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# Infant and young child feeding practices among mothers of children aged 6 months -2 years in a rural area of Haryana: A qualitative study

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## **Abstract**

# **Background:**

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India, a low-middle income and a developing country is combating with a triple burden of malnutrition with a very cost-effective measure, infant and young child feeding (IYCF) practices. But there are a lot of challenges in its implementation which need to be catered. The objective of the present qualitative study was to assess IYCF practices among mothers of children aged 6 months to 2 years in a rural area of Haryana.

#### Method:

Qualitative study was carried out among mothers of children 6 months—2 years in villages of Ballabgarh block of Haryana using focussed group discussion (FGD) and in-depth interview methods. All recordings of FGDs and IDIs were transcribed into verbatim and codes were generated. Thematic analysis of the transcript of in-depth interview and FGD was performed with the help of Doc Tools in MS Word 2016.

#### Results:

The mothers had good knowledge about breastfeeding, importance of colostrum, and weaning practices of infants and children of less than 2 years. Though there is evidence of some cultural misbeliefs, most of the taboos are obsolete now. There was a knowledge gap regarding initiation and composition of complementary feeding practices. The awareness about food diversity, effects of junk food, and recommended complementary feeding practices was less.

## **Conclusion:**

There is need of creating awareness among mothers regarding importance of IYCF practices to reduce infant and under 5 mortality in rural area.

Keywords: Feeding practices, infant feeding, IYCF practice, qualitative method, rural area

#### Introduction

Globally undernutrition is responsible for 45% of deaths among children under 5 years and two-third of these deaths among infants are due to inadequate diet.[1] India hosts more than one-third of world's wasting population of children. The prevalence of wasted, stunted, and underweight population among under 5-year-old children in India are 21%, 38%, and 35%, respectively, with higher prevalence in rural areas.[2] Only 25% of new-borns are put to mother's breast within 1 h of delivery in India. According to the report of NFHS-4, though more than 50% of infants under 6 months of age are exclusively breastfed, only 8–15% children are receiving adequate diet by 2 years of age. Chronic malnutrition remains prevalent across the South Asians regions as these countries cannot afford nutritious foods or don't have the relevant information or education to make smart dietary choices.[3] The social and economic impact of malnutrition is substantial, linked to impaired cognitive development, chronic disease, and lower future earnings.

Optimized nutrition in early 1,000 days of life (from conception to 2 year age), the "critical window" ensures the best possible starts of life.[1] Apart from exclusive breastfeeding initially, initiation time of complementary feeds, its content and consistency are critical for early nutrition. The early introduction of complementary feeds before the age of 6 months can lead to the displacement of breast milk and increased risk of infections, besides the babies being physiologically immature. Moreover, inadequate, inappropriate complementary feeding, or unhygienic practices leads to recurrent and persistent infections and malnutrition that ends in growth retardation, immunodeficiency, and eventually fatal outcomes.

Infant mortality and malnutrition in child are the most sensitive indicator of a country's growth and development. Infant and young child feeding (IYCF) practice is a highly concerned global public health issue for its extensive role on child development, growth, and survival (The United Nations Children's Fund (UNICEF), 2011). To achieve Under 5 mortality rate 23 by 2025 and Infant mortality rate 28 by 2019 as per National health policy 2017, IYCF guideline needs to be followed.[4] It has various dimensions like food practices, care practices, hygiene practices, and social networking which needs multilevel support like child, mother, household, community, and society. Prior studies in Nepal found maternal employment, education, age, and media exposure as determinants of IYCF practices.[5] The common factors influencing nutritional outcome in Infant and children are socioeconomic factor of family, education level, influence of relatives, and access to safe nutrient—rich complementary food.[6,7] Implementation of correct IYCF practices at primary care level through existing network of Anganwadi workers, ANMs, and ASHA workers among mothers can substantially reduce infant and under 5 mortality especially in rural and difficult to reach areas where IMR is high and it will also be helpful to tackle the problem of malnutrition and related diseases at the primary care level.

There is a paucity of studies on IYCF practices among mothers particularly in rural area of north India. The aim of the present study was to understand the prevalent IYCF practices among mothers of children aged 6 months to 2 years in a rural area of Haryana.

