, BPA, and hazardous air pollutants could potentially elevate the risk of autism. These environmental factors have been identified as potential contributors to the complex aetiology of ASD, highlighting the importance of further research in understanding the impact of environmental exposures on neurodevelopment and autism risk.

STUDIES REGARDING PERINATAL RISK FACTORS

Perinatal factors are discussed under the following headings:

- Antenatal factors:
    1. "Gestational Diabetes"
    2. "Hypertension during pregnancy"
    3. "Bleeding during pregnancy"
    4. "Previous number of pregnancies"
    5. "Abortion/Threatened abortion"
    6. "Maternal smoking during pregnancy"
    7. "Medication use during pregnancy"
- Natal and Neonatal factors:
    1. "Mode of delivery" (Caesarean section)
    2. "Foetal distress at birth indicated by a Low Apgar Score"
    3. "Pre/post maturity"
    4. "Low birth weight"
    5. "Small for Gestational Age" (SGA)
    6. "Congenital malformations"

STUDIES REGARDING HYPOXIA IN AUTISM

According to studies conducted by "Naeye et al. 1987[21]; Robertson et al.,[22] 1993" diseases such as gestational diabetes, high blood pressure, and haemorrhage during pregnancy, which are related with lower oxygen flow, may raise the risk of baby autism. Vulnerable brain areas, including the basal ganglia, hippocampus, and lateral ventricles, have been related to oxygen shortage. Several researchers have

argued that perinatal circumstances resulting in lower oxygen delivery to neonates may increase the likelihood of major cognitive and neuropsychiatric difficulties.

Studies by "Cannon, Rosso et al. 2000[23]; Seidman 2000[24]; Buka 2000[25]; Hultman et al. 2002[19]; Larsson 2005[18]" all showed evidence associating gestational diabetes to an increased likelihood of autism. Similarly, studies by "Brooke et al. 1989 show that preeclampsia may increase the risk of autism.[20] In addition, there is evidence associating bleeding during pregnancy "Hultman et al[19]., 2002; Eaton et al., 2001[15] and maternal smoking "Larsson et al., 2005[18] "to autism.

Furthermore, caesarean delivery "Hultman et al., 2002[19]; Glasson et al., 2004[17]" and low Apgar score (less than 7 at 5 minutes) have been identified as risk factors for autism development in early childhood "Eaton et al., 2001[15]; Hultman et al., 2002[19]; Larsson et al., 2004[25]; Finegan, 1979". Furthermore, congenital defects have been recognized as a risk factor for autism "Hultman et al. 2002".[19]

LOW BIRTH WEIGHT AS A RISK FACTOR FOR AUTISM

Low birth weight (LBW) serves as a marker for the development of later psychiatric and neurological conditions, as indicated by Breslau et al. in 1995. LBW, defined as less than 2500 grams or being SGA , has shown a greater association for developing autism, according to studies by "Larsson et al. 2002 and Hultman et al. 2002".[19] LBW children have been found to have a twofold increase in the risk of autism as compared with healthy controls, as demonstrated by (Hultman et al. 2002). Other studies supporting this association include those by "Gillberg et al. 1983; Cryan et al. 1996 and Eaton et al. 2005".[13] Low birth weight appears to increase the

incidence of autism more significantly in boys compared to girls, as observed by (Mason et al. 1990)[26].

However, some studies, by "Croen et al. 2002; Glasson et al. 2004"[13], did not found the correlation between LBW and autism. They argue that LBW is associated with various other conditions, such as "learning disabilities, intellectual disabilities, hyperactivity, speech and language problems, and attention problems", suggesting that LBW may not be a greater risk factor for autism.

Studies has not uniformly confirmed a strong correlation between the total pregnancies and the risk of autism. However, Bolton PF's study in 1997 noted an increased risk of autism in first-born children compared to their younger siblings, which may be related to adverse outcomes often encountered by first-time mothers.[27]

PRETERM GESTATION

Preterm delivery significantly increases the risk of developing autism spectrum disorder (ASD) compared to babies born at full term. Preterm babies are more likely to have low birth weight, which further adds to their vulnerability. Additionally, preterm babies are at a higher risk of experiencing intracranial hemorrhage, which can lead defects in neuro- development.

Preterm children with ASD exhibit more severe nonverbal behaviors compared to term children with ASD. This suggests that the combination of preterm birth and ASD may exacerbate behavioral challenges, emphasizing the importance of early intervention and support for preterm infants at risk for ASD.

BREAST FEEDING INFLUENCES ONTHE PREVALENCE OF AUTISM

According to "Ravi et al. (2016)", children who were exclusively breastfed for the first six months had a lower incidence of autism spectrum disorders (ASD) compared to those who were not exclusively breastfed during this period. Children who experienced suboptimal breastfeeding were more susceptible to ASD than their siblings who were adequately breastfed (Harshini Manohar et al., 2018).[28] The gut microbiota plays a crucial role in the development of the immune system and neural pathways, with immunological mechanisms potentially contributing to the onset of ASD.

GENDER DISTRIBUTION

Similar to other neurodevelopmental disorders, autism is more frequently observed in boys, with a male-to-female ratio of around 4 to 1. A study by (Fombone et al 2005)[29] on clinical samples indicate even higher ratios, ranging from 4 to 6 boys for every girl, while community-based studies report lower ratios, typically around 2 to 3 boys for every girl.

One possible reason for this gender difference is that autism might be less readily identified in girls with higher cognitive abilities. It's unclear whether boys have a lower threshold for brain dysfunction compared to girls, or if more severe brain damage is necessary to trigger autism in girls (Amietet et al.[30]

SOCIAL CLASS

In the past, studies done by (Fombonne et al ; Bennedsen et al 1998 and Brooke et al) suggested that autism was more prevalent among children from higher socioeconomic backgrounds.[2] This was thought to be because educated parents were

more likely to seek diagnosis and treatment for their children, leading to an underrepresentation of children from lower socioeconomic classes. However, recent studies have contradicted these earlier findings, showing no significant association between autism prevalence and higher social class. It's now understood that autism occurs across all social classes and in every country.

Interestingly, studies have found that mothers from lower socioeconomic backgrounds tend to experience more adverse pregnancy outcomes, which can increase the risk in their children.

CLINICAL CHARACTERISTICS REGARDING AUTISM

"DIAGNOSTIC CRITERIA FOR AUSTISM SPECTRUM DISORDERS"[1]

According to DSM V

1. "Persistent deficits regarding social communication and social interaction associated with history or by multiple contexts"

- "Deficits in social emotional reciprocity".
- "Deficits in nonverbal communicative behaviors used for social interaction".
- "Deficits in developing, maintaining, and understanding relationships".

2. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least 2 of following, currently or by history"

- Stereotyped or repetitive motor movements, use of objects, or speech.
- Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior.
- Highly restricted, fixated interests that is abnormal in intensity or focus.

- Hyper or hypo-reactivity to sensory input or unusual interest in sensory aspects of the environment.

3. "Symptoms must be present in the early developmental period".
4. "Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning".
5. "These disturbances are not better explained by intellectual disability or global developmental delay".

AGE OF ONSET

The disease spectrum typically manifests before the age of 3 years. One of the primary concerns for parents is a delay in language development or the complete absence of language skills in their child, prompting them to seek professional consultation. Despite exhibiting normal hearing, the child may struggle with language acquisition, although they may respond well sounds in their environment.

In approximately 20.13vto 25.64% of cases, children with ASD may initially develop some language skills, but their further development may plateau or regress over time. However, it's important to note that true regressive autism, characterized by a sudden onset of symptoms in a child who was previously developing normally, is relatively rare.

RED FLAG SIGNS [1]

Children displaying the following signs should undergo evaluation for autism:

1. Lack of babbling by 12 months of age.
2. Absence of gesturing, such as pointing or waving bye-bye, by 12 months.
3. Failure to produce single words by 16 months.
4. Inability to form two-word spontaneous phrases by 24 months.
5. Any loss of language or social skills at any age.

These indicators are crucial for identifying potential developmental delays or concerns related to autism spectrum disorder (ASD) and warrant professional evaluation to ensure appropriate support and intervention.

AGE OF DIAGNOSIS

Females having autism tend to be identified and diagnosed later than male "Begeer et al 2013[31]; Russell et al 2011" primarily because many of them present with high-functioning autism and their symptoms may be less noticeable or different from the stereotypical presentation of autism. This delayed diagnosis often leads to their needs going unrecognized for a significant period. In cases of severe autism among females, the diagnosis may be further complicated by the presence of co-morbid conditions such as intellectual disability, anxiety, depression, or other neurological conditions. These co-existing conditions can overshadow the core symptoms of autism and result in misdiagnosis or delayed recognition of autism spectrum disorder.[31]

SCREENING AND DIAGNOSTIC TOOLS OF AUTISM SPECTRUM DISORDERS

"ASD-specific symptom screening according to DSM criteria in primary care or general medical settings (Level 1) can be conducted using well-validated checklists" (Helena Brentani et al 2013).[33]

These include

- Developmental Behavioral Checklist-Parent (DBCP),
- Modified Checklist for Autism in Toddlers (M-CHAT),
- Autism Behavior Checklist (ABC), and
- Autism Screening Questionnaire (ASQ)

AUTISM DETECTION USING CHAT

Simon Baron – Cohen PhD et al., 2001 done pioneering work in early detection of autism spectrum disorders, which is to be detected later in the childhood and they designed screening tool called CHAT.[34] The Checklist for Autism in Toddlers (CHAT) is a screening tool designed to predict the risk of autism in children who does not show joint attention and pretend play by 18 months of age. This questionnaire, which takes about 5-10 minutes to complete, is easy to score. Its questions are structured to avoid yes/no biases, ensuring a more accurate assessment. CHAT is as follows, in section A of the CHAT, the health visitor or general practitioner asks the parent nine questions. In section B, the practitioner directly observes and completes five key items focused on joint attention and pretend play. These key items in section B are used to validate the parent's responses from section A by cross-checking them. The non-key items in the questionnaire provide additional

information to help differentiate an autism-specific profile from a more general developmental delay.

M-CHAT

The Checklist for Autism in Toddlers (CHAT; Baron-Cohen, Allen, & Gillberg, 1992) was expanded upon by Deborah Fein et al. (2001) with the CHAT. With permission from the authors, the first nine elements from the CHAT are included in the M-CHAT along with the same format.

All children can receive this easy-to-use screening tool during their pediatric checkups. Rather of relying on the doctor's observations, it depends on parents' descriptions of their child's present abilities and behaviors. Because of its straightforward design, parents can finish the checklist while they wait, saving the doctor from having to give it to them directly. Additionally, parents of children who have previously been referred for early intervention treatment may use the M-CHAT. Screening for autism and PDD is part of the Connecticut Early Intervention (EI) system.[40]

COMPARSION OF ORGINAL CHAT AND M CHAT

The initial nine CHAT items were used in a discriminant function analysis. Of the 1,233 participants who were not autistic, 27 were mistakenly identified as having PDD or autism. Eight children were tested and determined not to be autistic, five children were not followed up with, fourteen had phone follow-ups, and five children were not followed up with. Furthermore, four children with a clinical diagnosis of autism/PDD were incorrectly labeled as non-autistic. A sensitivity of.87, specificity of.98, positive predictive power (PPP) of.63, and negative predictive power (NPP)

of.99 were obtained by using a cutoff score of two failed items (Table VII). (Fein et al., Robins, 2001).[36]

STUDIES ON M- CHAT-R/F

Diana L. Robins, PhD, Karis Casagrande, BS, Marianne Barton, PhD, et al; 2014 demonstrates the validity of the Modified Checklist for Autism in Toddlers, Revised with Follow-up (M-CHAT-R/F), a low-risk toddler screening tool. shows it to be more effective than the original M-CHAT.[37]

The Modified Checklist for Autism in Toddlers (M-CHAT) is one of the most widely used screening tools for ASD globally. It offers an accessible and low-cost option for universal toddler screening. The M-CHAT with Follow-Up (M-CHAT/F) has demonstrated adequate sensitivity and specificity. In a study of nearly 19,000 toddlers aged 16 to 30 months, 54% of those classified as at risk based on the M-CHAT/F were diagnosed with ASD, and 98% of screen-positive cases showed developmental delays or concerns. The M-CHAT was revised to reduce the number of initial screen-positive cases requiring follow-up, while maintaining high sensitivity.

The M-CHAT-R/F is a questionnaire which consists of 20 questions where parents have to answer yes/no based on the attained scores the child was labelled as low risk (<2/20), moderate risk (3-7) and high risk (>8/20). The moderate risk and high-risk toddlers were reviewed with the follow up after 3 months and were reassessed, based on the score if they still between moderate and high risk they were further referred to child psychiatrist.

SENSTIVITY AND SPECIFICITY OF M-CHAT-R/F

In a study done by Andrea Trubanova wieckowski et al 2023 analyzed "50 studies encompassing 51 samples.[38] The combined sensitivity of the M-CHAT(-R/F) was 0.83 (95% CI, 0.77-0.88), and the combined specificity was 0.94 (95% CI, 0.89-0.97). Heterogeneity analyses indicated that diagnostic accuracy was higher for low-likelihood samples compared to high-likelihood samples," when using a concurrent rather than a prospective case confirmation strategy, for larger sample sizes, with the utilization of the M CHAT R Follow-up, and for non English samples compared to English only samples.

In studies done by (Teck-Hock Toh et al 2017); assessed the accuracy of the Modified Checklist for Autism in Toddlers (M-CHAT) in identifying toddlers with autism spectrum disorder (ASD) and other developmental disorders (DD) in community mother and child health clinics. Overall sensitivities for detecting ASD and all DD were low but improved in the 21 to <27 months and 27-36 months age groups (54.5-64.3%).[39]

Although the positive predictive value (PPV) for ASD was low, especially in the younger cohort, a positive M-CHAT result was effective in identifying all DD (PPV=81.6%). This indicates that the M-CHAT is accurate for screening ASD in older toddlers (>21 months) and is a useful tool for detecting all DD.

Children identified as high-risk for ASD based on initial screening should undergo more in-depth assessments (Level 2), which include:[33]

"The Childhood Autism Rating Scale (CARS)": Used for detailed assessment of autism symptoms.[40]

1. **Evaluation of Social Abilities and Adaptive Skills:** While parents can complete the Vineland Adaptive Behavior Scales (Vineland-II, 2nd edition) to assess adaptive capabilities, clinicians can also administer the Social Responsiveness Scale (SRS), which provides insights into social capacities.[42]
2. **"Screening for Maladaptive Behaviors and Comorbid Problems":** The Aberrant Behavior Checklist-Community Version (ABC-CV) is a useful tool for parents and caregivers to assess issues with behaviors like impulsivity, irritability, aggressive behavior, temper tantrums, self-harm, and signs of mood disorders and anxiety.
3. **"Screening for Medical Comorbidities":** This includes a medical history regarding growth anomalies, intestinal problems, epilepsy, and elimination disorders. There is no consensus on the right tests, despite the increasing prevalence of medical testing for ASD assessment. For example, electroencephalogram testing may be considered, as the comorbid epilepsy rate in ASD ranges from 15-30%. Neurologist assessment is recommended if epilepsy is present.
4. **Screening for Genetic Syndromes Associated with Autism:** This involves looking at family history, dysmorphic features, head size, café au lait spots, and inherited metabolic disorders. People with mild abnormalities in their appearance, syndromic traits, intellectual challenges. or a family history should consider genetic testing. With the growing field of molecular genetic testing, several experts now advise whole-exome sequencing or comparative genomic hybridization for individuals with ASD diagnoses.[44]

DIAGNOSTIC INSTRUMENTS

There are various kinds of diagnostic instruments these include

Autism Diagnostic Observation Schedule (ADOS) [45]the Autism Diagnostic Interview, Revised (ADI-R)[46]

The Autism Diagnostic Observation Schedule (ADOS) and the Autism Diagnostic Interview, Revised (ADI-R) are considered the gold standard for diagnosing Autism Spectrum Disorder (ASD) due to their comprehensive detail and reliability.

For these tools to be administered accurately, raters must be trained. The original ADI was created for research purposes and evaluated people who were at least 5 years old and had a mental and chronological age range of a minimum of two years. It followed the DSM-IV and ICD-10 diagnostic criteria. Later updates to the ADI-R made it suitable for children whose mental ages were from 18 months to adulthood.[45]

The ADOS is a 45-minute semi-structured interview that a clinician uses to evaluate a variety of features particular to ASDs, such as conversational skills, reciprocal engagement, and verbal and nonverbal communication. With a special module for toddlers and Modules 1-4 for kids, teens, and adults, it offers multiple modules tailored to age groups, linguistic proficiency, and developmental stages.[46]

INDIAN HISTORY IN AUTISM

Savita Malhotra's work, particularly in collaboration with Ashis Vikas[69], has been instrumental in advancing autism research in India. Their review article "Pervasive Developmental Disorders: Indian Scene" provides a comprehensive overview of studies conducted on autism in India.[47-53]

The review concludes the level of prevalence of autism in India and that the clinical manifestations of autism in Indian children was similar to that observed in developed countries. Importantly, the article highlights the increasing awareness of autism in India, leading to more cases being diagnosed in recent past. This indicates growing recognition in the importance of early detection and intervention for autism spectrum disorders in the Indian context.

Girimaji SR and Biju et al.'s 2005 study provided important new information about the frequency of co-morbid psychiatric problems in Indian children with autism. Their findings showed that co-morbid psychiatric disorders affected about 46% of children with autism. “Attention deficit hyperactivity disorder (ADHD)”, “bipolar affective disorder”, “anxiety disorders (including obsessive-compulsive disorder)”, and circadian sleep abnormalities were among the prevalent co-morbidities found.[54]

This study sheds light on the complex clinical presentation of autism spectrum disorders and emphasizes the importance of addressing co-existing psychiatric conditions in the management and treatment of autistic children. Such research contributes significantly to our understanding of the challenges faced by individuals with autism and underscores the need for comprehensive, multidisciplinary approaches to their care**.**

The 2011 review paper by Vijay Sagar KJ et al. offered a thorough summary of Indian research on autism spectrum disorders (ASD). The clinical profile, grading scales, genetics, neuroscience, treatment, and outcome were among the many facets of ASD research that were reviewed in the paper.[55]

One significant aspect highlighted in the review was the use of the "Childhood Autism Rating Scale" (CARS) as a diagnostic tool in Indian children. The authors mentioned that cutoff score of 33 or more on the CARS indicates the suspicion of Autism in Indian children, aligning with diagnostic practices in other regions.[55]

MATERIALS AND METHODS

METHODOLOGY

Source of Data: children between the age of 16 to 24 months, visiting High risk baby [HRB] clinic and well-baby clinic i.e., Paediatric OPD clinic of KLE's Dr Prabhakar Kore Hospital, was be enrolled in the study.

