

Factors influencing the first thousand days of life. The importance of Nurturing Care

ELENA CAPITANI¹, CARLOTTA LORENZINI², ADELE BIUZZI³, LUCIA ALAIMO³, NICOLA NANTE^{1,4}

¹ Post Graduate School of Public Health, University of Siena, Italy; ² Hygiene and Epidemiology Unit, “Santa Maria alle Scotte” Teaching Hospital, Siena, Italy; ³ Degree Course in Obstetrics, University of Siena, Italy; ⁴ Department of Molecular and Developmental Medicine, University of Siena, Italy

Keywords

Nurturing care • Social support • Maternity and Child health

Summary

Background. WHO, Unicef, the World Bank and the Maternal and Child Health Partnership wrote the document “Nurturing care for early child development: a global framework action”. This paper highlights the benefits of early intervention and thus the need to invest more in health during this period. The aim of our study is to assess how much social support received by pregnant mothers can influence maternity outcomes.

Materials and Methods. The retrospective observational study was conducted on a sample of mothers enrolled via social networks, who were administered a questionnaire from 1 July to 1 September 2021. The questionnaire consisted of 37 questions, 6 of which were used to calculate the “Maternity Social Support Scale”. The ODDs Ratio was calculated.

Results. Our sample consisted of 3447 women. 59.01% were between 26 and 35 years of age. The mean Maternity Social Support Scale (MSSS) score was calculated to be 23.9 points.

A low MSSS score correlated with a higher probability of stopping breastfeeding before 6 months of age (OR: 1.2; CI: 1.1-1.4) and of having a caesarean section (OR: 1.2; CI: 1.1-1.4) and to a lower probability of having a spontaneous labour (OR: 0.9; CI: 0.7-0.9) and a spontaneous delivery (OR: 0.8; CI: 0.7-0.9). In contrast, a high MSSS score had a lower likelihood of ceasing breastfeeding before 6 months (OR: 0.8; CI: 0.7-0.9) and caesarean section (OR: 0.8; CI: 0.7-0.9) and higher likelihood of spontaneous onset labour (OR: 1.2; CI: 1.1-1.3) and spontaneous delivery (OR: 1.2; CI: 1.1-1.4).

Conclusions. Pregnancy, childbirth and maternity outcomes are strongly influenced and conditioned by the social context in which they occur and the support the woman may receive. The presence or lack of this support may affect the health of newborns.

Background

On 23 May 2018 in Geneva, WHO, Unicef, the World Bank and the Maternal and Child Health Partnership wrote the document “nurturing care for early child development: a global framework action” [1]. It represents a milestone in a more than two decades long journey during which a growing body of scientific evidence in different disciplinary fields, from neuroscience to economics, has fundamentally changed the way early child development (ECD) is understood, making us realise the damage caused by the lack of opportunities to develop to their full potential in the early years, the benefits of early intervention, and therefore the need to invest more in health, nutrition, early education, social protection in this crucial period of life [2].

The period from pregnancy to age 3 is when children are most susceptible to environmental influences [3]. That period lays the foundation for health, well-being, learning and productivity throughout a person’s whole life, and has an impact on the health and well-being of the next generation [4, 5].

A new-born baby’s brain contains almost all the neurons it will ever have. by age 2, massive numbers of neuronal

connections have been made in response to interactions with the environment, and especially interactions with caregivers [6]. This is a useful window of opportunity to lay the foundations of health and wellbeing whose effects will last a lifetime and will also be reflected in the next generation [7].

Children who do not have the opportunity to receive appropriate nurturing care during the very early years of life are more likely to have learning difficulties at school and consequently be less productive in the future. This negatively influences the well-being and prosperity of their families and societies [8, 9].