## Methodology

A qualitative study was done among the stakeholders of young child feeding practices in villages of Ballabgarh block of district Faridabad, Haryana. The 28 villages in this are comprise the rural field practice area of AIIMS, New Delhi. There are two primary health centres (PHCs), namely PHC Chhainsa and PHC Dayalpur.

This study was conducted in the month of September, 2018. In-depth interviews were conducted for key-informants like Medical officer, ANMs, ASHAs, and AWWs of that area. Seven focused group discussions were conducted with mothers of children aged 6 months to 2 years in a group of 6–10 in nearby Anganwadi centres which involved active interaction to gain more insight into facilitators and barriers for the best practice. The inclusion criteria for the study was:

The participants had been a resident of the village for the past 2 years

• She must be a primary caregiver to an infant/child of age between 0 and 24 months.

• She willing to participate in the FGD with other community members.

The groups were formed based on convenient sampling and homogeneous participants. A written informed consent was taken on a consent form with signature or thumb imprint of the participant. The group discussion was guided by a moderator and was based on IYCF guidelines given by WHO. FGD guide was used by moderator to cover all points during discussion. Information regarding sociodemographic profile of participants was collected. Android based smartphone was used for recording of FGDs and IDIs. The questions focused on the following domains:

## Sociodemographic characteristics

Age of mothers, age of the child, sex of child, educational status of the mother, occupation of mother, birth order, place of delivery, socioeconomic status, type of delivery, ANC follow-up and exclusive breastfeeding (EBF) counselling obtained during ANC.

## **IYCF** practices

Time of initiation of breastfeeding after delivery of baby, any first feed/pre-lacteal feed given, continued breastfeeding, exclusive breastfeeding, weaning practices for infant feeding and complementary feeding, positioning, source of knowledge and barrier related to it and feeding of the sick child.

All recordings of FGDs and IDIs were transcribed into verbatim and codes were generated. Themes were made from related codes. Sociogram was used to present the interaction. For qualitative data, thematic analysis of the transcript of in-depth interview and FGD was performed with the help of Doc Tools in MS Word 2016. For quantitative data, analysis was done in STATA for Windows version 14.

**Ethical issues** Ethical approval for the study was obtained from the Institutional Ethics Committee, AIIMS, New Delhi, Ethical clearance letter no. IECPG-436/2018 dated 10-09-2018. All records were kept confidential by the investigators and confidentiality of participants were maintained during the analysis. All participants provided written, informed consent prior to participate in FGDs [Table 1].

**Table 1**Age distribution of mothers participated in FGDs

Age of mother (Years)	No.
<20	1
20-25	31
25-30	12
>30	2
Total	46

#### Results

Age of mothers who participated in FGDs was in the range of 20–35 years with a mean age of 25 years (SD =  $\pm 3.9$ ). The mean age of the children was 18 months (SD =  $\pm 12$  months). The range of monthly family income was Rs 3,000–50,000/-. Most of the mothers were homemaker (91%), followed by labourer 3 (5%). Only two were tailor. More than half of the mothers (63%) had formal education.

## Knowledge and perception of mothers about breastfeeding

**Exclusive breastfeeding and pre-lacteal feed** Most of the mothers knew about exclusive breastfeeding (EBF) up to 6 months of age of baby. Only few mothers were not aware of EBF. Most of the participants told that pre-lacteal feeds given commonly were *Gutti* or *Honey*, though now-a-days this practice is rare. One 25 year woman said, "shahed dete the pehle, par ab nahi."

Other pre-lacteal feed practised were jaggery, camphor tablet, kastur tablet, and tea. For example, one woman said, "Maa ka dudh suru karne ke pehle bacche ko Gud, Kapoor ki goli, Kasturi ki goli, chai dete the."

The reason for giving pre-lacteal feed was for better digestion, prevention of cough and cold, and diarrhoea. One 28-year-old mother said, "bacche ko dudh hajm hone ke liye, sardi jukham aur dast jaise bimari se bachane ke liye pehle Kasturi ki goli, gutti ya Kapoor ki goli dete the."