Study Design: A Cross Sectional Comparative Study.

Study Period: ONE YEAR

Sample Size:

Formula used for sample size calculation is

$$n = \frac{2 * (Z_{1-\frac{\alpha}{2}} + Z_{1-\beta})^2 * P(1-P)}{(p_1 - p_2)^2}$$

n is the sample size required,

p1 & p2 is the sensitivity/specificity in both group 1 and group 2 respectively, P is pooled sensitivity, $Z_{1-\frac{\alpha}{2}}$ and $Z_{1-\beta}$ is the normal value corresponding to confidence level and power respectively.

Since there was no previous study done, by assuming $(p_1 - p_2)/\sqrt{P(1-P)}$ as 0.5 and with 95% confidence level and 80%, the sample size will be,

$$n = 2 * \frac{(1.96 + 0.84)^2}{0.5^2}$$

n=62.72 ≈63 per each group

Sampling technique:

This cross-sectional comparative study was conducted in the pediatrics department at KLE'S DR Prabhakar Kore Hospital, Belagavi, a teaching hospital for tertiary care. The cross-sectional comparison study's study population consists of mothers and children aged 16 to 24 months who visit the high-risk baby clinic after being discharged from the NICU based on the CDC's criteria for moderate, severe grades and the well-baby clinic for a year. The goal of the project is to use MCHAT-R to identify the risk factors for ASD and to evaluate the risk variables that are associated with the risk of developing ASD in toddlers. Every toddler whom we were included was accompanied by a minimum of one responsible parent who speaks Hindi, English, Marathi, and Kannada.

TOOL USED: Data had been collected in their own vernacular language utilizing a structured proforma. M CHATR: This straightforward instrument is thought to be useful for identifying children who may be at risk for ASD early on. It is a list of twenty typical child behaviors that are seen frequently. In order to report on the existence of particular kid behaviors, the mother must select YES or NO on the check box. A score of one was given for the presence of anomalous behavior, and the overall score was interpreted. based on the response marks that were assigned. Screening with a score of ≤ 2 was negative. Review with the follow-up screening if the score is between 3 and 7, or recommend seeing a psychiatrist for additional testing. If the score is higher than 8, the toddler was referred to a psychiatrist. Next, they were followed up.

Inclusion Criteria:

"Children age between 16 to 24 months who is attending the High-risk baby clinic and Well baby clinic Outpatient Department (OPD) in KLE Dr Prabhakar kore Hospital, Belagavi, Karnataka. Those children for whom informed consent is obtained from parents".

Exclusion Criteria:

1. "Children with any congenital anomalies are excluded".

2. "Those children for whom informed consent has not been obtained".

Study protocol:

After getting ethical consent, children aged between 16-24 months and their mother attends the high-risk baby clinic who is discharge from NICU under CDC criteria of moderate and severe grade and well-baby clinic of KLE Dr Prabhakar Kore Charitable Hospital & Medical Research Centre affiliated to KLE Academy of Higher Education and Research's JN Medical College, Belagavi and who fulfill inclusion criteria will be chosen. After detailed history, informed consent will be obtained from the parents after explaining the purpose of the study.

M CHAT-R: This easy questionnaire is thought to be useful for identifying children who may be at risk for ASD early on. It is a list of twenty typical child behaviors that are seen frequently. I received one month of training under the direction of a child psychologist in order to get admitted. In order to report on the existence of particular kid behaviors, the mother must select YES or NO on the check box. A score of one was given for the presence of anomalous behavior, and the overall score was

interpreted. Scored in accordance with the response marks. A screening score of 0–2 was considered negative. If the result is between 3 and 7, repeat the test one month later, or enlist the assistance of a child psychiatrist for a confirmatory study using CARS. Perform a confirmatory test if you score higher than 8. After that, they must be evaluated using a diagnostic test similar to Childhood. with the assistance of a child psychiatrist, the Autism Rating Score (CARS).

Data collection procedure: After obtaining consent detailed information from the parents of the children attending to the HRB clinic and well-baby clinic of the KLE Dr. Prabhakar Kore hospital was noted in the proforma in their vernacular language using M CHAT R scales and the respective scores will be given.

Data processing and analysis/statistical analysis: For quantitative variables, descriptive analysis was performed using mean and standard deviation; for categorical variables, it was done using frequency and percentage. Additionally, data was shown using the proper designs, such as box plots, pie charts, and bar charts.

For normally distributed data (parametric data), The association between categorical explanatory variables and quantitative outcome was assessed by comparing the mean values using independent sample t-test (2 groups) to assess statistical significance.

P value < 0.05 was considered statistically significant. IBM SPSS version 22 was used for statistical analysis. (1)

1. IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.

RESULTS AND ANALYSIS

Table 1: Comparison of Gender between study group and M CHAT Score

Study Group	Gender (N=150)	n (%)		M CHAT Score (N=75)			Chi-square	P-value
				0 (N=70)	**2 (N=4)**	**10.00 (N=1)**		
High Risk Baby Clinic (N=75)	Male	44 (58.67%)	**Chi-square = 1.407 & P-value = 0.236**	42 (60%)	2 (50%)	0 (0%)	1.595	0.451
	Female	31 (41.33%)		28 (40%)	2 (50%)	1 (100%)		
				0 (N=75)	**2 (N=0)**	**10.00 (N=0)**		
Well Baby Clinic (N=75)	Male	51 (68%)		51 (68%)	-	-	-	-
	Female	24 (32%)		24 (32%)	-	-		

Table 1 shows the gender distribution and comparison of M-CHAT scores, it shows that in HRB 44(58.67%) are males and 31(41.33%) are females and in well baby clinic 51(68%) are males and 24(32%) are females. When compare with M-CHAT scores there is no statistical significance, p value is 0.451.

Figure 1: Cluster bar graph of comparison of Gender between study group (N=150)

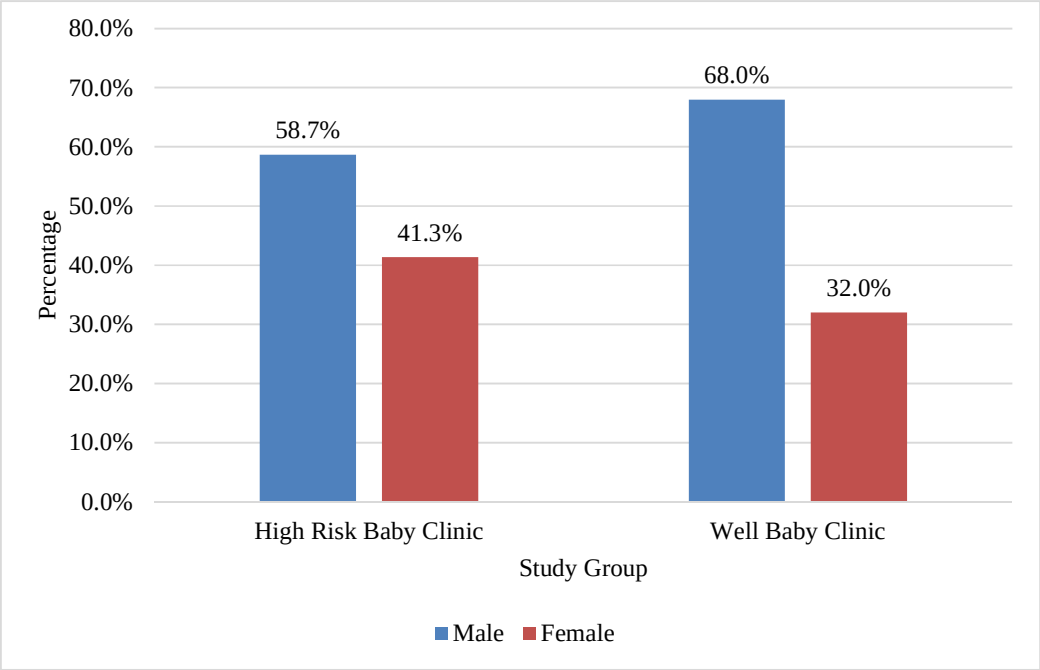

Figure 1 Bar graph shows the gender distribution between the High-risk baby clinic and Well baby clinic which shows that 58.7% of HRB babies are males and 41.3% are females and 68% in WBC are males and 32% in WBC are females.

Table 2: Comparison of mean of father and mother age between study group (N=150)

Parameter	Study Group (Mean± SD)		P value
	High Risk Baby Clinic (N=75)	Well Baby Clinic (N=75)	
Father Age (years)	32.71 ± 4.88	31.85 ± 3.28	0.211
Mother Age (years)	27.89 ± 4.04	28.05 ± 3.28	0.790

Table 2 show the comparison of mean age of parents between the HRB and WBC and the p value between the two groups. The mean paternal age of HRB clinic is 32.71±4.88 and mean maternal age is 27.89±4.04. The mean paternal age of WBC is 31.85±3.28 and mean maternal age is 28.05±3.28.

Table 3: Comparison of mean of child age (months) and birth weight (grams) between study group (N=150)

Parameter	Study Group (Mean± SD)		P value
	High Risk Baby Clinic (N=75)	Well Baby Clinic (N=75)	
Child Age (months)	19.31 ± 1.83	19.23 ± 2.02	0.800
Birth Weight (grams)	1802.89 ± 608.29	2856.68 ± 335.76	<0.001

Table 3 show the comparison of child age and birth weight between high-risk baby clinic and well-baby clinic the mean age of child in HRB is 19.31±1.83 and WBC is 19.23±2.02, mean birth weight was 1802±608.29 and 2856.68±335.76 of HRB and WBC respectively. In the above table the P value between the birth weight is <0.001 which is significant.

Table 4: Comparison of POG between study group and M CHAT Score

Study Group	POG (N=150)	n (%)		M CHAT Score (N=75)			Chi-square	P-value
				0 (N=70)	**2 (N=4)**	**10.00 (N=1)**		
High Risk Baby Clinic (N=75)	< 32 wks.	15 (20%)		13 (18.57%)	1 (25%)	1 (100%)	5.530	0.478
	32 wks. +1 day - 36 wks. + 6 days	41 (54.67%)		38 (54.29%)	3 (75%)	0 (0%)		
	37 wks. - 38 wks. + 6 days	17 (22.67%)	**Chi-square = 95.039 & P-value = <0.001**	17 (24.29%)	0 (0%)	0 (0%)		
	39 wks. - 40 wks. + 6 days	2 (2.67%)		2 (2.86%)	0 (0%)	0 (0%)		
				0 (N=75)	**2 (N=0)**	**10.00 (N=0)**		
Well Baby Clinic (N=75)	< 32 wks.	0 (0%)		0 (0%)	-	-	-	-
	32 wks. +1 day - 36 wks. + 6 days	1 (1.33%)		1 (1.33%)	-	-		
	37 wks. - 38 wks. + 6 days	30 (40%)		30 (40%)	-	-		
	39 wks. - 40 wks. + 6 days	44 (58.67%)		44 (58.67%)	-	-		

Table 4 show the comparison between the period of gestation of HRB, WBC and their respective M-CHAT scores. Among HRB babies 25% of the babies are TERM and 1.33% of WBC are preterm. HRB clinic toddlers < 32 weeks were 15 (20 %), 32 weeks + 1 day – 36 weeks+6days were 41 (54.67%), 37 weeks – 38 weeks+6days were 17(22.67%), 39 weeks – 40 weeks+6days were 2(2.67%) compared to Well Baby clinic toddlers were < 32 weeks were 0 (0 %), 32 weeks + 1 day – 36 weeks+6days were 1(1.33%), 37 weeks – 38 weeks+6days were 30(40%), 39 weeks – 40 weeks+6days were 44(58.67%). There p value between the groups is <0.001 which is significant. But when compared to their M-CHAT score there is no statistical significance.

Figure 2: Cluster bar graph of comparison of POG across M-CHAT score (N=75)

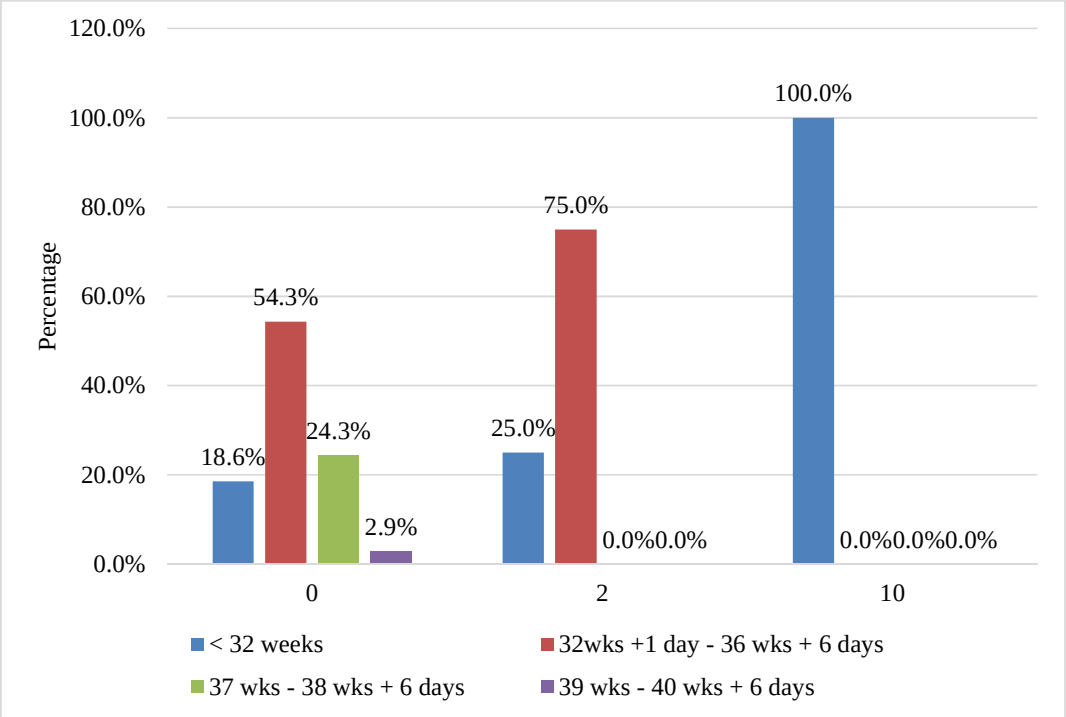

Figure 2: Bar graph show the comparison between period of gestation and their respective M-CHAT scores.

Table 5: Comparison of mode of delivery between study group and M CHAT Score

Study Group	**Mode of Delivery (N=150)**	**n (%)**		**M CHAT Score (N=75)**			**Chi-square**	**P-value**
				0 (N=70)	**2 (N=4)**	**10.00 (N=1)**		
High Risk Baby Clinic (N=75)	Assisted Vaginal Delivery	2 (2.67%)	**Chi-square = 50.33 & P-value = <0.001**	2 (2.86%)	0 (0%)	0 (0%)	2.590	0.857
	Elective LSCS	6 (8%)		5 (7.14%)	1 (25%)	0 (0%)		
	Emergency LSCS	56 (74.67%)		53 (75.71%)	2 (50%)	1 (100%)		
	Normal Vaginal Delivery	11 (14.67%)		10 (14.29%)	1 (25%)	0 (0%)		
				0 (N=75)	**2 (N=0)**	**10.00 (N=0)**		
Well Baby Clinic (N=75)	Assisted Vaginal Delivery	0 (0%)		0 (0%)	-	-	-	-
	Elective LSCS	16 (21.33%)		16 (21.33%)	-	-		
	Emergency LSCS	15 (20%)		15 (20%)	-	-		
	Normal Vaginal Delivery	44 (58.67%)		44 (58.67%)	-	-		

The above table shows the comparison between the mode of delivery and the respective M-CHAT scores. In High-risk baby clinic 83% of the babies are born via caesarean section and 17% are born via vaginal delivery. In Well baby clinic 58.67 % are born via normal vaginal delivery and 41.33% are born via caesarean section. The p value between the two groups is <0.001, but when compared with their M-CHAT the p value is 0.857 which is statistically insignificant.

Figure 3: Cluster bar graph of comparison of mode of delivery and M CHAT score (N=75)

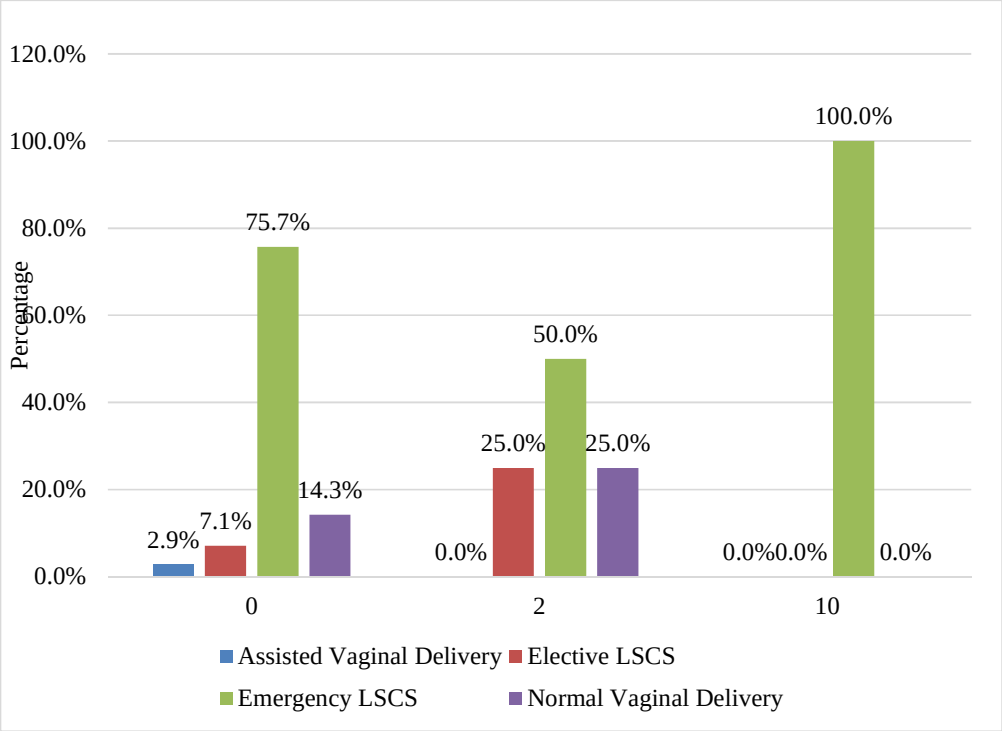

Figure 3: Bar graph shows the comparison between the mode of delivery and M-CHAT scores.

Table 6: Comparison of indication between study group and M CHAT Score

Study Group	Indication (N=150)	n (%)		M CHAT Score (N=75)			Chi-square	P-value
				0 (N=70)	2 (N=4)	10.00 (N=1)		
High Risk Baby Clinic (N=75)	FGR with Resistance on Doppler	7 (9.33%)	Chi-square = 56.66 & P-value = <0.001	6 (8.57%)	1 (25%)	0 (0%)	7.206	0.969
	Malpresentation	6 (8%)		6 (8.57%)	0 (0%)	0 (0%)		
	Maternal Request	0 (0%)		0 (0%)	0 (0%)	0 (0%)		
	Non-Progression of Labour	0 (0%)		0 (0%)	0 (0%)	0 (0%)		
	Oligohydramnios With FGR	8 (10.67%)		8 (11.43%)	0 (0%)	0 (0%)		
	Pre-Eclampsia	17 (22.67%)		15 (21.43%)	1 (25%)	1 (100%)		
	Previous LSCS	3 (4%)		3 (4.29%)	0 (0%)	0 (0%)		
	PV Leak	10 (13.33%)		9 (12.86%)	1 (25%)	0 (0%)		
	Respiratory Distress	5 (6.67%)		5 (7.14%)	0 (0%)	0 (0%)		
	Twin Delivery	9 (12%)		9 (12.86%)	0 (0%)	0 (0%)		
	No Indication	10 (13.33%)		**0 (N=75)**	**2 (N=0)**	**10.00 (N=0)**		
Well Baby Clinic (N=75)	FGR with Resistance on Doppler	3 (4%)		3 (4%)	-	-	-	-
	Malpresentation	2 (2.67%)		2 (2.67%)	-	-		
	Maternal Request	5 (6.67%)		5 (6.67%)	-	-		
	Non-Progression of Labour	2 (2.67%)		2 (2.67%)	-	-		
	Oligohydramnios With FGR	2 (2.67%)		2 (2.67%)				
	Pre-Eclampsia	5 (6.67%)		5 (6.67%)				
	Previous LSCS	5 (6.67%)		5 (6.67%)				
	PV Leak	2 (2.67%)		2 (2.67%)				
	Respiratory Distress	1 (1.33%)		1 (1.33%)				
	Twin Delivery	1 (1.33%)		1 (1.33%)				
	No Indication	47 (62.67%)		47 (62.67%)				

The above table shows the comparison indication of delivery and M-CHAT scores

Figure 4: Cluster bar graph of comparison of indication across M-CHAT score (N=75)

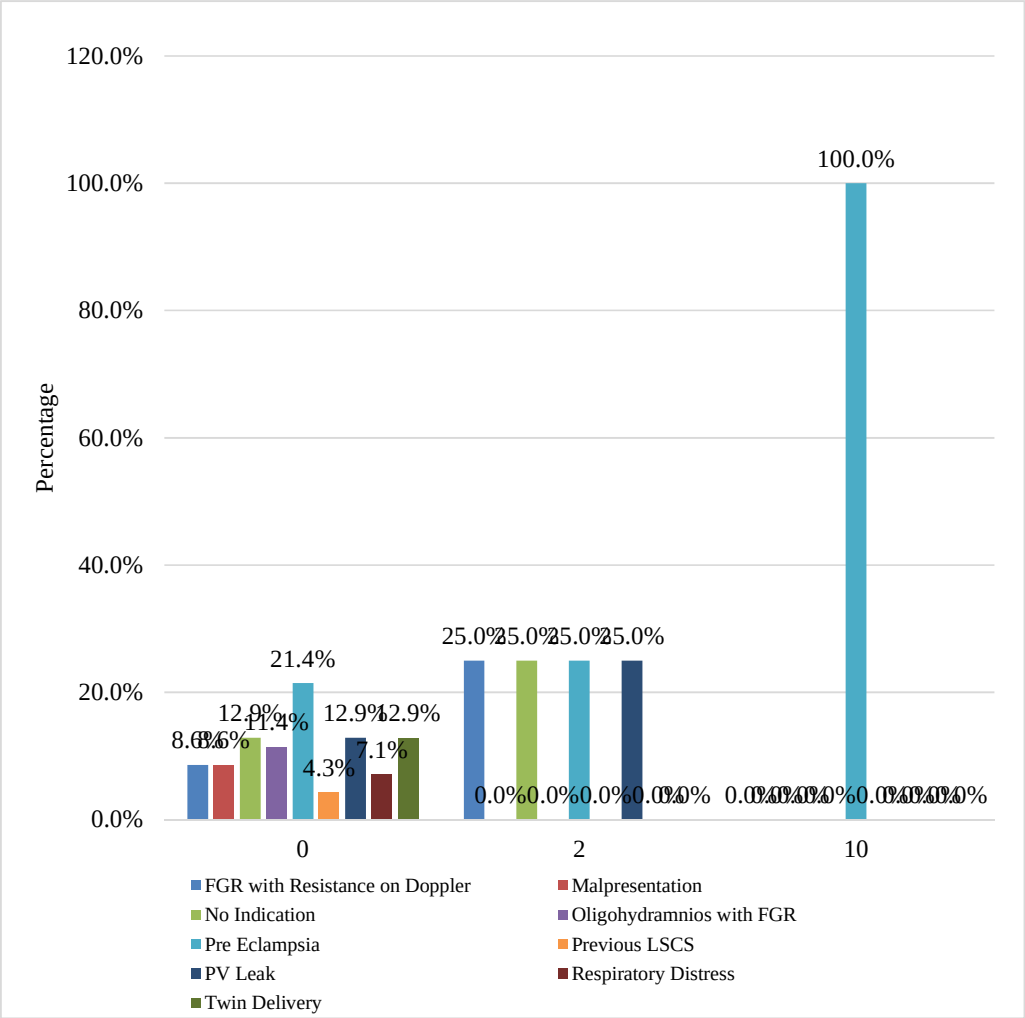

Figure 4: Bar graph shows the comparison between the indication of delivery and M-CHAT scores.

Table 7: Comparison of mean of Apgar scores min between study group.

Apgar Score	**Study Group (Mean± SD)**		**P value**
	High Risk Baby Clinic (N=69)	**Well Baby Clinic (N=75)**	
At 1 min (N=144)	6.68 ± 1.33	8 ± 0.59	<0.001
At 5 min (N=144)	8.54 ± 1.07	9.93 ± 0.41	<0.001
	High Risk Baby Clinic (N=21)	**Well Baby Clinic (N=1)**	
At 10 min (N=22)	9.48 ± 0.75	10 ± 0	0.503

The above table show the comparison of APGAR scores and M-CHAT scores. The mean scores of HRB babies at 1 minute is 6.68±1.33, at 5 minute is 8.54±1.07, at 10 min is 9.48±0.75. The mean scores of WBC at 1 minute is 8.54±1.07, at 5 minutes is 9.93±0.41, at 10 minutes is 10±0. The p value at 1 minute, 5 minutes and 10 minutes is <0.001, <0.001 and 0.503 which shows some statistical significance but when compared with the sample size. We can't rely on the above data.

Table 8: Comparison of Birth Weight (Grams) between study group and M CHAT Score

Study Group	Birth Weight (Grams) (N=150)	n (%)		M CHAT Score (N=75)			Chi-square	P-value
				0 (N=70)	**2 (N=4)**	**10.00 (N=1)**		
High Risk Baby Clinic (N=75)	Extreme Low Birth Weight	5 (6.67%)	**Chi-square = 89.29 & P-value = <0.001**	4 (5.71%)	0 (0%)	1 (100%)	22.055	0.001
	Very Low Birth Weight	26 (34.67%)		22 (31.43%)	4 (100%)	0 (0%)		
	Low Birth Weight	34 (45.33%)		34 (48.57%)	0 (0%)	0 (0%)		
	Normal Birth Weight	10 (13.33%)		10 (14.29%)	0 (0%)	0 (0%)		
				0 (N=75)	**2 (N=0)**	**10.00 (N=0)**		
Well Baby Clinic (N=75)	Extreme Low Birth Weight	0 (0%)		0 (0%)	-	-	-	-
	Very Low Birth Weight	0 (0%)		0 (0%)	-	-		
	Low Birth Weight	8 (10.67%)		8 (10.67%)	-	-		
	Normal Birth Weight	67 (89.33%)		67 (89.33%)	-	-		

The above table shows the comparison between the birth weight and M-CHAT scores Extreme low birth weight (< 1000gms) were 5 (6.67%), Very low birth weight (1001 -1500 gms) were 26 (34.67%), Low birth weight (1501-2500gms) were 34 (45.33%), Normal birth weight were 10 (13.33%) compared to Well baby clinic were Extreme low birth weight (< 1000gms) were 0 (0%), Very low birth weight (1001 - 1500 gms) were 0 (0%), Low birth weight (1501-2500gms) were 8 (10.67%), Normal

birth weight were 67 (89.33%). When compare their M-CHAT scores the p value is <0.001 which is significant. Hence like other studies low birth weight is a significant risk factor for ASD.

Figure 5: Cluster bar graph of comparison of birth weight (grams) across M-CHAT score (N=75)

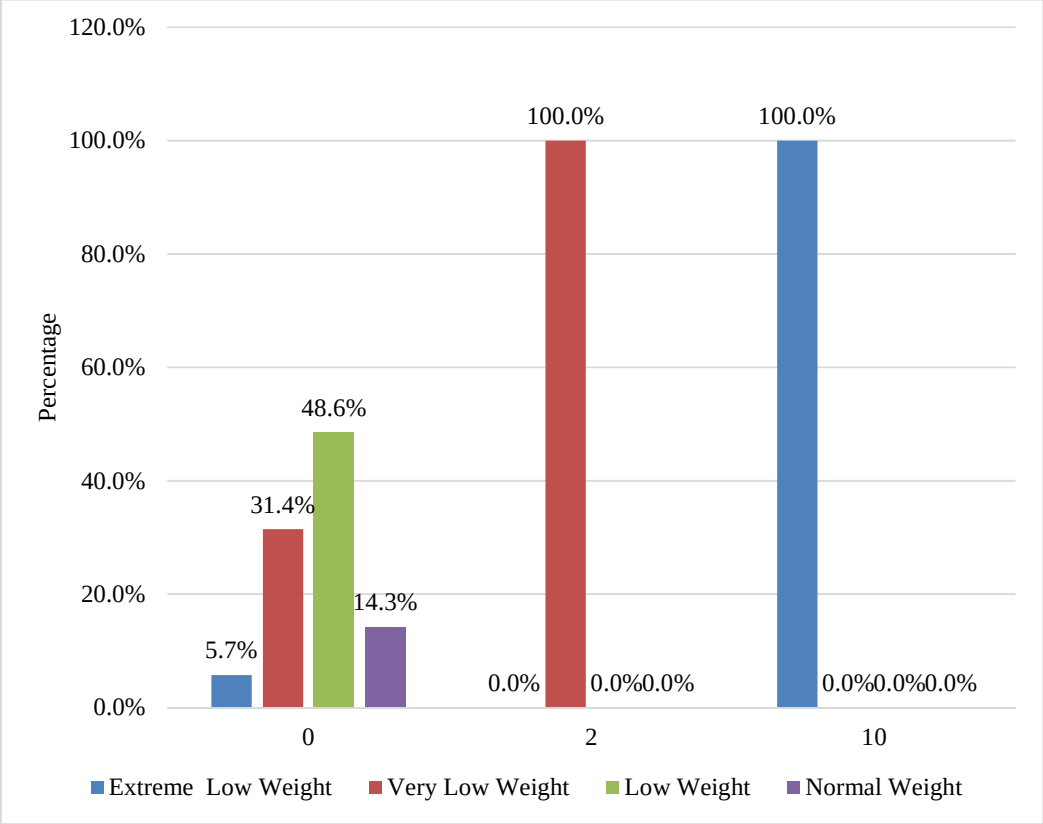

Figure 5 Bar graph show the comparison between the birth weight and M-CHAT scores.

Table 9: Comparison of NICU Admission between study group and M CHAT Score

Study Group	NICU Admission (N=150)	n (%)		M CHAT Score (N=75)			Chi-square	P-value
				0 (N=70)	2 (N=4)	10.00 (N=1)		
High Risk Baby Clinic (N=75)	Yes	68 (90.67%)	Chi-square = 92.29 & P-value = <0.001	63 (90%)	4 (100%)	1 (100%)	0.551	0.759
	No	7 (9.33%)		7 (10%)	0 (0%)	0 (0%)		
				0 (N=75)	2 (N=0)	10.00 (N=0)		
Well Baby Clinic (N=75)	Yes	9 (12%)		9 (12%)	-	-	-	-
	No	66 (88%)		66 (88%)	-	-		

The above table shows the comparison of NICU admission between the high-risk baby clinic and well-baby clinic, 68 (90.67%) from HRB and 9 (12%) from WBC are admitted in NICU, there is statistical significance between the two groups but when compared to their M CHAT score there is no statistical significance. Therefore, NICU admission is not a considerable risk factor for ASD.

Figure 6: Cluster bar graph of comparison of NICU admission across M-CHAT score (N=75)

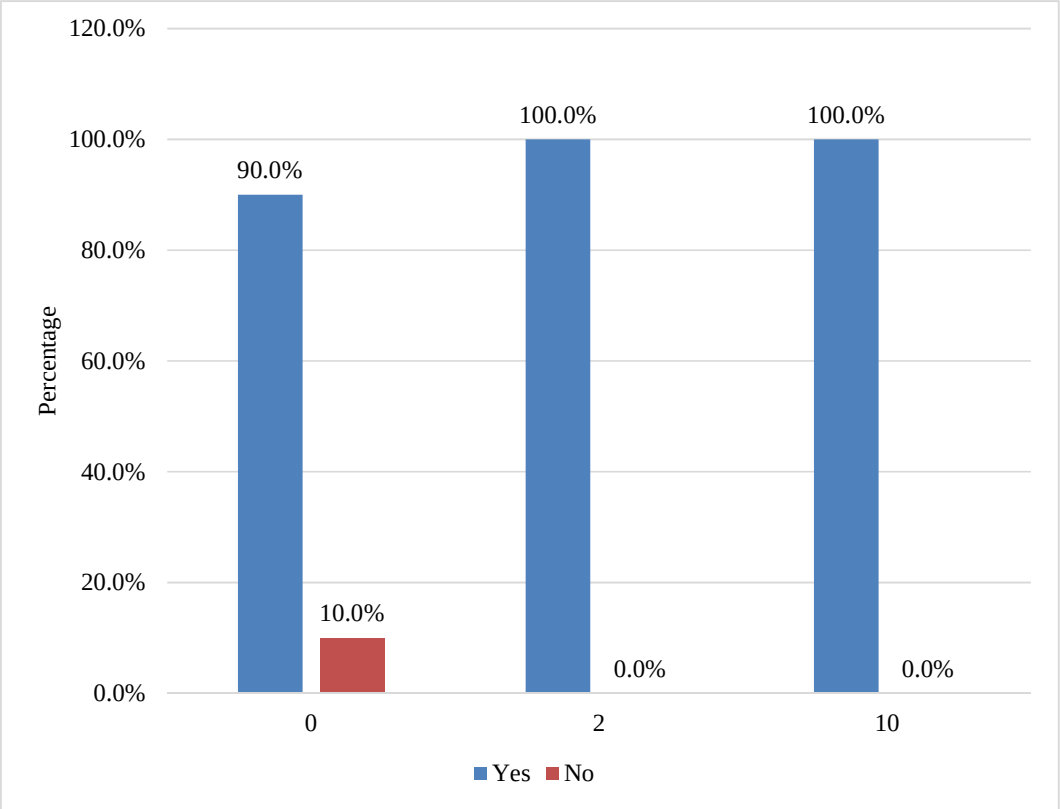

Figure 6: Bar graph show the comparison between the NICU admission and M-CHAT scores.

Table 10: Comparison of ventilation on Admission between study group and M CHAT Score

Study Group	Ventilation (N=150)	n (%)		M CHAT Score (N=75)			Chi-square	P-value
				0 (N=70)	2 (N=4)	10.00 (N=1)		
High Risk Baby Clinic (N=75)	Yes	21 (28%)	Chi-square = 42.42 & P-value = <0.001	19 (27.14%)	1 (25%)	1 (100%)	2.615	0.271
	No	54 (72%)		51 (72.86%)	3 (75%)	0 (0%)		
				0 (N=75)	2 (N=0)	10.00 (N=0)		
Well Baby Clinic (N=75)	Yes	0 (0%)		0 (0%)	-	-	-	-
	No	75 (100%)		75 (100%)	-	-		

The above table show the comparison of Ventilation on admission with M-CHAT scores. 21 (28%) of HRB and none from the WBC were received ventilation and 54 (72%) and 75 (100%) were not received ventilation. P value comparison between the ventilation on admission and M-CHAT score is 0.271 which is statistically insignificant**.**

Figure 7: Cluster bar graph of comparison of ventilation across M-CHAT score (N=75)

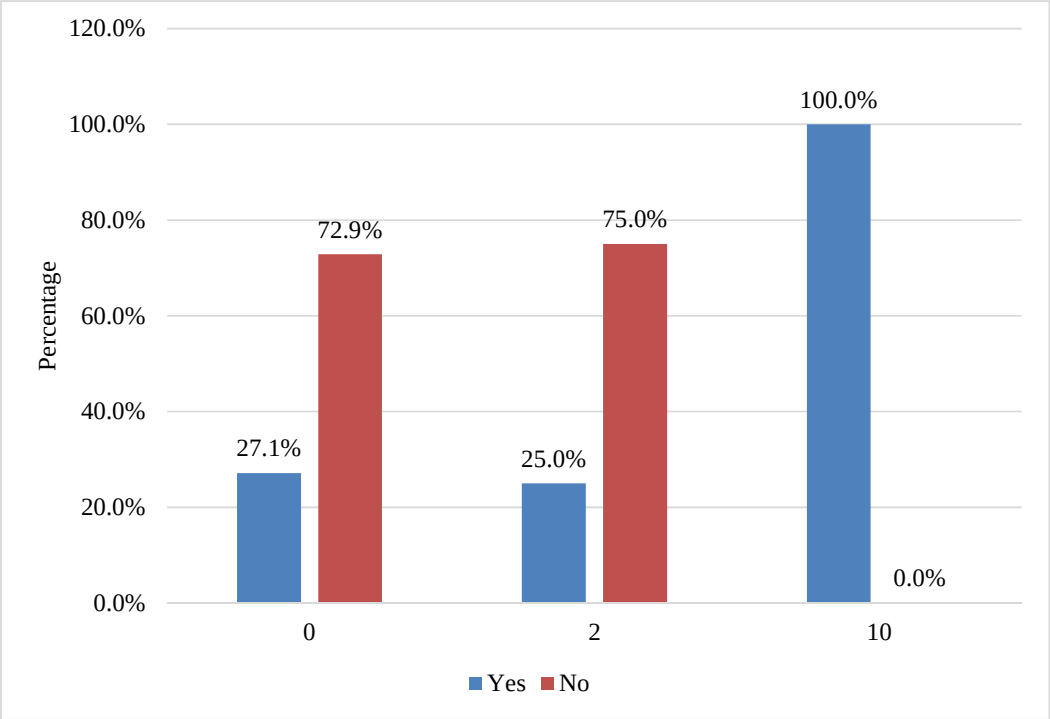

Figure 7: Bar graph show the comparison between the NICU admission and M-CHAT scores.