At birth, 99% of the institutional deliveries followed early initiation of breastfeeding. Common response regarding the benefit of EBF were:

- It provides immunity against infection and diseases. Most of the mothers said, "Maa ka dudh bimaariyon se ladne ki shakthi deta hai."
- It is good for health. One mother said, "Sehat ke liye accha hota hai."
- It does not need preparation or boiling. One 22-year-old mother of a 15-month-old baby in FGD 2 said, "Maa ka doodh taiyaar nahi karna padtha, garam nahi karna padtha hai."
- It helps in increasing longevity. A 30-year-old mother of a 9-month-old baby in FGD 5 said, "Maa ka dudh pilane se bacche ke umra badhti hai."

Other unique responses against EBF were:

Improper diet by mother affects baby's health. A 25-year-old mother of a 6-month-old baby in FGD 5 said, "Maa ke galat khan-paan se bache par asar padta hai."

- It causes diarrhoea. A 24-year-old mother of a 6-month-old baby in FGD 4 said, "Sirf maa ke dudh pilane se bacche ko dast lag jaane ki sambhavna hoti hai."
- Baby delivered by cesarean section should not be breastfed as it had risk of infection. A 25-year-old mother of a 9-month-old baby in FGD 1 said, "Operation se jinka baccha hota hai unko bacche ko maa ka dudh pilane se mana karthe hai, kyunki infection ka khatra hota hai."

**Colostrum feeding** Colostrum (*Maa ka pila gadha doodh/khees*) was given by most of mothers to their new-born babies. Some families believed it to cause jaundice. Common positive attribute among mothers regarding colostrum was:

- It is good for baby. Most of the mother said, "Maa ka khees bacche ke liye accha hota hai."
- It provides immunity against infections. One mother said, "Maa ka pehle gadha dudh bacche ko bimaariyon se ladne ki shakti deta hai."
- It complements immunization for building immunity. One 23-year-old educated mother said," Maa ka pehla pila gadha dudhteeke ki tarah rog pratikar shakti badhane me madat kartha hai."
- It provides adequate protein and energy for a baby. One mother said, "Maa ke khees se bharpur takat aur protein ki matra milti hai."

Some negative attribute among them were:

- Colostrum is too dense for a baby to digest. A 24-year-old uneducated mother of a 7 months child in FGD 4 said, "Maa ka pehla dudh nahii dete hai kyunki Gaadha hota hai aur bacha hajam nahi kar pata hai."
- It is not good for health. An uneducated 20-year-old mother of a 9 month old female infant in FGD 2 said, "Bacche ke sehat ke live Kharaab hota hai."

**Breastfeeding and weaning** EBF was given for 6 months by most of the mothers, except in some cases it was practised up to 9 months. Common response regarding the frequency of breastfeeding was every 2 hourly and on-demand feeding. One mother said, "Bacche ko jab bhook lage ya jab rone lage tab tab dudh pilate hai." This was supported other mothers too.

Occasionally weaning was started around the age of 2–3 moths of baby. A 26-year-old mother of a 13-month-old baby in FGD 4 said, "Hum bacche ko 1.5 -3 mahine baad gutti dete hai."

EBF was not practised in some cases for a female child and when birth spacing is less. Some working mothers like cattle rearers and farmers were not able to practice EBF. One working mother said, "Khet me kam karne jate hai to bahar ka doodh pilana padta hai."

Some mothers who delivered a baby by cesarean section or had inverted nipple problem reported less secretion of milk and gave baby top feed. One mother of 9-month-old child said, "Operation se bacha hone pe doodh nahi nikaltha isliye upar ka dudh pilate hai."

Practice related to positioning during breastfeeding The common position for breastfeeding among mothers was sitting position, care should be taken that milk should not go inside baby's ear canal and abdomen should be supported. For example, a 26-year-old mother of 3 children said," *Doodh baith ke pilana hai, letke nahi, Bacche ke kaan me doodh na chale jaye, bacche ke pet ko support karna chahiye.*" Some mothers told that care should be taken that baby should not be suffocated while breastfeeding and baby's head should be properly fixed by mothers' hand. A 27-year-old educated mother said, "*Bacche ko dudh pite samay, saas lene me dikkat na ho aur sir ke neeche haath rakhna hai.*" Some mothers also aware about burping of baby after feeding. A 25-year-old mother of 6 months infant in FGD 2 said, "*Doodh pilane ke baad, bacche ki pith thap thapani chahiye.*" This was supported by other 2 mothers of baby of ages 9 months and 12 months in FGD2.