Table 11: Comparison of culture positive sepsis between study group and M CHAT Score

Study Group	Culture Positive Sepsis (N=150)	n (%)		M CHAT Score (N=75)			Chi-square	P-value
				0 (N=70)	2 (N=4)	10.00 (N=1)		
High Risk Baby Clinic (N=75)	Yes	6 (8%)	Chi-square = 6.25 & P-value = 0.012	5 (7.14%)	1 (25%)	0 (0%)	1.727	0.422
	No	69 (92%)		65 (92.86%)	3 (75%)	1 (100%)		
				0 (N=75)	2 (N=0)	10.00 (N=0)		
Well Baby Clinic (N=75)	Yes	0 (0%)		0 (0%)	-	-	-	-
	No	75 (100%)		75 (100%)	-	-		

The above table the comparison between culture positive sepsis among the HRB and WBC and their M-CHAT scores. In HRB 6(8%) are culture positive sepsis and 69 (92%) are without sepsis. In WBC none of the babies are having sepsis. P value is 0.422 which is insignificant.

Figure 8: Cluster bar graph of comparison of culture positive sepsis across M-CHAT score (N=75)

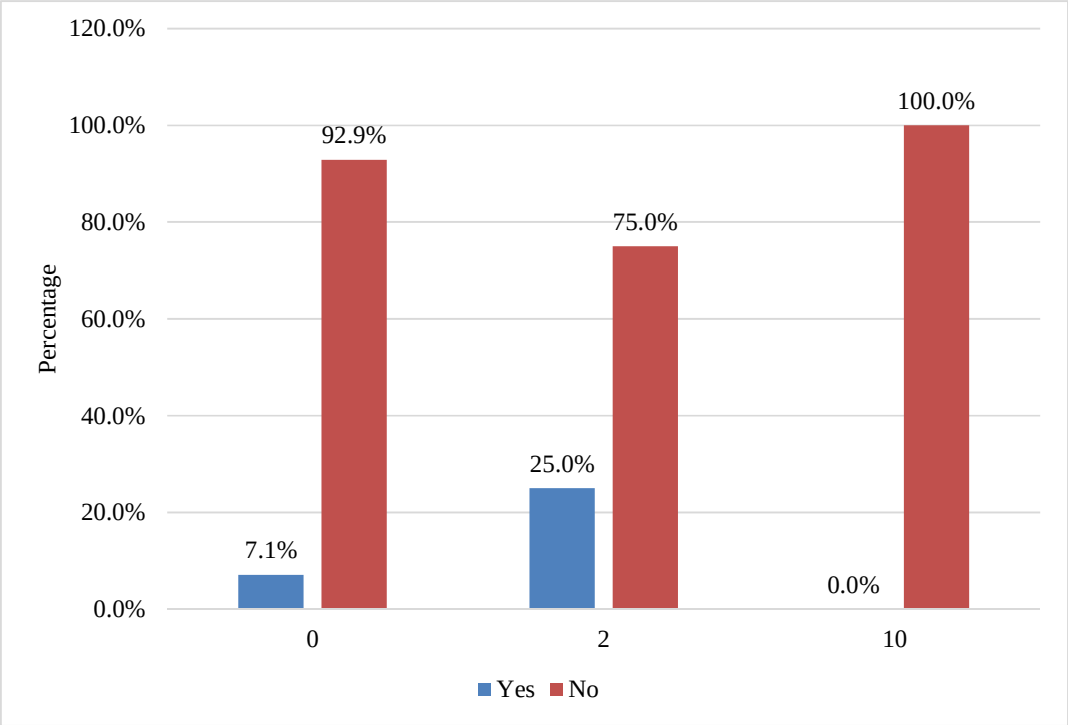

Figure 8: Bar graph shoes the comparison between the culture positive sepsis and M-CHAT scores**.**

Table 12: Comparison of inotropes between study group and M CHAT Score

Study Group	Inotropes (N=150)	n (%)		M CHAT Score (N=75)			Chi-square	P-value
				0 (N=70)	2 (N=4)	10.00 (N=1)		
High Risk Baby Clinic (N=75)	Yes	6 (8%)	Chi-square = 6.25 & P-value = 0.012	5 (7.14%)	0 (0%)	1 (100%)	11.92	0.003
	No	69 (92%)		65 (92.86%)	4 (100%)	0 (0%)		
				0 (N=75)	2 (N=0)	10.00 (N=0)		
Well Baby Clinic (N=75)	Yes	0 (0%)		0 (0%)	-	-	-	-
	No	75 (100%)		75 (100%)	-	-		

The above table show the comparison between the inotrope admission and M-CHAT scores. In HRB clinic 6(8%) are administered with inotropes and 69(92%) not administered with inotropes and none from WBC are administered with inotropes. When compared with their M-CHAT scores the p value is <0.003 which is significant. But it can't be attributed to the population as inotrope usage as one of the risk factors for ASD, because of the small population and none of the babies from WBC shown high risk for M-CHAT score.

Figure 9: Cluster bar graph of comparison of inotropes across M-CHAT score (N=75)

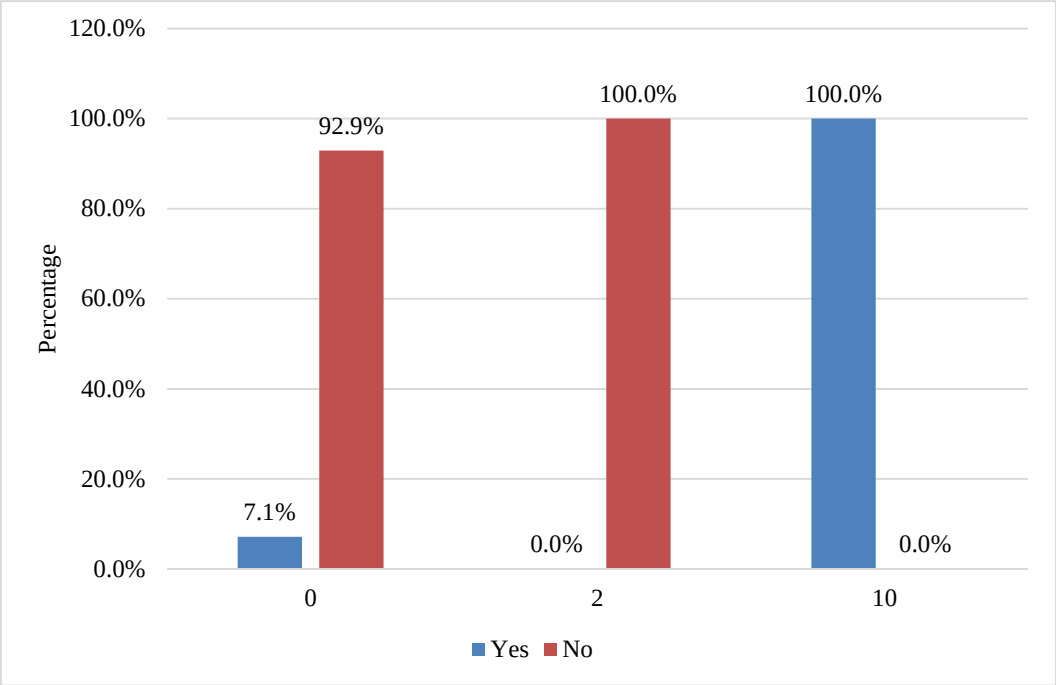

Figure 9: Bar graph the comparison between the usage of inotrope and M-CHAT scores.

Table 13: Comparison of M CHAT Score between High-Risk Baby and Well Baby Clinic.

Study Group	admission after neonatal period (N=150)	n (%)		M CHAT Score (N=75)			Chi-square	P-value
				0 (N=70)	2 (N=4)	10.00 (N=1)		
High Risk Baby Clinic (N=75)	Low Risk	74 (98.67%)	Chi-square = 1.00 & P-value = 0.316	70 (100%)	4 (100%)	0 (0%)	75.00	<0.001
	High Risk	1 (1.33%)		0 (0%)	0 (0%)	1 (100%)		
				0 (N=75)	2 (N=0)	10.00 (N=0)		
Well Baby Clinic (N=75)	Low Risk	75 (100%)		75 (100%)	-	-	-	-
	High Risk	0 (0%)		0 (0%)	-	-		

The above table the comparison of M-CHAT scores between the HRB and WBC. 1 (1.33%) of the baby from HRB shows the high-risk score for M-CHAT, 74 (98.67%) are low risk and all the babies from WBC are low risk. We can say that High risk babies are more prone to ASD compared to Well baby clinic. The prevalence among the HRB is 1.3%, but we cannot attribute to the over all population because of the small population.

Figure 10: Cluster bar graph of comparison of M-CHAT score between study group (N=150)

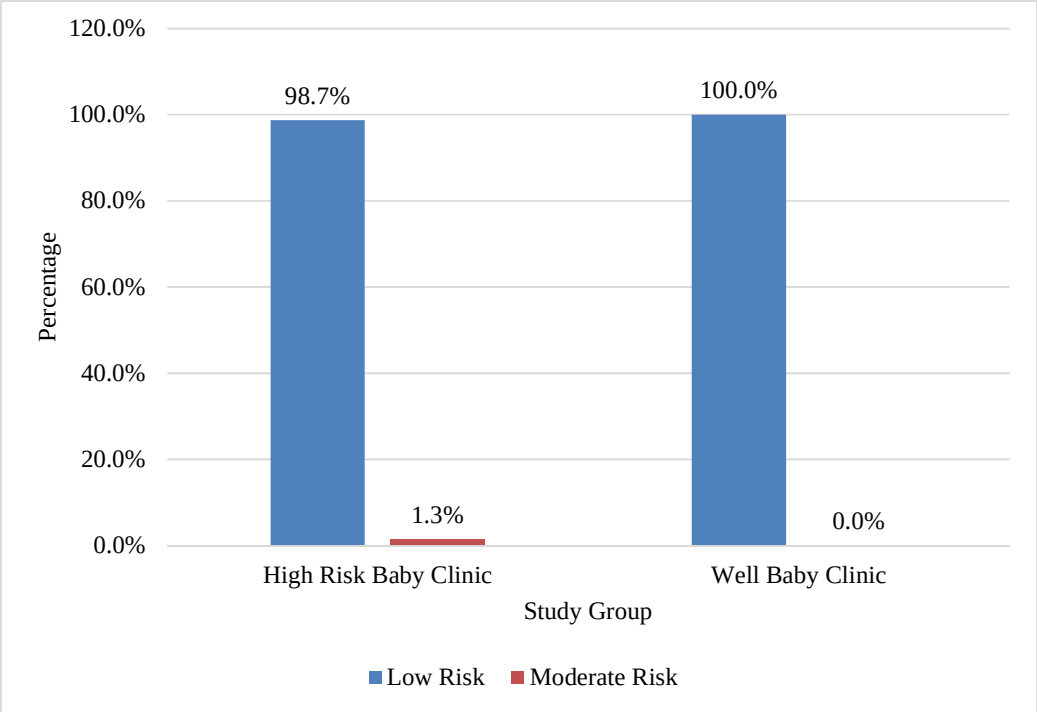

Figure 10: Bar graph show the comparison of M-CHAT scores across the population

DISCUSSION

The term autism spectrum disorder (ASD) is used to describe a group of neurodevelopmental disorders that include "Asperger syndrome, autism disorder, and pervasive developmental disorder-not otherwise defined (PDD-NOS)". The main characteristic of these diseases is a fundamental impairment in social communication (American Psychiatric Association, 2000). "Atypical social engagement and responsiveness, restricted facial expressions directed at others, abnormal eye contact, poor communication skills, difficulty initiating social contact through verbal or nonverbal means, rigid or unusual behaviours, restricted interests, and a lack of awareness or understanding of others' thoughts and feelings" are some of the behavioural symptoms used to diagnose autism spectrum disorder (ASD). Although professionals can now identify ASD by age two, it is typically diagnosed during the preschool years (Chawarska, Klin, & Volkmar, 2008).[54] In face-to-face interactions, the symptoms are easily noticeable in both adults and children with ASD. ASD is distinguished from other developmental disorders by core deficits in social functioning, even though there is a great deal of variability in these primary symptoms and the associated atypical behavioral patterns (e.g., intellectual disability, language impairment, unusual responses to sensory stimuli, and challenging behaviors). Therefore, ASD offers a model syndrome that can be used to study behavior, cognition, and social perception.

Using standardized measures of cognitive and language development and specially designed assessments, a number of behavioral studies have looked at infants at risk for ASD who are 6 months old or younger. The goal is to identify atypical behaviors that may indicate early autism symptoms (Bryson, McDermott, Rombough,

Brian, & Zwaigenbaum, 2006).[55] According to the agreement from this research, there are no discernible differences between low-risk controls, other high-risk infants, and infants who later satisfy the criteria for ASD in the first few months of life.

All of these babies show obvious social attention and involvement; they follow eye gaze, smile at individuals, especially their primary caregivers, vocalize, and keep good eye contact while interacting face-to-face (Rogers, 2009).[56] In comparison to low-risk kids who had a normal outcome, infants with an ASD outcome at age 3 demonstrated more frequent interpersonal and communication behaviors at 6 months, according to a recent study that tracked a sizable cohort of at-risk babies (Ozonoff et al., 2010).[57] Therefore, there is no indication of very early abnormalities in social engagement during infancy from prospective research.

But by the time a newborn reaches 12 months old, notable variations start to show up in those who go on to develop ASD, suggesting a fundamental shift in social communication and other behaviors between 6 and 12 months. At one year old, which behaviors have been identified? While most infants display this pattern later in the second year of life, a small percentage of children start to exhibit mild delays in fine or gross motor development at this age (Landa & Garrett-Mayer, 2006).[58] Certain children display aberrant repeated behaviors in the motor domain, like non-typical arm wave movements (Iverson & Wozniak, 2007; Loh et al., 2007).[59] Additionally, variations in visual attention are risk factors for ASD.

The study was conducted over a period of one year between October 2022 to September 2023 at KLES Dr Prabhakar kore Hospital. All children who were between 16-24 months who were attending the High risk clinic and Well baby clinic OPD were included in the study who met the inclusion criteria, after taking informed consent.

The parents were subjected to M-CHAT-R questionnaire which is having 20 preset questions where the parents have to answer yes/no regarding their child. Based on the score the children were labelled into LOW RISK (0-2), MODERATE RISK (3-7), HIGH RISK (8-20). Children A score of one was given for the presence of anomalous behaviour, and the overall score was interpreted. Marks will be assigned based on the response. A screening result of ≤ 2 was negative. If the result is between 3 and 7, repeat the assessment one month later, or enlist the assistance of a child psychiatrist for a confirmatory study called CARS. Score more than 8 directly do confirmatory test. They are then to be assessed with diagnostic test like Childhood Autism Rating Score (CARS) with help of child psychiatrist.

The gender distribution in our study was male predominant. 44 (58.67%) and 51 (68%) were males in HRB and WBC respectively and 31 (41.33%) and 24 (32%) were females in HRB and WBC respectively. Among all the toddlers one female from HRB out of 31 was screening positive and was followed up with child psychiatrist for further diagnostic evaluation. None of the males shows screening positivity from both HRB and WBC. Other studies conducted by (Fobonne et al 2005)[4] show higher prevalence among male children, with a male-to-female (M: F) ratio of 4:1. Clinical studies often report a higher M:Fratio, ranging from 4:1 to 6:1, while community-based studies show a lower ratio of 2:1 to 3:1. Other large-scale studies indicate that the M:F ratio falls between the range of 2:1 to 5:1 "Kim et al., 2011[29]; Idring et al., 2012[61]; Mattila et al., 2011[62]; Baron-Cohen et al 2009[63]; Suren et al., 2012[29]; Baio et al., 2014[29]". P value compared with M CHAT score is 0.451 which is not statistically significant. According to the DSM-IV, the gender distribution of ASD shows a male-to-female ratio of 4:1. The gender discrepancy in our study can be due to the small sample size.

The prevalence of Autism spectrum disorder (ASD) shows significant variation across different regions and studies. In developed countries, the rate is about 1 in 100 individuals, while it is slightly lower in developing nations (Fobonne, 2005; Williams et al., 2006; Elsabbagh et al., 2012).[4] In our study Table 16 show the positive M-CHAT scores between the both groups. 1 out of 75 from HRB shows High risk with ASD features and was referred to child psychiatrist. There is no positivity screening test among the WBC children. The p value is 0.316 that is not significant. The prevalence among the HRB toddlers is 1.3% which had a discrepancy with the p value which is due to the small sample size. According to the DSM-IV and CDC, ASD prevalence ranges from 2.8 to 94 per 10,000 individuals. In India, a comprehensive study reported that the prevalence of ASD among children aged 0-17 years ranges from 0.09% to 1.07% (Anil Chauhan et al., 2019).[3]

In mode of delivery though there is statistically difference between the groups but when compared to their M-CHAT scores there is no much statistical difference. In our study (Table 5) 13 (17.33%) from HRB and 44 (58.7%) from WBC were born via normal vaginal delivery, 62 (82.67%) from HRB and 31(41.33%) from WBC were born via caesarean section. Out of all one baby from HRB born via LSCS had a score of 10/20 (high risk score) in M-CHAT, 3 babies born via caesarean section had a score of 2/20 (low risk), one baby born via normal vaginal delivery had a score of 2/20 (low risk) these babies were further evaluate for during the follow up scores came out to be normal. When compared between the mode of delivery and M-CHAT scores the P value of 0.857 which was statistically insignificant. But studies by (Hultman et al., 2002[19]; Glasson et al., 2004[17]) show children delivered by caesarean section are more likely to develop ASD, particularly those with low birth and congenital anomalies.