#### Knowledge and perception about complementary feeding

Complementary feeding usually started at 6 months of age with cow or buffalo milk. Some rich families also gave fruits like bananas. Bottle feeding was common due to its user-friendliness for both mothers and babies than the use of spoon with a bowl. One mother said, "Baccha katori se nahi pita to bottle se dudh pilate hain."

Knowledge regarding hygiene and cleaning of feeding bottle was dependant on socioeconomic status of families and education of mother as affluent families used the practice of boiling of feeding bottle. One educated mother said," *Bottle se dudh pilao par ubal kar saf karo, nirma dal kar saf karo.*"

Educated mothers were able to take care of their babies better, knew about proper breastfeeding practices, immunization, healthy food and hygiene. Low socioeconomic status and illiterate mothers had lack of knowledge about handwashing, immunization and adequacy of baby feeding and diversity of complimentary food. Common complementary foods used for weaning of a child were Dalia, Khichdi, dal, mashed fruits, banana mixed with curd or orange juice. Some mother also stated to start with pieces of *roti* and even *sabji*. Home-made food was preferred to commercial food like Cerelac.

Commercial food consumption was minimal due to less availability of it in the village. A 30-year-old mother said, "Gaao me chote bache ke liye jyada chije nahi milti."

Most common junk foods available were biscuits, namkeen, and chocolates.

Some reasons for preferring home food were:

- Commercial food causes digestive problem. One mother said, "Bacche ka pet kharab ho jata hai, tali cheez se gas ban jati hai."
- Mixing of additives and adulterants in commercial food. One educated mother said, "Bahar ke khane me milawat hota hai."
- Too spicy commercial food. Some mothers said, "Bahar ke khane me mirch zyada hoti hai."

Some reasons for preferring commercial food:

- Food diversity is taken care of in commercial food. A 26 year educated mother said, "Cerelac mein fruits, vegetables aur bohot cheez mixed hoti hai; use dena chahiye, poshan pura karne ke liye; cerelac me protein hota hai, calcium hota hai."
- It helps in good growth and development of the baby. One mother said, "Baccha lamba hota hai aur strong hota hai."

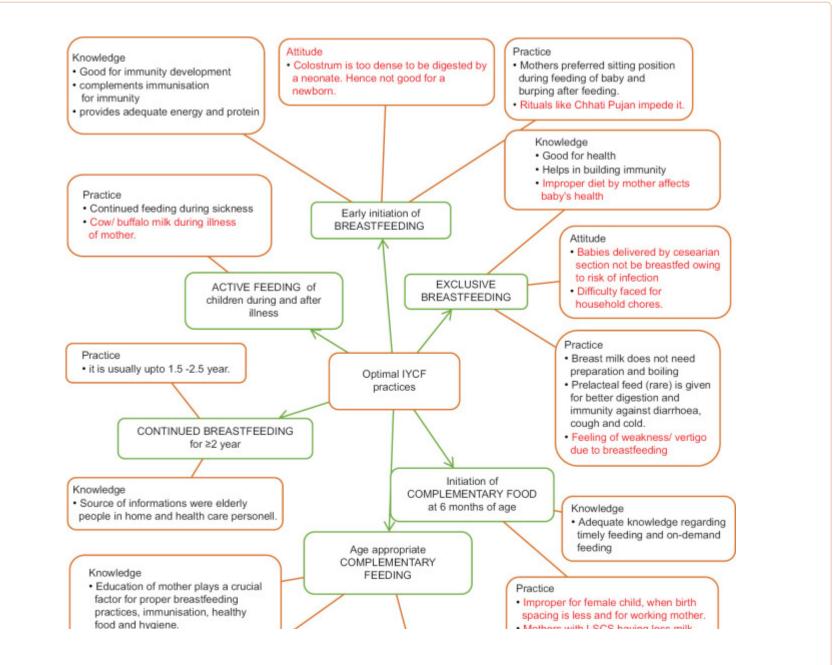
Average duration of breastfeeding is usually 1.5–2.5 years. Some mothers told that they breastfeed till 3 years. An uneducated mother having 3 children said, "*Bacha jab tak mangta hai tab tak dudh pilate hai, kabhi 3 saal tak ya kabhi jab tak dudh aa raha hai tab tak pilate hai.*" Another mother supported her.

Common source of knowledge regarding breastfeeding was doctor, mother-in-law, and other elderly people in home and ASHA worker of the area. Other sources include: Nurses and neighbourhood who had babies.

ASHA worker counselled the expectant mothers about exclusive breastfeeding and colostrum feeding during antenatal visits and post-natal home visits due to which pre-lacteal feed practices are rare now. One ASHA worker said, "Hum sare garbhvati mahilaon ko ghar-ghar jake stanpan aur pehle gadhe dudh ka mahatv samjhate hai. Prasuti-purv aur prasuti ke baad bhi maa ko stanpan ke bare me samjhate hai."

According to them, most common top feed practised was *cerelac* as it was easy to prepare and its availability. No discrimination in care of a male or female child could be noticed according to them. One ASHA worker said, "Ab gaon me bhi log beta-beti me jyada bhedbhav nahi karte hai, dono ko saman hi laad-pyar karte hai." Other ASHA workers supported her.

AWW had received induction training and annual refresher courses for feeding practices of young children. But they were not aware of proper IYCF practices. Their work was mostly limited to pre-school children education and feeding at Anganwadi centre [Figure 1].



## Open in a separate window

## Figure 1

Various facilitating factors (black) and barriers (red) implicated in IYCF practices

## Barriers/customs for breastfeeding

Some customs related to IYCF practices in the communities were honey will be fed by aunt, the child will be breastfed only in the light of moon and stars. One mother of 9-month-old child said, "Hamare yahan toh janam ke bad bacche ki buwa aake bacche ko shahad chatati hai aur uske bad maa dudh pilati hai." Still rituals like "Chhati Pujan" were being practised for starting of breastfeeding. One mother said, "Hamare yaha aaj bhi chhati pujan ke baad hi maa ka dudh pilaya jata hai." The babies of mothers belonging to socially and economically disadvantaged groups were more at risk of malnourishment as their mothers would go to work as field labourers, leaving the child in the custody of elder siblings.

## Results from in-depth interviews

According to the health workers, the decision-maker for young child feeding practices were the parents in the educated household. Earlier, mother-in-law played an important role in young child feeding. One ANM said, "Aajkal toh maa-baap padhe likhe hote hai toh wahi bacche ke khaan-paan ke bare me nirnay lete hai. Pehle dada-dadi ya gharke bujurg ke hisab se bacche ko khilaya-pilaya jata tha."

In some households, gender discrimination was prevalent leading to negligence for the need of female child, as parents were reluctant to spend money on her. Gender discrimination was more after the birth of two or three daughters to a mother. One ANM said, "Kuch kuch gharon me aaj bhi ladka-ladki me bhedbhaav kiya jata hai, khas kar ke agar ghar me paison ki dikkat ho ya dotin se jyaada ladkiyan ho."

According to the medical officer of that area, more children and less birth spacing led to the inadequacy of food, resource constraint and improper IYCF practices. Sometimes, a mother had to breastfeed two non-twin kids simultaneously.

## **Discussion**

The authors aimed to know about knowledge, attitude, and practices among the mothers of children aged 6 months to 2 years of age residing in a village of rural Haryana regarding IYCF with the help of qualitative methods like in-depth interview and focused group discussions.