Studies indicates that preterm birth and LBW serves as indicator for development of neurological and psychiatric conditions (Breslau et al., 1995).[64] In our study 25% of the babies from the HRB were term and 1.5% of the WBC were preterm. As mentioned above preterm is one of the risk factors for ASD. In our study one baby from HRB who is extremely preterm had a score of 10/20 (High risk) and was referred to child psychiatrist. 3 babies whose score is 2/20 are early preterm and were followed up later. They don't show any features of ASD. All the babies from WBC were term and are having low risk scores. When compared between the groups there is statistical significance but when M-CHAT scores were compared with risk factor there is no significant association in our study. Due to the less sample size and the challenges to make the parents understand the questions leads to statistical insignificance. But in other studies, as discussed below, it shows a significant association between M-CHAT scores and preterm gestation in western countries.

Studies show Low birth weight <2500gm/small for gestation Age has a significant association with Autism "Larsson et al 2002 and Hultman et al 2002".[19] In our study 86.7% of the babies from HRB are low birth weight and 13.3% of the babies from HRB are normal birth weight. 67(89.33%) of the babies from WBC are normal birth weight and 8 (10.67 %) are low birth weight. One baby from HRB had a score of 10/20 (High risk) was extremely low birth weight. 4 babies having score of 2/20 are low birth weight and were followed up in further course doesn't had features of ASD in later life. As study by Hultman et al 2002[19] stated that LBW children 2 fold increase in risk of developing autism as compared to normal children. When compared the LBW between the groups and with their M-CHAT scores the P value is <0.001which is statistically significant. Hence in our study it shows there is an association between LBW and M-CHAT for screening in AUTISM.

Studies by Darios Getahun et al 2023.[60] Found that there is increased of neonatal sepsis with ASD. The strength of the association varied depending on the timing of exposure, being most pronounced when sepsis occurred within the first 24 hours of life. Neonatal sepsis is associated with a higher risk of ASD regardless of the gestational age at birth. In our study 8% of the babies are showing culture positive sepsis, and none of the babies from WBC having culture positive sepsis. One child whose M-CHAT is having High risk but is culture negative. But there is no statistical significance between the M-CHAT scores and culture positive sepsis between the groups. This is due to the limitation of the study having small size.

Ventilation at hospital stay was comparatively more in HRB children 21 out of 75 (28%), where 1 show high risk score which shows as one of the risk factors, but their p values are > 0.05 which is statistically insignificant.

Table 13 show comparison of inotrope usage and M CHAT score between the HRB and WBC which shows the use of inotropes in HRB toddlers during admission for 6(8%) toddlers and 0 (0%) in WBC. The M CHAT shows the positivity in 1 of 6 toddlers in HRB, where none of the WBC shows positivity. P value is 0.003 which is significant.

M-CHAT Experience

We would here want to discuss the experience of administering M-CHAT in the follow up clinic of a tertiary care centre of tier 2 city in north Karnataka. Majority of the parents are just completed the high school education. However, we have unique issue regarding the language because of bilingual population. It was the major

challenge in ensuring the proper understanding of each of the questions from M-CHAT scores.

Q1. It states that pointing something across a room, weather the child looks at it or not? for this question there is no confusion for the parents and easy to administer.

Q2. It states that whether the child is deaf or not? This is one of the important questions that parents never accept that their child is deaf. All the babies from high-risk baby clinic had undergone hearing screening as a protocol, however babies from well-baby clinic had not undergone hearing screening because we did not have that protocol during the study period. This one of the questions that cannot be interpretated correctly.

Q3. It states that the child pretends to play or make believe? like pretend talking on phone, pretend to play with doll? While administering this question we did not addressed any problem.

Q4. It states that whether the child able to climb on things? like climbing on furniture, stairs while administering this question we did not addressed any problem and further we evaluated the child at our OPD.

Q5. It states that the child is doing any unusual finger movements? There were no difficulties in administering this question.

Q6. It states that whether the child asks for anything with one finger?

The major challenge while the parents are marking the response to this question is that the parents are not able to understand the question and it requires the demonstration with the proper example to make them understand and to get the correct response.

Q7. It states that whether the child able to point out things which are interesting?

We encountered some challenges to ensure the parents understood the question correctly, frequently the parents required to be demonstrated to point out things which interest the child. While administering this question the child can't be able to demonstrate with us but we have followed the parents' answers.

Q8. It states that whether the child is interested to play with other children? There is no problem while administering this question. The assessment during our administration and the parent response are matched with all the children.

Q9. It states that whether the child shows the thing which he/she founds interesting but not for help? This question is very difficult to assess because there is no evidence because the most of the children can't demonstrate during the M-CHAT administration, we had given proper examples to make the parents understand.

Q10. It states that child responds to his/her name? There is no difficulty while administrating this question, because we confirmed the parent's response.

Q11. It states that the child smiles back at you when we smile back? during administration we did not face any difficulties.

Q12. It states that the child will get upset by daily noises? This is one question where if parents answered NO the child will be assigned a score of 1, there are no difficulties in administering this question.

Q13. It states that the child is able to walk? While administering this question there is no difficulties.

Q14. It states that does the child looks into eye while talking with him/her? While administering this question we can confirm the parent's findings.

Q15. It states that child will be able to copy what you do? like waving back bye-bye while administering we didn't face any difficulties. Because the child is also coping waved back at us while we waved at him/her.

Q16. It states that the child turns her head to look at something, does the child look at what you are looking at?

We faced difficulties while administering this question, the challenges while explaining this question, the parents can't be able to understand the question while giving their response, we have to give proper examples and demonstrate it to mark their response.

Q17. It states that child attempt to get your attention to watch them? we didn't faced any difficulties while administering this question.

Q18. It states that child will be able to understand and do what you are telling?

The major challenge while administering this question is that parents not able to understand what exactly the response to give because majority of the times the parents over interpret abut their child and it requires demonstration for them to understand what exactly the question is about.

Q19. It states that if some new thing happens to the child, he/she will look at your face? We didn't face any difficulties while administering these questions.

Q20. It states that the child like swinging activities? No difficulties were faced while administering this question.

CONCLUSION

- Children who are attending to the High-risk baby clinic are at higher risk for ASD when compared to the children who are attending the well-baby clinic.
- Children who are extremely low birth are at higher risk when compared to the children with normal birth weight and normal term.
- Children who are preterm are at higher risk when compared to term infants.
- Females from the HRB clinic are at more risk when compared to males in HRB clinic.
- In our study we faced challenges while administering in M-CHAT questionnaire, Q 2, Q 6, Q 9, Q 16, Q 18.
- The above-mentioned questions were turned out to be challenging and needed proper demonstration and time to make the parents to mark correct response.
- The use of M-CHAT in developing countries like India becomes very challenging for screening of ASD as compared to western countries due to the various reasons like education status, multi linguistic and needed proper training to administer.

SUMMARY

The study was carried over a course of one year between September 2022 to October 2023 at KLES Dr Prabhakar kore hospital. Children age between 16-24 months attending the High-risk baby clinic and well-baby clinic were included in the study after taking the informed consent. The parents were subjected to M-CHAT-R questionnaire regarding the social and motor mile stones of their child. The score was marked according to the parent each question of 0-1.

The data obtained was tabulated into MS EXCEL sheet and was analysed using IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.

- The study included consecutive babies 75 babies each from HRB and WBC over a period of one year.
- All babies age between 16-24 months with mean age of 19.31±1.83 and 19.23±2.02 from HRB and WBC respectively.
- The gender distribution in our study was male predominant .44 (58.67%) and 51(68%) were males from HRB and WBC respectively. 31(41.33%) and 24 (32%) were females.
- The mean birth weight was 1802±608.29 and 2856.88±335.76 from HRB and WBC.
- 25% of the babies from the HRB clinic were TERM neonates and 1.33% from WBC was preterm neonate.
- One of the baby from HRB got High risk score (10/20) and was followed up with child psychiatrist and diagnosed as ADHD.

- The comparison between the period of gestation and with M-CHAT scores shows insignificant p value of 0.478.
- 83 % (62) of the babies from HRB and 41.33% (31) from WBC were delivered by caesarean section, 17% (13) from HRB and 58.67 % (44) from WBC were delivered by Vaginal delivery.
- The comparison between M-CHAT scores and the mode of delivery shown a P-value of 0.857.
- In HRB 5(6.67%) were extreme low birth weight, 26(34.67%) were very low birth weight, 34 (45.33%) were low birth weight, 10 (13.33%) were normal birth weight.
- In WBC 8(10.67%) were low birth weight and 67 (89.33%) were normal birth weight.
- The comparison between the M-CHAT scores and the birth weight was significant with a p value of <0.01, which shows that low birth weight is one of the risk factors of ASD.
- The mean APGAR scores at 1 min, 5 min, 10 min are 6.68±1.33, 8.54±1.07,9.48±0.75 respectively from HRB clinic.
- The mean APGAR scores at 1 min, 5 min, 10 min are 8±0.59, 9.93±0.41, 10±0 respectively from Well baby clinic.
- The p value when compare with the M-CHAT scores is 0.503 which is statistically insignificant.
- 68 out of 75 toddlers from HRB are having NICU admission and 9 out of 75 from well-baby clinic has NICU admission.
- The P value compared between the NICU admission as a risk factor with M-CHAT scores is 0.759 which is statistically insignificant.

- 21 out of 75 toddlers from HRB received ventilatory support (CPAP and mechanical ventilation) and none of the babies from well-baby clinic received ventilation.
- The P value when comparison between the ventilation at admission and M-CHAT scores is 0.271 which is statistically insignificant.
- 6 out of 75 toddlers from HRB and none of them from well-baby clinic were screened positive for culture positive sepsis.
- The p value when comparison between the neonatal sepsis and M-CHAT-R scores for screening ASD is 0.422 which is statistically insignificant.
- 6 out of 75 toddlers from HRB and none of them from well-baby clinic were received Inotropes during neonatal admission.
- The p value when comparison between the inotropes during admission and M-CHAT-R scores for screening ASD is 0.03 which is statistically significant.

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ANNEXURE-I

CONSENT FORM FORMAT

KAHERs JNMC BELAGAVI

"A **STUDY ON PREVALENCE OF AUTISM SPECTRUM DISORDER AMONG TODDLERS BETWEEN HIGH-RISK BABY CLINIC AND WELL BABY CLINIC USING M CHAT -R SCALES.A CROSS SECTIONAL COMPARITIVE STUDY**."

Name of Student/Principal Investigator:

Name of Guide/Co Investigators:

Objective: To study the prevalence of autism spectrum disorders in children age between 16-24 months followed up at high-risk baby clinic and well-baby clinic in tertiary care hospital using MCHAT-R Scales**.**

Introduction: As per the recent studies there is a increasing trend in prevalence of Autism Spectrum disorder world-wide from 0.5 to 1 %. Early detection and early intervention are in current requirement in this area for better prognosis. Early intervention provides optimal life of affected and their family. We can identify as early as 24 months of life. Paediatrician can use MCHAT-R Scale for screening the child for ASD.

Explanation of procedure:

- After detailed history, informed consent will be obtained from the parents after explaining the purpose of the study. DATA will be collected using the tool a semi structured proforma in their own vernacular language. M CHAT-R: This is a simple tool, considered a valid tool for early detection of children at risk for ASD.It is a checklist of 20 commonly observed child behaviors. This requires the mother to report on presence of specific child behaviors according to the check list as YES or NO responses.Presence of an abnormal behavior was assigned a score of 1 and total score interpreted. According to the response marks will be scored. Score <3 screening was negative. If the score is 3-7 repeat the follow up screening after one month or confirmatory study CARS with the help of child psychiatrist. Score more than 8 directly do confirmatory test.

Withdrawal from participation in the study: Participation in this study is voluntary. You will be free to decide whether to participate in this study or continue participation once enrolled. In case you decide to withdraw your participation, you are free to do so. However, please convey the decision to the principal investigator.

Possible benefits from participating in the study: You will/will not have nor get any benefits by participating in this study. The data gathered will help the population at large.

Possible risks from participating in the study: There are no risks involved in participating in this study.

Privacy and confidentiality: The information collected from you will be coded, to

prevent any person from identifying you. Your identity will never be revealed. The data collected from you will be kept confidential and only processed or aggregated data will be used for publication.

Financial incentives: You will not receive any payment for participating in this study. Authorization for publication of aggregated data: Results obtained after processing of the aggregated data will be published for scientific purposes and or presented to scientific groups. However, your identity will never be revealed.

Questions: In case of any questions with regard to this study, you are free to contact: Dr Harsha Hegde, Chairperson, Ethical committee of JNMC, 0831-2473777 Extension 4052.

Legal rights: By signing this consent form, we are not waving any of your legal rights.

CONSENT STATEMENT

I am making a voluntary decision to participate in the study : "**A STUDY ON PREVALENCE OF AUTISM SPECTRUM DISORDER AMONG TODDLERS BETWEEN HIGH RISK BABY CLINIC AND WELL BABY CLINIC USING M CHAT -R SCALES.A CROSS SECTIONAL COMPARITIVE STUDY".** My signature below indicates that I have decided to participate and I have read the information provided above or the information provided above has been read to me in the language that I understand best. I was given the opportunity to ask questions and that they have been answered to my satisfaction.

Name of the participant:

Signature or left thumb impression of the participant: Name of the witness:

Signature or left thumb impression of the witness: Name of the investigator:

Signature of the investigator:

ANNEXURE -II

PROFORMA

PARENT DETAILS

NAME:

AGE:

ADDRESS:

MOBILE NO:

EDUCATIONAL STATUS:

OCCUPATION -FATHER:

MOTHER:

SOCIOECONOMIC STATUS:

CHILD DETAILS

NAME:

AGE:

GENDER: ☐ BOY ☐ GIRL

PERIOD OF GESTATION AT BIRTH

☐<28WEEKS

☐ 28WEEKS +1DAY- 32WEEKS

☐32WEEKS+1DAY -36WEEKS+6DAYS

☐37WEEKS -38WEEKS+6DAYS

☐ 39WEEKS-40WEEKS+6DAYS

MODE OF DELIVERY ☐ NORMAL VAGINAL DELIVERY

☐ ASSISTED VAGINAL DELIVERY

☐ CESAREAN SECTION -

☐ ELECTIVE

☐ EMERGENCY-

INDICATION:

CORD BLOOD GAS:

APGAR SCORE:

PLACE OF BIRTH: ☐ INBORN HOSPITAL

☐ OUTBORN HOSPITAL

☐HOME

BIRTH WEIGHT:

DISCHARGE WEIGHT:

FEEDING: EBF YES/NO

If so, how many months-

ANY NICU ADMISSION: YES/NO

If yes, No. of days-

Ventilation – YES/NO how many days

Culture positive sepsis- YES/NO

Inotropes- YES/NO

ADMISSION AFTER NEONATAL PERIOD- YES/NO

If yes, Diagnosis

No. of days stay in hospital:

M-CHAT-R™

Please answer these questions about your child. Keep in mind how your child usually behaves. If you have seen your child do the behavior a few times, but he or she does not usually do it, then please answer **no**. Please circle **yes** or **no** for every question. Thank you very much.

1. If you point at something across the room, does your child look at it? **EXAMPLE**, if you point at a toy or an animal, does your child look at the toy or animal?)	Yes	No (**FOR**
2. Have you ever wondered if your child might be deaf?	Yes	No
3. Does your child play pretend or make-believe? (**FOR EXAMPLE**, pretend to drink an empty cup, pretend to talk on a phone, or pretend to feed a doll or stuffed animal?)	Yes	No from
4. Does your child like climbing on things? (**FOR EXAMPLE**, furniture, playground equipment, or stairs)	Yes	No
5. Does your child make unusual finger movements near his or her eyes? **EXAMPLE**, does your child wiggle his or her fingers close to his or her eyes?)	Yes	No (**FOR**
6. Does your child point with one finger to ask for something or to get help? (**FOR EXAMPLE**, pointing to a snack or toy that is out of reach)	Yes	No
7. Does your child point with one finger to show you something interesting? (**FOR EXAMPLE**, pointing to an airplane in the sky or a big truck in the road)	Yes	No
8. Is your child interested in other children? (**FOR EXAMPLE**, does your child watch other children, smile at them, or go to them?)	Yes	No
9. Does your child show you things by bringing them to you or holding them up for you to not to get help, but just to share? (**FOR EXAMPLE**, showing you a flower, a stuffed animal, or a toy truck)	Yes	No see –
10. Does your child respond when you call his or her name? (**FOR EXAMPLE**, does he or she look up, talk or babble, or stop what he or she is doing when you call his or her name?)	Yes	No
11. When you smile at your child, does he or she smile back at you?	Yes	No
12. Does your child get upset by everyday noises? (**FOR EXAMPLE**, does your child scream or cry to noise such as a vacuum cleaner or loud music?)	Yes	No
13. Does your child walk?	Yes	No
14. Does your child look you in the eye when you are talking to him or her, playing with him or her, or dressing him or her?	Yes	No
15. Does your child try to copy what you do? (**FOR EXAMPLE**, wave bye-bye, clap, or a funny noise when you do)	Yes	No make
16. If you turn your head to look at something, does your child look around to see what you are looking at?	Yes	No
17. Does your child try to get you to watch him or her? (**FOR EXAMPLE**, does your child at you for praise, or say "look" or "watch me"?)	Yes	No look
18. Does your child understand when you tell him or her to do something? (**FOR EXAMPLE**, if you don't point, can your child understand "put the book on the chair" or "bring me the blanket"?)	Yes	No
19. If something new happens, does your child look at your face to see how you feel about it? **EXAMPLE**, if he or she hears a strange or funny noise, or sees a new toy, will he or she look at your face?)	Yes	No (**FOR**
20. Does your child like movement activities? (**FOR EXAMPLE**, being swung or bounced on your knee)	Yes	No