The significance of early initiation of exclusive breastfeeding has been stressed upon for reduction of infant mortality. Though the literacy rate among the study population (63%) was a little less compared to the female literacy rate of India, they had good knowledge about exclusive breast feeding of infants. Pre-lacteal feed was prevalent among uneducated mothers and homedelivered babies. The most common pre-lacteal feed given was Gutti. This practice is also being rare now which was most prevalent in this area around 15 years back. [8] But, this practice is still prevalent in some parts of India like Karnataka. [9] In qualitative study done by Karmee *N et al.* in 2018 in Odisha also found that majority mothers started breastfeeding within an hour

of delivery and exclusively breastfeed till 6 months, around one-third participants gave pre-lacteal feed to baby, most common pre-lacteal feed was honey usually given for prevention of infection.[10] Time for initiation of breast feeding was mostly immediate after the delivery of baby occurred to 2 hours after it. Geetalkshmi RG *et al.* (2017) and Ahishakiye *et al.* (2019) in their qualitative study also found that most of mothers start breasfeeding within 2 hours of delivery and pre-lacteal feed was avoided.[11,12] A study conducted by Kaushal *et al.*[8] in 2005 in same area found the late initiation of breastfeeding after rising of stars as a ritual which is almost obsolete now according to our study. This could be due to advertisement and implementation of BFHI and IYCF initiatives.[10] Another study in rural Nepal found only 2/3<sup>rd</sup> of children initiated breastfeeding within an hour of birth though 90% of them was given colostrum.[5] Mothers had good knowledge and practice regarding the frequency and timing of breastfeeding as compared to the national figure of 43%.[2]

There is good awareness about colostrum feeding to new born among mothers as is reflected by other studies held in Odisha and rural area of Nepal.[5,11] Concern regarding its dense nature and digestive ability were prevalent in some mothers. A study by Pelto *et al.* done among behaviour change communication professionals also found the concerns of mothers about unhealthiest colostrum for her baby.[13]

Bottle feeding was common. There were varying practices regarding the cleaning of the bottle. Bottle feeding was done mainly due to user friendliness and working mothers. Similary finding were reported by Geethalaskmi RG *et al.* (2017) in rural Karnataka and Keith RS *et al.* (2019) in London in their qualitative study. Some reasons for bottle feeding was inadequacy of breast milk to satisfy hunger of baby and unable to express breastmilk.[11,14]

In most of the cases, weaning practice starts at an appropriate age. Inappropriate weaning occurs in working mothers, sick mothers, female child, and less birth spacing. Keith RS *et al.* (2017) in their study reported that most of mothers started weaning food around 3–4 months due to pressure by family members. Geethalksmi RG *et al.* (2017) found most of mothers were starting weaning food after 6 months of exclusive breastfeeding. Some mothers apprehension regarding inadequate milk production for a 3-month-old baby needs to be addressed which is also found in another study conducted in rural Uganda by Nakumbi J *et al.* [15] A study in rural Tanzania found poverty, poor nutrition of mothers, social and cultural belief and need to return to work are barriers for improper weaning practices. [16] Common complementary food used for weaning was cow/buffalo milk, Dalia, Khichdi, and Dal water. Most of the mother preferred home-made food than to commercial food. Food diversification out of six groups (water, milk, semi-solid food, solid food, meat, and egg) was better practised among wealthy families. [10,17] Among the six food groups, water and milk started earlier and feeding of meat or egg to baby is rare and this finding is evident in rural Nepal also. [5] This finding is also supported by a study conducted in Bangladesh, where more than —th baby was given carbohydrate rich food (gains, roots and tubers as an initiation of complementary feeding with list importance given to protein/legume (7%).

ASHAs, doctors, relatives, and neighbourhoods were an important source of information and this was evident in other low-middle income countries too.[19]

#### Limitation

The study participants may not be representative of the national population as the study area is a part of a district where acculturation is a possibility due to most of the population residing in the urban area. There might be the presence of selection bias and Hawthorn effect which might affect the result. As the study is a type of qualitative study, strength of various factors associated with IYCF practices could not be measured.

## Conclusion

Mothers are rural area are aware about IYCF practices and following EPF but still some customs and myths related to breastfeeding exist in the community. Working mothers are unable to follow IYCF practices completely. There was a paucity of knowledge regarding complimentary food and feeding frequency among mothers. Health workers, ASHAs and Anganwadi workers are playing important role in widespread of IYCF practices in rural area. These workers should be properly trained and give more emphasis on dis-advantaged population for its proper implementation.

## **Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

## **Conflicts of interest**

There are no conflicts of interest.

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All mothers of 6 months – 2 years children residing in Villages under Dayalpur PHC of Haryana participated in the study.

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