ANNEXURE III: MASTER CHART

FATHER NAME	MOTHER NAME	FATHER AGE	MOTHER AGE	FATHER EDUCATION	MOTHER EDUCATION	FATHER OCUUPATION	MOTHER OCCUPATION	ADDRESS	MOBILE NO	SOCIOECONOMIC STATUS	CHLID NAME	AGE	GENDER	POG	MODEOF DELIVERY	INDICATION	APGAR SCORE	PLACE OF BIRTH	BIRTH WEIGHT	DISCHARGE WEIGHT	FEEDING - EBF	NICU ADMISSION	NO OF DAYS OF NICU ADMISSION	VENTILATON	CULTURE POSITIVE SEPSIS	INOTROPES	ADMISSION AFTER NEONATAL PERIOD	IF YES, NO OF DAYS OF HOSPITAL STAY	M chart score
Prakash Agasimani	sujatha prakash	26yr	24yr	Degree	Degree	accountant	Housewife	Belagavi	9742401229	20k/month	Sanvi	17 months	girl	32wks+1day-36wks+6days	Emergency LSCS	i/v/o severe pre-eclampsia with absent end diastolic with FGR	6/10 8/10 10/10	Inborn	1400g	1420g	on ebf for 6 months	yes i/v/o LBW with apnea of prematurity	12 days	no	no	no	no	no	0/20 low risk
sunil honamane	arati sunil	29yr	26yr	BE	12th STD	mechanical enginerring	Housewife	Belagavi	9886096956	25k/month	arpita sunil	21 months	girl	37wks-38wks+6days	Elective LSCS	i/v/o previous LSCS	9/10 10/10	Inborn	3000g	2920g	on ebf for 6 months	no	NO	no	no	no	no	no	0/20 low risk
Sunil belgamkar	shruthi S belgamkar	29yr	26yr	BA	Degree	clerk	Housewife	Belagavi	9373324276	25k/month	shreyansh	22 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o severe oligohydramnios	9/10 10/10	Inborn	1300g	1500g	on ebf for 6 months	yes i/v/o septic shock	23 days	yes, cpap ventilation for 6 days	yes (klebsiella, Enterococcus)	yes, 5 days i/v/o septic shock	no	no	0/20 low risk
ramesh	pallavi	31yr	27yr	Diploma in engineering	B.Com	mechanical enginerring	Housewife	honaga, belagavi	7411116487	50k/month	vihan	17 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o IUGR	9/10 10/10	Inborn	1240g	1290g	on ebf for 6 months	yes i/v/o preterm,lbw	28 days	no	no	no	no	no	0/20 low risk
santosh matti	savita santosh matti	25yr	19yr	Degree	Degree	clerk	Housewife	mahantesh nagar, belagavi	8748909877	20k/month	shivani	20 months	girl	32wks+1day-36wks+6days	NVD		n/c	outborn	2100g	2110g	on ebf for 6 months	yes i/v/o late preterm large PDA	11 days	no	yes (klebsiella sepsis)	no	no	no	0/20 low risk
iranna patil	shobha iranna patil	32yr	28yr	12th STD	BA	Supervisor in petrol bunk	Housewife	uribinhatti, gokak	8197697905	15k/month	sanvi	18 months	girl	32wks+1day-36wks+6days	Emergency LSCS	i/v/o oligohydramnios	5/10 7/10 9/10	Inborn	2200g	2249g	on ebf for 6 months	yes i/v/o preterm,lbw	12 days	no	no	no	no	no	0/20 low risk
Prakash Agasimani	sujatha prakash	26yr	24yr	Degree	Degree	accountant	Housewife	Belagavi	9742401229	20k/month	adithya	17 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o severe pre-eclampsia with absent end diastolic with FGR	7/10 9/10	Inborn	1400g	1420g	on ebf for 6 months	yes i/v/o LBW with apnea of prematurity	12 days	no	no	no	no	no	0/20 low risk
yellappa kabatkar	uma y kabatkar	36yr	26yr	Degree	12th STD	supervisor	Housewife	Belagavi	7847859191	25k/month	aarav	19 months	boy	37wks-38wks+6days	Emergency LSCS	i/v/o twin pregnancy	7/10 9/10	Inborn	1900g	1942g	on ebf for 6 months	yes i/v/o lbw	20 days	yes, 3 days	no	no	no	no	0/20 low risk
yellappa kabatkar	uma y kabatkar	36yr	26yr	Degree	12th STD	supervisor	Housewife	Belagavi	7847859191	25k/month	avi	19 months	girl	37wks-38wks+6days	Emergency LSCS	i/v/o twin pregnancy	7/10 9/10	Inborn	1900g	1923g	on ebf for 6 months	yes i/v/o lbw	20 days	yes, 2 days	no	yes, 2 days	no	no	0/20 low risk
chidanand	netravati chidanand	34yr	31yr	BE	BE	Software engineer	Housewife	hindalga, belagavi	7019418078	45k/month	varsha	18 months	girl	32wks+1day-36wks+6days	Emergency LSCS	i/v/o twin pregnancy with severe pre eclampsia	7/10 9/10 10/10	Inborn	1360g	1390g	on ebf for 6 months	yes i/v/o preterm lbw	16 days	yes, cpap ventilation for 2 days	no	no	no	no	0/20 low risk
chidanand	netravati chidanand	34yr	31yr	BE	BE	Software engineer	Housewife	hindalga, belagavi	7019418078	45k/month	drisha	18 months	girl	32wks+1day-36wks+6days	Emergency LSCS	i/v/o twin pregnancy with severe pre eclampsia	7/10 9/10 10/10	Inborn	1660g	1690g	on ebf for 6 months	yes i/v/o preterm,lbw	8 days	no	no	no	no	no	0/20 low risk
kisan malai	nikita k malai	28yr	26yr	12th STD	1oth STD	farmer	Housewife	shivajinagr, yaddalagudda	8951944572	15k/month	parth	20 months	boy	37wks-38wks+6days	Emergency LSCS	i/v/o early onset FGR	7/10 9/10	Inborn	2200G	1980g	on ebf for 6 months	yes i/v/o lbw	5 days	no	no	no	no	no	0/20 low risk
tousif nadaf	khana tousif nadaf	26yr	22yr	12th STD	1oth STD	painter	Housewife	gandhinagar, belagavi	9148037551	15k/month	sidha	20 months	girl	39wks-40wks+6days	Emergency LSCS	i/v/o cephalopelvic disproportion	8/10 10/10	Inborn	3200g	2900g	on ebf for 6 months	yes i/v/o MAS	7 days	yes, cpap ventilation for 2 days	no	no	no	no	0/20 low risk
anilkumar alamath	namrata A alamath	41yr	34yr	MSC	Degree	professor	Housewife	bijapur	9900292143	40k/month	atharva	21 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o absent end diastolic with FGR	8/10 9/10	Inborn	1300g	1340g	on ebf for 6 months	yes i/v/o PRETERM,LBW	13 days	no	no	no	no	no	2/20 low risk
bahubali patil	savita bahubali patil	45yr	35yr	BEd	12th STD	school teacher	Housewife	chikkodi	9538378458	30k/month	sanskruti	18 months	girl	28wks+1day-32wks	Emergency LSCS	i/v/o twin pregnancy	7/10 9/10	Inborn	1200g	1530g	on ebf for 6 months	yes i/v/o preterm,lbw	28 days	no	no	no	no	no	0/20 low risk
bahubali patil	savita bahubali patil	45yr	35yr	BEd	12th STD	school teacher	Housewife	chikkodi	9538378458	30k/month	sanskruta (twin 2)	18 months	girl	28wks+1day-32wks	Emergency LSCS	i/v/o twin pregnancy with decreased fetal movements	7/10 9/10	Inborn	1250g	1510g	on ebf for 6 months	yes i/v/o preterm, lbw	28 days	no	no	no	no	no	0/20 low risk
shankar dasgopal	savita shankardas gopal	38yr	35yr	12th STD	1oth STD	electrician	Housewife	mallapur, ghataprabha	7019301286	7k/month	aradhya	21 months	girl	28wks+1day-32wks	Emergency LSCS	i/v/o severe pre-eclampsia with absent end diastolic with FGR	6/10 8/10 10/10	Inborn	1160g	1480g	on ebf for 6 months	yes i/v/o preterm,lbw	30days	no	no	no	no	no	0/20 low risk
sachin mutkekar	Renuka sachin	38yr	27yr	Degree	B.Com	employee in reliance	Housewife	navvekar galli, shahpur	9480736958	30k/month	vishwash s	18 months	boy	28wks+1day-32wks	NVD		5/10 7/10 9/10	Inborn	1100g	1180g	on ebf for 6 months	yes i/v/o preterm, lbw, RDS	34 days	yes, intubated for 4hrs & cpap for 2 days	no	no	no	no	2/20 low risk
shivananda kambar	vijayalaxmi s kambar	40yr	34yr	uneducated	uneducated	farmer	Housewife	mydalgai, gokak	9663733971	10k/month	sudharshan	20 months	boy	37wks-38wks+6days	Elective LSCS	i/v/o cord around neck	6/10 8/10 10/10	Inborn	2500g	2510g	on ebf for 6 months	i/v/o lbw	10 days	no	no	no	no	no	0/20 low risk
sachin sambhajiche	shruthi s sambhajiche	32yr	30yr	12th STD	1oth STD	farmer	Housewife	kamleshwar galli, yellur	9739011579	10k/month	Sanvi	17 months	girl	39wks-40wks+6days	NVD		9/10 10/10	outborn	3200g	3080g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
abbas ali ganachari	syera bhanu abbas ali	40yr	34yr	10th STD	12th STD	driver	Housewife	aman nagar, belagavi	9743435659	17k/month	mohammed taleh	18 months	boy	37wks-38wks+6days	Elective LSCS	i/v/o previous LSCS	9/10 10/10	Inborn	2200g	2220g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
praveen sansuddi	archana praveen sansuddi	39yr	33yr	BA	BA	business	Housewife	vijayanagar, belagavi	9986031327	18k/month	divit	18 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o PV bleed with placenta previa	6/10 8/10 9/10	Inborn	2130g	2160g	on ebf for 6 months	yes i/v/o lbw, preterm	8 days	no	no	no	no	no	0/20 low risk
satish patil	akshata satish patil	31yr	26yr	B.Com	Degree	accountant	Housewife	Belagavi	8867243821	35k/month	samarat	18 months	boy	37wks-38wks+6days	Emergency LSCS	i/v/o fetal distress	7/10 9/10	Inborn	2800g	2420g	on ebf for 6 months	yes i/v/o distress	6 days	no	no	no	no	no	0/20 low risk
veerendra karachi	shivani verendra	29yr	26yr	MBA	MSC	accountant	Housewife	Belagavi	7353082211	35k/month	druthi	20 months	girl	37wks-38wks+6days	Elective LSCS	i/v/o previous pregnancy	1/10 6/10 7/10	Inborn	3160g	3010g	on ebf for 6 months	yes i/v/o ttnb	3 days	no	no	no	no	no	0/20 low risk
ulavappa tulati	vijayalaxmi ulavappa tulati	34yr	30yr	Degree	Degree	police	Housewife	hirebagewadi	9900479655	50k/month	chinmayi	23 months	boy	28wks+1day-32wks	Emergency LSCS	i/v/o PROM	7/10 8/10 9/10	Inborn	1230g	1270g	on ebf for 6 months	yes i/v/o preterm,lbw	21 days	no	no	no	no	no	0/20 low risk
mugud saheb	tanseeya mugud	45yr	32yr	7th STD	12th STD	fruitshop	Housewife	shahpur, belagavi	7343560061	20k/month	sabiya	18 months	girl	28wks+1day-32wks	Emergency LSCS	i/v/o PV leak (18days)	5/10 7/10	Inborn	1000g	1090g	on ebf for 6 months	yes i/v/o extreme preterm , vlbw	1 month 5 days	no	no	no	no	no	0/20 low risk
mugud saheb	tanseeya mugud	45yr	32yr	7th STD	12th STD	fruitshop	Housewife	shahpur, belagavi	7343560061	20k/month	saba	18 months	girl	28wks+1day-32wks	Emergency LSCS	i/v/o PV leak (18days)	5/10 7/10	Inborn	900g	1030g	on ebf for 6 months	yes i/v/o extreme preterm, vlbw,rds	1 month	yes, 3 days on mechanical ventillation	no	no	yes i/v/o pneumonia	4 days	0/20 low risk
shankar dasgopal	savita shankardas gopal	39yr	35yr	12th STD	12th STD	electrician	Housewife	ghattaprabha	7019301286	7k/month	aradhya	21 months	girl	28wks+1day-32wks	Emergency LSCS	i/v/o severe pre-eclampsia and one twin in absent end diastolic with FGR	7/10 9/10 10/10	Inborn	1310g	1510g	on ebf for 6 months	yes i/v/o extreme lbw, lbw	1 month	no	no	no	no	no	0/20 low risk
vishal badiwale	aishwarya vishal	32yr	30yr	SSLC	SSLC	company worker	Housewife	shahpur, belagavi	7996623018	15k/month	sanvi	16 months	girl	37wks-38wks+6days	Assisted Vaginal Delivery	Ventouse assisted	7/10 9/10 10/10	Inborn	1980g	1900g	on ebf for 6 months	yes i/v/o nnh	3 days	no	no	no	no	no	0/20 low risk
rajiv rayuntula	vidya rajiv rayuntula	27yr	24yr	10th STD	1oth STD	coolie	Housewife	shahpur, belagavi	7760114421	10k/month	arosh	18 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o FGR with oligohydramnios with increased resistance on doppler	7/10 9/10	Inborn	1500g	1620g	on ebf for 6 months	yes i/v/o preterm,lbw	15 days	no	no	no	no	no	0/20 low risk
praveen sansuddi	archana praveen sansuddi	39yr	33yr	BA	BA	engineer	Housewife	vijayanagar, belagavi	9986031337	30k/month	sandeep	17 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o PV bleed with placenta previa	6/10 8/10 9/10	Inborn	2130g	2160g	on ebf for 6 months	yes i/v/o lbw	8 days	no	no	no	no	no	0/20 low risk
vijay hiremath	savita vijay hiremath	32yr	20yr	SSLC	SSLC	farmer	Housewife	chikkodi	8746009703	12k/month	prabhu	18 months	boy	37wks-38wks+6days	NVD		6/10 8/10 9/10	Inborn	3000g	2890g	on ebf for 7 months	yes i/v/o ttnb	15 days	yes, 6 days	no	no	no	no	0/20 low risk
allwyn frenandez	violet allwyn fernandez	36yr	34yr	BSC	BSC	Sr supervisor	Housewife	hukkeri	8095958132	25k/month	joel	19 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o increased resistance on doppler	6/10 9/10 10/10	Inborn	1360g	1420g	on ebf for 6 months	yes i/v/o preterm , lbw,rds	13 days	yes, cpap ventilation for 3 days	no	no	no	no	0/20 low risk
sainath patil	anuja sainath patil	32yr	30yr	BE	BE	engineer	engineer	Belagavi	9738331119	45k/month	sheryansh	16 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o oligohydramnios	7/10 8/10 9/10	Inborn	1768g	1772g	on ebf for 6 months	yes i/v/o preterm, lbw	15 days	no	no	no	no	no	0/20 low risk
chetan devi	priya chetan devi	30yr	29yr	BE	Diploma	architect	Housewife	shahpur, belagavi	7406455654	25k/month	satwik	19 months	boy	28wks+1day-32wks	Emergency LSCS	i/v/o severe oligohydramnios with PROM	7/10 9/10	Inborn	1184g	1210g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
shivabasayya	vidya shivabasayya	34yr	32yr	BCom	MCom	employee in vgaurd company	Housewife	kangrali, belagavi	9620646945	20k/month	atharv	18 months	boy	28wks+1day-32wks	Emergency LSCS	i/v/o PROM (>=36hrs)	7/10 8/10 10/10	Inborn	1960g	1940g	on ebf for 6 months	yes i/v/o preterm, lbw , rds	21 days	yes, cpap ventilation for 4 days	no	no	no	no	0/20 low risk
shivappa balol	roopa shivappa balol	33yr	30yr	Degree	SSLC	farmer	Housewife	shivagalli	9738890168	15k/month	spoorthi	20 months	girl	32wks+1day-36wks+6days	Emergency LSCS	i/v/o pre eclampsia	7/10 9/10	Inborn	2120g	2100g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk

rajendra vitkar	pooja rajendra vitkar	31yr	22yr	B.Pharm	12th STD	medical representative	Housewife	ratnagiri, belagavi	8975792655	30k/month	shreya	20 months	girl	32wks+1day-36wks+6days	Emergency LSCS	i/v/o oligohydramnios	7/10 9/10	Inborn	1730g	1950g	on ebf for 6 months	yes i/v/o preterm,lbw	12 days	no	yes cons	no	no	no	0/20 low risk
amruth	amruth	amruth	amruth	amruth	BE	Range forest officer	Housewife	Belagavi	7019689601	45k/month	siddarth	18 months	boy	37wks-38wks+6days	NVD		7/10 9/10 10/10	outborn	2700g	2500g	on ebf for 5 months	yes i/v/o hypoglycemia	13 days	yes, 8 days	no	yes	yes i/v/o seizure, in may 202	1 day	0/20 low risk
veeresh mathapati	vijayalaxmi mathapati	33yr	31yr	MBA	Degree	private employee	Housewife	Belagavi	8861662372	35k/month	prisha	23 months	girl	32wks+1day-36wks+6days	Elective LSCS	i/v/o PROM	7/10 9/10	Inborn	1100g	1060g	on ebf for 6 months	yes i/v/o preterm, vlbw	26 days	no	yes (candida)	no	no	no	2/20 low risk
praveen babu padekar	shamal praveen	34yr	28yr	10th STD	1oth STD	salesman	Housewife	shahpur, belagavi	9620305606	12k/month	manvi	18 months	girl	28wks+1day-32wks	Emergency LSCS	i/v/o pre eclampsia	7/10 9/10	Inborn	950g	1090g	on ebf for 6 months	yes i/v/o extreme preterm,vlbw	40 days	yes, 15 days	no	yes	no	no	10/20 high risk
afzal	alina afzal	28yr	22yr	7th STD	12th STD	autorikshaw driver	Housewife	rukmini nagar	9987654311	10k/month	hasain	17 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o PV leak & oligohydramnios	7/10 9/10	Inborn	2000g	1800g	on ebf for 6 months	yes i/v/o preterm,lbw	7 days	no	no	no	no	no	0/20 low risk
adviappa	savita adviappa	34yr	25yr	12th STD	1oth STD	farmer	Housewife	Belagavi	9969259342	10k/month	kushi	22 months	girl	32wks+1day-36wks+6days	Emergency LSCS	i/v/o late onset FGR with increase in resistance	6/10 8/10 9/10	Inborn	900g	1030g	on ebf for 6 months	yes i/v/o preterm low birth weight	3 days	no	no	no	no	no	0/20 low risk
subash	vidyashree	36yr	28yr	MBA	BSC	accountant	Housewife	gokak	9916260030	30k/month	vyom	24 months	boy	32wks+1day-36wks+6days	NVD		7/10 9/10	Inborn	1490g	1550g	on ebf for 6 months	yes i/v/o preterm,lbw	8 days	no	no	no	no	no	0/20 low risk
vittal nander	laxmi vittal nander	31yr	26yr	12th STD	12th STD	farmer	Housewife	gokak	9743874661	15k/month	harshavardhan	22 months	boy	37wks-38wks+6days	NVD		8/10 9/10	Inborn	2400g	2240g	on ebf for 6 months	yes i/v/o ttnb	4 days	no	no	no	no	no	0/20 low risk
lokesh malode	goutami lokesh	32yr	27yr	Degree	12th STD	construction supervisor	Housewife	kakati, belagavi	9739797479	25k/month	kishan	21 months	boy	37wks-38wks+6days	Emergency LSCS	i/v/o breech	n/c	outborn	2600g	2530g	on ebf for 6 months	yes i/v/o term respiratory distress	11 days	no	no	no	no	no	0/20 low risk
kashinath hiremath	jyothi kashinath hiremath	30yr	26yr	Degree	12th STD	self employee	Housewife	khanapur	7349707472	25k/month	kishan	19 months	boy	28wks+1day-32wks	Emergency LSCS	i/v/o severe oligohydramnios with FGR	7/10 9/10	Inborn	1300g	1280g	on ebf for 6 months	yes i/v/o preterm respiratory distress	16 days	yes, cpap ventilation for 1 day	no	no	no	no	0/20 low risk
tippana kamble	poornima tippana	31yr	26yr	12th STD	12th STD	farmer	Housewife	kakati, belagavi	9723460029	15k/month	shreya	21 months	girl	32wks+1day-36wks+6days	Emergency LSCS	i/v/o pre eclampsia	8/10 10/10	Inborn	1250g	1550g	on ebf for 6 months	yes i/v/o preterm, vlbw	29 days	no	yes (Ecoli & klebsiella sepsis)	no	no	no	0/20 low risk
vaman patil	pratiksha vaman patil	33yr	29yr	Degree	12th STD	supervisor	Housewife	yaddalagadda, belagavi	9986938690	22k/month	saketh	20 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o transverse lie with severe oligohydramnios	7/10 10/10	Inborn	1800g	1860g	on ebf for 6 months	yes i/v/o late preterm	6 days	no	no	no	no	no	0/20 low risk
umesh patil	reshma umesh patil	30yr	24yr	10th STD	10th STD	coolie	Housewife	hukkeri, belagavi	8792517207	18k/month	basavraj	20 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o respiratory distress	7/10 9/10	Inborn	1440g	1380g	on ebf for 6 months	yes i/v/o LBW , Respiratory distree	24 days	no	no	no	no	no	0/20 low risk
babruvahan pujeri	siddavva babruvahan	33yr	28yr	10th STD	10th STD	factory worker	Housewife	kangrali, belagavi	9590532666	20k/month	karthik	17 months	boy	28wks+1day-32wks	NVD		6/10 8/10	Inborn	1370g	1470g	on ebf for 6 months	yes i/v/o LBW , Respiratory distree	14 days	no	no	no	no	no	0/20 low risk
sunil vadagole	pooja sunil vadagole	30yr	28yr	MSC	MSC	lecturer in pvt college	lecturer in pvt college	vadagon, belagavi	9164557964	28k/month	aarha	18 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o fetal distress	6/10 7/10	Inborn	1800g	1740g	on ebf for 6 months	yes i/v/o preterm low birth weight	15days	no	no	no	no	no	0/20 low risk
sunil vadagole	pooja sunil vadagole	30yr	28yr	MSC	MSC	lecturer in pvt college	lecturer in pvt college	vadagon, belagavi	9164557964	28k/month	aravind	18 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o fetal distress	6/10 7/10	Inborn	1500g	1520g	on ebf for 6 months	yes i/v/o preterm low birth weight, nnh	12days	no	no	no	no	no	0/20 low risk
sambhaji babugavade	late sambhaji babugavade	29yr	27yr	10th STD	10th STD	farmer	Housewife	sulebhavi, belagavi	9449228611	12k/month	akash	17 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o severe pre eclampsia	6/10 7/10	Inborn	1600g	1550g	on ebf for 6 months	yes i/v/o preterm,lbw	17 days	yes, 3 days on mechanical ventillation	no	no	no	no	0/20 low risk
yallappa kakatar	uma yallappa kakatar	26yr	23yr	B.Com	10th STD	accountant	Housewife	vaibhav nagar, belagavi	7847869191	35k/month	swaroop	20 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o fetal growth retardation with oligohydramnios	7/10 9/10	Inborn	1900g	2000g	on ebf for 6 months	yes i/v/o preterm low birth weight, RDS	20 days	yes, cpap ventilation for 2 days	no	no	no	no	0/20 low risk
yallappa kakatar	uma yallappa kakatar	26yr	23yr	B.Com	10th STD	accountant	Housewife	vaibhav nagar, belagavi	7847869191	35k/month	sakshi	20 months	girl	32wks+1day-36wks+6days	Emergency LSCS	i/v/o fetal growth retardation with oligohydramnios	7/10 9/10	Inborn	1000g	1080g	on ebf for 6 months	yes i/v/o preterm low birth weight, RDS	20 days	no	no	no	no	no	0/20 low risk
vikas patil	priyanka vikas patil	32yr	31yr	MBA	MCA	sales executive	Housewife	vaibhav nagar, belagavi	9742130316	35k/month	vishnu	18 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o PPROM > 12hrs	7/10 8/10	Inborn	1980g	1870g	on ebf for 6 months	yes i/v/o early preterm, LBW, NNH	18 days	yes, cpap ventilation for 4 days	no	no	no	no	0/20 low risk
Tushar pawar	priyanka tushar pawar	28yr	25yr	SSLC	SSLC	agricultural coolie	agricultural coolie	balekundri, belagavi	9632439018	10k/month	samrath	22 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o severe pre eclampsia	7/10 9/10	Inborn	1700g	1720g	on ebf for 6 months	yes i/v/o late preterm SGA	7 days	no	no	no	no	no	0/20 low risk
kiran chirala	byula kiran	28yr	24yr	10th STD	Degree	factory worker	Housewife	shahpur, belagavi	9886132276	15k/month	manjunath	19 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o MCDA twins with mother having GDM with PV leak	7/10 9/10 10/10	Inborn	2070g	1880g	on ebf for 6 months	yes i/v/o LBW ,	7 days	no	no	no	no	no	0/20 low risk
kiran chirala	byula kiran	28yr	24yr	10th STD	Degree	factory worker	Housewife	shahpur, belagavi	9886132276	15k/month	manisha	19 months	girl	32wks+1day-36wks+6days	Emergency LSCS	i/v/o MCDA twins with mother having GDM with PV leak	7/10 9/10 10/10	Inborn	2170g	2180g	on ebf for 6 months	yes i/v/o LBW ,	7 days	no	no	no	no	no	0/20 low risk
ramling sawant	sonali ramling sawant	30yr	28yr	12th STD	12th STD	farmer	Housewife	Belagavi	9552231861	15k/month	sakshi	20 months	girl	32wks+1day-36wks+6days	Emergency LSCS	i//v/o DCDA twins	7/10 10/10	Inborn	1600g	1640g	on ebf for 6 months	yes i/v/o preterm low birth weight	10 days	no	no	no	no	no	0/20 low risk
sandeep patil	reshma sandeep patil	27yr	23yr	11th STD	12th STD	coolie	Housewife	angol, belagavi	7387954586	12k/month	rasika	19 months	girl	37wks-38wks+6days	Assisted Vaginal Delivery	Ventouse assisted	5/10 6/10	Inborn	3150g	2960g	on ebf for 6 months	yes i/v/o RDS, nnh	10 days	no	no	no	no	no	0/20 low risk
praveen sheelavant	manjula praveen sheelavant	28yr	23yr	Degree	Degree	business	Housewife	hindwadi, belagavi	8970563239	40k/month	ruhi	21 months	girl	37wks-38wks+6days	Elective LSCS	i/v/o breech	7/10 9/10	Inborn	2300g	2330g	on ebf for 6 months	yes i/v/o sepsis	7 days	no	no	no	no	no	0/20 low risk
akshay kondaskop	akshara akshay kondaskop	29yr	26yr	Degree	12th STD	accountant	Housewife	shahpur, belagavi	9620350598	21k/month	ashritha	18 months	girl	32wks+1day-36wks+6days	NVD		9/10 10/10	Inborn	2250g	2180g	on ebf for 6 months	yes i/v/o LBW ,	5 days	no	no	no	no	no	0/20 low risk
parsharam munolkar	vaijanta parashram munolkar	34yr	30yr	SSLC	B.Com	business	Housewife	veerabhadra nagar, belagavi	8867319822	50k/month	sankeet	19 months	boy	28wks+1day-32wks	Emergency LSCS	i/v/o severe pre eclampsia	7/10 9/10	Inborn	1505g	1580g	on ebf for 6 months	yes i/v/o early preterm, LBW	20 days	no	no	no	no	no	0/20 low risk
rupesh gaurav	renuka rupesh gaurav	31yr	27yr	12th STD	10th STD	farmer	Housewife	belagavi	9900817155	18k/month	aravind	19 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o pre eclampsia	5/10 7/10	Inborn	2000g	1925g	on ebf for 6 months	yes i/v/o RDS, LBW, NNH	13 days	yes, cpap ventilation for 5 days	no	no	no	no	0/20 low risk
jotiba gundpikar	radhika jotiba gundpikar	40yr	37yr	12th STD	12th STD	self employee	Housewife	khanapur, belagavi	8050424528	30k/month	sathwik	20 months	boy	37wks-38wks+6days	NVD		n/c	outborn	2600g	2580g	on ebf for 6 months	yes i/v/o RDS, shock	13 days	no	no	yes 4 days	no	no	0/20 low risk
prashant kamble	priyanka prashant kamble	31yr	27yr	BE	BE	engineer	engineer	chandgad	6320104329	35k/month	parth	19 months	boy	37wks-38wks+6days	Emergency LSCS	i/v/o fetal distress	2/10 5/10	Inborn	2230g	2320g	on ebf for 6 months	yes i/v/o meconium aspiration syndrome	15 days	yes, intubated for 2 days & cpap ventillation for 3 days	yes, cons sepsis	no	no	no	0/20 low risk
rohit hegade	kavya rohit hegade	26yr	20yr	9th STD	SSLC	business	Housewife	hindwadi, belagavi	7259259498	30k/month	vaishali	20 months	girl	26wks+6days	Emergency LSCS	i/v/o severe pre eclampsia	n/c	outborn	1200g	1330g	on ebf for 6 months	yes i/v/0 (adnitted on day 44 of life)	11 days	yes, cpap ventilation for 20 days	no	no	no	no	0/20 low risk
Naveen kakri	pooja naveen kakri	36 yr	29yr	BA	Bsc	clerk in bank	Housewife	mahantesh nagar, belagavi	9972232490	22k/month	parikshit	23 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o severe pre eclampsia	n/k	outborn	1100g	1420g	on ebf for 6 months	yes i/v/o preterm,vlbw	30 days	yes , cpap ventilation for 7 days	no	yes for 7 days	no	no	0/20 low risk
Naveen kakri	pooja naveen kakri	36yr	29yr	BA	Bsc	clerk in bank	Housewife	mahantesh nagar, belagavi	9972232490	22k/month	parisdh	23months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o severe pre eclampsia	n/k	outborn	1200g	1500g	on ebf for 6 months	yes i/v/o preterm , vlbw	30 days	yes , cpap ventilation for 7 days	no	no	no	no	0/20 low risk
waseem bapari	ruksar waseem bapari	31 yr	24 yr	10th STD	8 th std	business	Housewife	new valley nagar , belgavi	9035256604	10k/month	hussain	18 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o severe oligohydramnios with severe pre eclampsia	6/10,8/10	outborn	2200g	2200g	on ebf for 6 months	No	no	no	no	no	no	no	0/20 low risk
mahesh hiremath	suman mahesh hiremath	35 yr	33 yr	msc bed	msc bed	lecturer in pvt college	lecturer in pvt college	Ramtheerth nagar , belgavi	8971015423	35k/month	vadish	23 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o oligohydramnios	6/10,8/10	outborn	1400g	1420g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
satish mudolkar	renuka satish mudolkar	32yr	28yr	degree	12th std	supervisor in company	Housewife	hindalga, belagavi	8972342615	22k/month	aarohi	20 months	girl	32wks+1day-36wks+6days	NVD	i/v/o PPROM > 12hrs	6/10,8/10	Inborn	1750g	1770g	on ebf for 6 months	yes i/v/o preterm, lbw	9 days	no	no	no	no	no	0/20 low risk
praveen dandekar	sakshi praveen dandekar	34yr	27yr	10th STD	10th STD	farmer	Housewife	sulebhavi, belagavi	7862873241	15k/month	arjun	19months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o severe pre eclampsia	7/10,8/10	Inborn	1680g	1630g	on ebf for 6 months	yes i/v/o preterm,lbw	7 days	no	no	no	no	no	0/20 low risk

FATHER NAME	MOTHER NAME	FATHER AGE	MOTHER AGE	FATHER EDUCATION	MOTHER EDUCATION	FATHER OCUUPATION	MOTHER OCCUPATION	ADDRESS	MOBILE.NO	SOCIOECONOMIC STATUS	CHLID NAME	AGE	GENDER	POG	MODEOF DELIVERY	INDICATION	APGAR SCORE	PLACE OF BIRTH	BIRTH WEIGHT	DISCHARGE WEIGHT	FEEDING - EBF	NICU ADMISSION	NO OF DAYS OF NICU ADMISSION	VENTILATON	CULTURE POSITIVE SEPSIS	INOTROPES	ADMISSION AFTER NEONATAL PERIOD	IF YES, NO OF DAYS OF HOSPITAL STAY	M-CHART SCORE
Mahadev Patil	Arpita Mahadev Patil	27yr	20yr	10TH std	10th std	Waiter in Hotel	Homemaker	Daddimoni, Belagavi	8208852515	10k /month	Ananya	19 months	girl	37wks-38wks+6 days	NVD		8/10 10/10	INBORN	2000 g	1960g	on ebf for 6 months	yes i/v/o nnh	1 day	no	no	no	no	no	0/20 Low risk
Uttam Bukyalkar	Megha Uttam Bukyalkar	31yr	29yr	BE	Degree	Engineer	Homemaker	Kangrali, Belagavi	9739451430	45k /month	Shreyas	20 months	boy	39wks-40wks+6 days	Elective LSCS	i/v/o previous LSCS	8/10 10/10	INBORN	3500g	3482g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 Low risk
Sachin Kelvekar	Gouri sachin kelvekar	36yr	33yr	Degree	Degree	Mobile Shop	Homemaker	Shahpur, Belagavi	9448274909	22k/month	Swaransh	18 months	boy	37wks-38wks+6 days	Emergency LSCS	i/v/o PPROM < 8hrs	8/10 10/10	INBORN	2540g	2490g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 Low risk
Vishwanath Charantimath	shradda Vishwanath Charantimath	33yr	30yr	Degree	Degree	Sales Manager	Homemaker	Vaibhav nagar, Belagavi	9900889300	23k/month	Avyaan	18 months	boy	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	3400g	3380g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 Low risk
Sidappa Haijan	Shrada sidappa haijan	32yr	26yr	Degree	12th class	Police	Homemaker	rudraswamipeth, Jamkhandi	8095128498	45k /month	Arush	22 months	Boy	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	2900G	2880g	on ebf for 6 months	yes i/v/o nnh	2 days	no	no	no	no	no	0/20 Low risk
Satish Mudagann	Seemashri Satish Mudagann	32yr	26yr	Degree	12th class	supervisor	Homemaker	hirebagewadi, Belagavi	924246070	20k/month	vihan satish	21 months	boy	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	2900g	2860g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 Low risk
Prakash Magadun	Akshata Prakash Magadun	38yr	28yr	Degree	12th class	Bank clerk	Homemaker	Kusanal, Kangwadi	8951946586	20k/month	Jeeva	23 months	girl	37wks-38wks+6 days	Emergency LSCS	i/v/o absent end diastolic volume	8/10 10/10	INBORN	1760g	1720g	on ebf for 6 months	yes i/v/o LBW	8 days	no	no	no	no	no	0/20 Low risk
Bharat Balekundi	Mayuri Bharat Balakundi	26yr	25yr	12th class	Degree	Driver	Homemaker	tangi galli, handigavur	8296926605	25k/ month	Rushan	18 months	boy	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	2700g	2670g	on ebf for 6 months	yes i/v/o nnh	2 days	no	no	no	no	no	0/20 Low risk
Shoaib hussain gadag	Sana Shoaib hussain	30yr	26yr	Degree	Degree	supervisor	Homemaker	vidya nagar, 1st cross, bailhongal	7259968332	20k/month	Abid GADAG	19 months	boy	37wks-38wks+6 days	NVD		8/10 10/10	outborn	2620g	2590g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 Low risk
Wasim ahmed	sajeeda wasim ahmed	33yr	28yr	10TH std	10th std	auto rikshaw driver	Homemaker	kulkarni hakkal, Hubli	9743414209	15k/month	umer wasim ahmed	18 months	boy	39wks-40wks+6 days	NVD		5/10 7/10	outborn	3100g	3010g	on ebf for 6 months	yes i/v/o MAS	4 days	no	no	no	no	no	0/20 Low risk
Prasad Karoshi	Shruti prasad karoshi	29yr	26yr	Degree	Degree	supervisor	Homemaker	Shivaji nagar, Belagavi	9124682319	22k/month	srinath	18 months	boy	37wks-38wks+6 days	NVD		8/10 10/10	INBORN	2900g	2910g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 Low risk
Ramesh Kapari	Ashwini Ramesh Kapari	35yr	28yr	12th class	10th std	farmer	Homemaker	sasalatti, Belagavi	9606697343	10k /month	shashank	19 months	boy	37wks-38wks+6 days	Elective LSCS		8/10 10/10	INBORN	2741g	2720g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 Low risk
Viinayak sarang	swati vinayak sarang	33yr	30yr	12th class	12th class	business	Homemaker	Nehru Nagar, Belagavi	7829118405	20k/month	sumit	18 months	boy	39wks-40wks+6 days	Emergency LSCS	i/v/o FGR	8/10 10/10	INBORN	2650g	2680g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
Vinod Atkar	Tejasree Vinod Atkar	39yr	37yr	B pharm	B pharm	Medical Representato r	Pharmacist	Shahu nagar, Belagavi	9945813633	50k/month	vismit	20 months	boy	39wks-40wks+6 days	Elective LSCS	i/v/o previous LSCS	8/10 10/10	outborn	2900g	2860g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
Ankit Sutar	Mamata ankit sutar	33yr	30yr	Degree	12th class	Graphic Designer	Homemaker	Basavanagar, Belagavi	8861681309	20k/month	ovi	22 months	girl	39wks-40wks+6 days	Elective LSCS	on maternal request	8/10 10/10	outborn	2900g	3000g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
maruti kalehelkar	mahadevi maruti kalehelkar	31yr	26yr	12th class	10th std	farmer	Homemaker	jamboti, kolhapur	9590911880	20k/month	ganesh	18 months	boy	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	3000g	3120g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
Amin Saif	Tabreez Amin Saif	32yr	30yr	12th class	10th std	mechanic	Homemaker	Shivaji nagar, Belagavi	8147862327	15k/month	Mohammed	18 months	boy	39wks-40wks+6 days	Elective LSCS	i/v/o non progression of labour	8/10 10/10	outborn	2900g	2880g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
Kempana talwar	kalyani kempanna talwar	31yr	29yr	B.Com	Degree	Accountant	Homemaker	Hebbal, Hukkeri	9741492507	30k/month	kanishk	19 months	boy	37wks-38wks+6 days	NVD		8/10 10/10	INBORN	2900g	2880g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
mallappa gandy	chanamma mallappa gandy	33yr	26yr	Degree	not educated	supervisor	Homemaker	honaga, belagavi	9342437611	20k/month	Mahantesh	20 months	boy	37wks-38wks+6 days	Emergency LSCS	i/v/o oligohydramnios	8/10 10/10	outborn	2620g	2600g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
santosh vlabhi mohat	suvarna vlabhi mohat	32yr	28yr	10TH std	10th std	farmer	Homemaker	yadalgud, gokak	8867421960	20k/month	devasena	18 months	girl	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	2800g	2780g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
Amol Jadhav	Mamta Amol Jadhav	37yr	27yr	Degree	M.SC Nursing	business	Staffnurse	Shivaji chowk, Belagavi	9538451489	50k/month	Naryani	18 months	girl	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	2700g	2680g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
Ramappa Gundyagol	Laxmi ramappa Gundyagol	28yr	22yr	GNM Nursing	12th class	Nursing	Homemaker	honaga, belagavi	8431311540	20k/month	sanvi	19 months	girl	39wks-40wks+6 days	Emergency LSCS	i/v/o FGR	8/10 10/10	INBORN	2500g	2380g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
Dr Vijay Patil	Dr Sharada	33yr	29yr	MBBS MS	MBBS MS	Doctor	doctor	sadashiv nagar, belagavi	8971670453	1 lakh/ month	Vansh	17 months	boy	32wks+1day-36wks+6days	Emergency LSCS	i/v/o breech presentation	8/10 10/10	outborn	2100g	2080g	on ebf for 6 months	yes i/v/o preterm	7 days	no	no	no	no	no	0/20 low risk
Mohan Rathod	pooja mohan rathod	32yr	30yr	Degree	Degree	kirana shop	Homemaker	near govt pu college, nayangalli	8951821630	20k/month	dhruvi	24months	girl	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	3100g	3060g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
mohammed saleem makandar	farheen mohammed	31yr	24yr	12th class	10th std	auto rikshaw driver	Homemaker	ashok nagar, belagavi	9741862578	10k /month	ayeera	17 months+M1 M19:M26	girl	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	2740g	2721g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
dattatrey somal	Saraswati	36yr	32yr	GNM Nursing	GNM Nursing	staff nurse	Staffnurse	kotgyal	9844018108	40k/montha	satvik	18 months	boy	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	2900g	2880g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
prashanth huddar	mahadevi prashanth huddar	35yr	25yr	12th class	10th std	office clerk	Homemaker	gadad galli, mahalingapur	9731559217	15k/month	yaduvir	20 months	boy	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	2900g	2860g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
mahesh bhogan	poonam mahesh bhogan	30yr	26yr	12th class	12th class	coolie	Homemaker	ganeshpur, belagavi	8867727400	15k/month	praneeth	20 months	boy	37wks-38wks+6 days	Elective LSCS	on maternal request	7/10 10/10	INBORN	2820g	2800g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
sanju gatti	geetha sanju gatti	32yr	30yr	B.com	Degree	Clerk in govt office	Homemaker	tanaji galli, belagavi	8862462321	15k/month	santosh	19 months	boy	37wks-38wks+6 days	NVD		7/10 10/10	outborn	2800g	2760g	on ebf for 6 months	no	no	no	no	no	yes (Diagnosis - Meningoencephali tis)	14 days	0/20 low risk
Basavaraj Chougale	Bharati B Chougale	38yr	35yr	Degree	12th class	clerk in eng. Ccollege	Homemaker	bastiulagaddi, khanapur	9731209919	20k/month	sachi	16 m0nths	girl	39wks-40wks+6 days	Emergency LSCS	i/v/o pre eclampsia	8/10 10/10	INBORN	3200g	3180g	on ebf for 6 months	yes i/v/o nnh	2 days	no	no	no	no	no	0/20 low risk
deepak kalgate	renuka deepak kalgate	28yr	26yr	10TH std	10th std	auto rikshaw driver	Homemaker	south sadar, solapur	7204420704	20k/month	ridvika	17 months	girl	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	3000g	2900g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
kiran patil	pratiksha kiran	30yr	26yr	12th class	10th std	painter	Homemaker	kalkundri, chandgad	9822770883	25k/ month	shandul	18 months	boy	39wks-40wks+6 days	Elective LSCS		8/10 10/10	INBORN	2900g	2820g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
basavaraj karishetti	sujata basavaraj karishetti	32yr	30yr	Msc Nursing	Degree	Nursing officer	social worker	shanti nagar, belagavi	9742401229	30k/month	trishul	21 months	boy	37wks-38wks+6 days	Emergency LSCS	i/v/o PPROM	6/10 8/10 10/10	INBORN	2000g	1920g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
Rajendra kotagi	shilpa rajendra kotagi	28yr	26yr	Degree	12th class	supervisor	Homemaker	ramtheerth nagar, belagavi	9916323181	25k/ month	avnika	22 months	girl	39wks-40wks+6 days	Elective LSCS		8/10 10/10	INBORN	2900g	2820g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
sohail khan	Tahazeen sohail kahn	23yr	22yr	10TH std	9th class	auto rikshaw driver	Homemaker	Kangrali, Belagavi	8432687469	10k/month	anish	18 months	boy	37wks-38wks+6 days	NVD		8/10 10/10	INBORN	2800g	2690g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk
ibrahim	sabeena ibrahim	32yr	30yr	SSLC	SSLC	auto rikshaw driver	Homemaker	hirebagewadi, Belagavi	9620423456	15k/month	arkam	21 months	boy	39wks-40wks+6 days	NVD		8/10 10/10	outborn	2800g	2761g	on ebf for 6 months	no	no	no	no	no	no	no	0/20 low risk

Dattatrey hittekar	manisha D Hittekar	29yr	28yr	Degree	Degree	clerk in pvt. Company	Homemaker	mangaon, chandgad	8862824562	16k/month	sanavi	22 months	girl	37wks-38wks+6 days	NVD		8/10 10/10	INBORN	2880g	2810g	on ebf for 7 months	no	no	no	no	no	no	no	no	0/20 low risk
Fakerappa naik	Shobha Fakerappa	30yr	24yr	10TH std	10th std	mechanic	Homemaker	islampur, hukkeri	7259226365	10k/month	samavel	20 months	boy	39wks-40wks+6 days	NVD		9/10 10/10	outborn	2760g	2680g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Satishnaik	sangeeta satish	33yr	27yr	Degree	12th class	supervisor	Homemaker	honaga, belagavi	7996042959	18k/month	pershuram	17 months	boy	39wks-40wks+6 days	Emergency LSCS	i/v/o fetal distress	8/10 10/10	outborn	2620g	2590g	on ebf for 7 months	no	no	no	no	no	no	no	no	0/20 low risk
H Hallenakar	Rekha Hallenakar	26yr	24yr	12th class	10th std	farmer	Homemaker	honaga, belagavi	9972207319	12k/month	Darshan	19 months	boy	37wks-38wks+6 days	NVD		9/10 10/10	INBORN	2900g	2841g	on ebf for 7 months	no	no	no	no	no	no	no	no	0/20 low risk
Kishor mutagekar	savitri kishor mutagekar	30yr	28yr	MBA	Degree	marketing agent	Homemaker	hukkeri	9019796533	20k/month	manthan	19 months	boy	39wks-40wks+6 days	NVD		9/10 10/10	INBORN	2800g	2710g	on ebf for 7 months	no	no	no	no	no	no	no	no	0/20 low risk
pasker paes	shalini pasker paes	29yr	24yr	Degree	Degree	supervisor	Homemaker	nandihalli	9845988675	15k/month	pristan	23 months	boy	37wks-38wks+6 days	Elective LSCS	i/v/o maternal request	9/10 10/10	INBORN	2960g	2920g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
prakash belgavkar	snehal prakash belgavkar	32yr	30yr	Degree	Degree	clerk in pvt. Company	Homemaker	ramlinga galli, belagavi	6361496522	20k/month	pranav	21 months	boy	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	2900g	2840g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Deepak patil	lakshmi deepak patil	32yr	30yr	12th class	10th std	farmer	Homemaker	honaga, belagavi	7483543708	15k/month	ishan	21 months	boy	37wks-38wks+6 days	Emergency LSCS	i/v/o pre eclampsia	8/10 10/10	INBORN	3100g	3080g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
raju gourav	reshma raju gourav	29yr	26yr	Degree	12th class	Mobile Shop	Homemaker	maratha colony, belagavi	7022001019	15k/month	rahul	20 months	boy	37wks-38wks+6 days	NVD		8/10 10/10	INBORN	2800g	2790g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
rajashekhar chava	veera rajashekhar chava	34yr	31yr	BE	BSC	Engineer	Homemaker	shivagiri, dharwad	9845404021	15k/month	aradhya	19 months	girl	37wks-38wks+6 days	Elective LSCS	i/v/o twins	8/10 10/10	INBORN	2700g	2690g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
pavan kumar gungavepatil	harshada pavan patil	34yr	26yr	12th class	10th std	worker in hotel	Homemaker	ganeshpur, belagavi	8625868084	15k/month	isha	20 months	girl	37wks-38wks+6 days	NVD		8/10 10/10	INBORN	2900g	2880g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
arun ghevade	milan arun ghevade	33yr	30yr	Degree	12th class	supervisor	Homemaker	Kangrali, Belagavi	9980867231	16k/month	mayank	20 months	boy	39wks-40wks+6 days	NVD		9/10 10/10	INBORN	2860g	2790g	on ebf for 7 months	no	no	no	no	no	no	no	no	0/20 low risk
mahantesh giremnakar	kavya mahentesh	31yr	26yr	12th class	12th class	farmer	Homemaker	hirebagewadi, Belagavi	8073842499	10k/month	nikita	19 months	girl	39wks-40wks+6 days	NVD		9/10 10/10	INBORN	2600g	2540g	on ebf for 7 months	no	no	no	no	no	no	no	no	0/20 low risk
Ajo T paulere	Preeti Ajo	37yr	37yr	Msc Nursing	Msc Nursing	nurse	nurse	yernkalam, kerala	8197789238	30k/month	hannah	16 m0nths	girl	37wks-38wks+6 days	NVD		9/10 10/10	INBORN	2500g	2420g	on ebf for 7 months	no	no	no	no	no	no	no	no	0/20 low risk
aslam sayyed	fatima aslam sayyed	26yr	32yr	Degree	12th class	supervisor	Homemaker	kangral galli, belagavi	9036366736	20k/month	khayyam	24 months	boy	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	2940g	2820g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Bhavkanna birje	ashwini bhavkanna birje	32yr	28yr	Degree	Degree	worker in hindal.co	Homemaker	kadoli, belagavi	7026744200	18k/month	geetha	18 months	girl	37wks-38wks+6 days	Elective LSCS	i/v/o previous LSCS	7/10 10/10	INBORN	2700g	2680g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
waseem alwad	gousiya waseem alwad	30yr	28yr	12th class	10th std	mechanic	Homemaker	azam nagar, belagavi	7204481006	15k/month	suhail	17 months	boy	37wks-38wks+6 days	NVD		8/10 10/10	INBORN	3200g	3100g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
chetan arbhavi	charvi chetan arbhavi	31yr	27yr	Degree	Degree	Medical Representato r	Homemaker	sahyadri nagar, belagavi	7795498164	25k/ month	isha	17 months	girl	37wks-38wks+6 days	Emergency LSCS	i/v/o pre eclampsia	8/10 10/10	INBORN	2700g	2690g	on ebf for 6 months	yes i/v/o nnh	2days	no	no	no	no	no	no	0/20 low risk
aditya ingovle	rani aditya ingovle	33yr	30yr	Degree	12th class	staff incharge in company	Homemaker	samarth nagar, belagavi	8494879879	20k/month	shriya	19 months	girl	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	3200g	3210g	on ebf for 6 months	yes i/v/o nnh	2 days	no	no	no	no	no	no	0/20 low risk
Vikersh terdalkar	Shweta vikersh terdalkar	30yr	27yr	BE	BE	Electrical engineers	Homemaker	Sadashivnagar, belagavi	8310051877	60k/month	Trisha	17 months	Girl	37 wks - 40wks+6days	Elective LSCS	ON MATERNAL REQUEST	8/10 10/10	INBORN	3300g	3280g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Akshay kochai	Gayathri Akshay kochai	31yr	27yr	Degree	Degree	Supervisor	Homemaker	Ramtirth nagar, belagavi	9591854963	20k/month	Swetha	19 months	Girl	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	3300g	3200g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Suni shidda goudar	Shilpa sunil shidda goudar	29yr	26yr	12th std	10th std	Farmer	Homemaker	Rudrapur, belagavi	9126243826	12k/month	Shivansh	20 months	Boy	37wks-38wks+6 days	Elective LSCS	i/v/o previous LSCS	8/10 10/10	INBORN	2900g	2880g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Yuvraj patil	Vidya yuvraj patil	32yr	30yr	Degree	Degree	Supervisor	Homemaker	Topinaktti, khanapur	8095680721	18k/month	Vaibhav	16 months	Boy	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	3100g	3090g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Ravi sadhunavar	Priyanka ravi sadhunavar	32yr	30yr	Degree	12th std	Warden in pvt hostel	Homemaker	Kittur, belagavi	7022124390	20k/month	Rupesh	16 months	Boy	39wks-40wks+6 days	Emergency LSCS	i/v/o oligohydramnios with FGR	7/10 10/10	INBORN	2400g	2390g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
vital patil	Jyothi vital patil	34y	30yr	12th std	10th std	Shift incharge	Homemaker	Laxmi galli, khanapur	9902417353	20k/month	ARADHYA	23 MONTHS	GIRL	37wks-38wks+6 days	Emergency LSCS	i/v/o non progression of labour	8/10 10/10	INBORN	330pg	3240g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Dattatrey walad	Shivleela dattarey walad	30yr	24yr	12th std	10th std	Farmer	Homemaker	Bailhongal	8911927673	15k/month	Saketh	18 months	Boy	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	3100g	3080g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Manoj tukadiya	Meenakshi manoj tukadiya	32yr	28yr	BE	Degree	Electrical engineer	Homemaker	Samarth nagar, belagavi	7022264864	30k/month	AROHI	18 MONTHS	GIRL	37wks-38wks+6 days	Emergency LSCS	i/v/o pre eclampsia	8/10 10/10	INBORN	2840g	2810g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Sunil sidhagoudar	Shilpa sunil sidhagoudar	34yr	29yr	10th std	2nd std	Farmer	Homemaker	Basapur, hukkeri	9140854869	10k/month	Viswas	19months	Boy	39wks-40wks+6 days	Elective LSCS	i/v/o previous LSCS	8/10 10/10	INBORN	3300g	3260g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Nagesh patil	Surekha nagesh patil	33yr	29yr	12th std	10th std	Farmer	Homemaker	Patil galli, belagavi	9743854979	14K/MONTH	NANDAN	22 MONTHS	BOY	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	2660g	2541g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Mudassal	Simran	26yr	23yr	6th std	SSLC	business	Homemaker	CAMP, fish market, belagavi	9743327786	22k/month	Danish	16 months	Boy	39wks-40wks+6 days	Elective LSCS	MALPRESENTATION	8/10 10/10	INBORN	4000g	3860g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Saju sudan	Pooja sudan	32yr	28yr	degree	SSLC	Grinding machine operat	Homemaker	BUutramaddi, belagavi	6361629037	15K/MONTH	APPU	19 MONTHS	BOY	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	2600g	2480g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Shahid	Sabiya	39yr	32yr	SSLC	BA	Technician	Homemaker	Vaibhav nagar, belagavi	8050884218	22k/month	Aaban	22 months	Boy	39wks-40wks+6 days	Emergency LSCS	i/v/o pre eclampsia	8/10 10/10	Outborn	2500g	2300g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Shivappa hiremath	Savitri hiremath	32yr	30yr	10th std	12th std	Supervisor	Homemaker	Hirebagewadi, belagavi	9986247628	10k/month	VEDANTH	18 MONTHS	BOY	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	2900g	2810g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Vinayak hadepad	Shruti hadepad	32yr	30yr	Degree	12th std	Supervisor	Homemaker	Binkadakatti, belagavi	8971292173	10k/month	Asyanth	18months	Boy	37wks-38wks+6 days	NVD		9/10 10/10	INBORN	2920g	2910g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Ningagouda patil	Sunitha ningagouda	42yr	36yr	Uneducated	9th std	Coolie	Homemaker	Honaga , belagavi	9972464737	12K/MONTH	TANUSH	16 MONTHS	BOY	39wks-40wks+6 days	NVD		8/10 10/10	INBORN	3100g	2920g	on ebf for 7 months	no	no	no	no	no	no	no	no	0/20 low risk
Ramesh kupasi	Savitri rames kupasi	32yr	27yr	10th std	10th std	Farmer	Homemaker	Jamkhandi, belagavi	9606697434	10k/month	Shravani	19 months	Girl	37wks-38wks+6 days	NVD		8/10 10/10	INBORN	2920g	2800g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Yallappa aroa	Sharada yallappa aroa	34yr	28yr	Degree	12th std	Supervisor	Homemaker	Mugad, dharwad	8151913437	20k/month	NIRAJ	23 MONTHS	BOY	39wks-40wks+6 days	ELECTIVE LSCS	On maternal request	8/10 10/10	INBORN	3200g	2910g	on ebf for 6 months	no	no	no	no	no	no	no	no	0/20 low risk
Sanju	Shilpa sanju	28yr	22yr	7th std	7th std	Coolie	Coolie	Honaga , belagavi	9611761202	10k/month	Sandesh	19 months	BOY	37wks-38wks+6 days	NVD		8/10 10/10	Outborn	2800g	2780g	on ebf for 6 months	no	no	no	no	no	no	i/v/o cyanotic spells	6 days	0/20 low risk
Parashuram jadhav	Nikita parashuram jadhav	33yr	31yr	Degree	12th std	Supervisor in hindal.co company	Homemaker	Laxmi galli, belagavi	9535709765	28K/MONTH	ANKIT	22 MONTHS	BOY	39wks-40wks+6 days	NVD		9/10 10/10	INBORN	3200g	3110g	on ebf for 6 months	no	no	no	no	no	No	No	0/20 low risk