This happens through a process called epigenetics [10, 11]. Epigenetic intervention does not take place through intervention on the DNA, but on its structure. In this way, the DNA can remain quiescent, only to be faithfully transcribed when needed [12]. Unlike mutations, which involve a change in the nucleotide sequence of DNA, the epigenetic phenomenon influences gene expression without altering the sequence [13]. The most frequent epigenetic interventions are carried out by cutting or adding 2 small chemical groups: methyl (present on DNA and histones) or acetyl (present only on histones) [10, 14]. Demethylation and acetylation

result in structural remodelling of the nucleosome and subsequent transcription. These epimutations last throughout the life of the cell and can thus be passed on to subsequent generations through cell divisions [10, 14]. Thus, the environment to which a child is exposed during the first thousand days of life can condition its future growth [11].

Growing up in an optimal environment, from pregnancy to the third year, is particularly important for physical, emotional, social and cognitive development. Conversely, a negative environment impairs development, both in the short term and, more importantly, in the long term. Continuous adversity negatively influences the psychological and neurological development of young children [15, 16]. When pregnancy problems lead to low weight or prematurity, the risk of developmental problems and chronic diseases in adulthood increases [4]. Other factors that threaten early child development include inadequate maternal nutrition, exposure to environmental pollutants and toxic chemicals, mental health problems in caregivers, inadequate breastfeeding, malnutrition, illness, violence experienced, inadequate stimulation, neglect, maltreatment, disabilities, and violence at home and in the community [4]. Discrimination between boys and girls can also have negative effects on children’s development in these early years [17]. It is very difficult for families to provide care for their children when they are in extreme poverty or struggling for survival [18]. These adverse situations and lack of support can compromise the ability of families to provide adequate nurturing care for their children [1]. Indeed, women with low social support in pregnancy are more likely to have a worse health status, to seek medical help more often and to experience postpartum depression more frequently [19].

Starting from the assumption that the first 1000 days are crucial for the health of the child and the well-being of the mother-child dyad, the aim of the study is to investigate how social support can influence the course of pregnancy and motherhood.

Materials and methods

The retrospective observational study was conducted on a sample of mothers living in Italy or abroad, enrolled through various groups present on social networks, to which a questionnaire in Italian was administered ad

hoc from July to September 2021. The questionnaire consists of 37 questions, 11 of which analyse socio-demographic variables, 20 concerning current and any previous pregnancies and breastfeeding, and 6 that are part of the validated questionnaire used to calculate the Maternity Social Support Scale (MSSS).

The questionnaire used contained the following variables:

- **Socio-demographic characteristics:** Age, nationality, educational qualification, current profession, marital status;
- **Obstetrical data:** Parity, desired/expected motherhood, did she ever suffer from anxiety or depression, mode of delivery, whether planned or urgent caesarean section, onset of labour (spontaneous/induced), breastfeeding and for how many months;
- **Social Support:** Maternity Social Support Scale (MSSS)-Webster et al, 2000 [20].

The MSSS contains six items and includes questions on family support, friendship network, help from spouse, conflict with spouse, feeling controlled by spouse, and feeling unloved by spouse (Tab. I). Each item was measured on a five-point Likert scale and a total score of 30 was possible. We classified social support in to three categories: high social support (for scores 23–30), medium social support (15–22) and low social support (below 14) categories. The internal consistency of the scale was tested using Cronbach’s alpha and was found to be 0.74.

DATA ANALYSIS

Data were analyzed using STATA Version 14. First, frequency distributions of the characteristics of study population were tabulated.

Subsequently, a bivariate analysis was performed to compare MSSS score with the variables concerning childbirth and lactation by means of Chi-square tests. To see how much the score influenced pregnancy and lactation outcomes, the ODDs Ratio was used.

Results

The sample consisted of 3447 women. The demographic and obstetrical data are shown in the Table II.

Concerning the current maternity and pregnancy, 88.02% declare that they desired it and 63.53%

The majority of our sample breastfed. Analysing the data

Tab. I. Maternity Social Support Scale (MSSS).

Statements	Never	Rarely	Some of the time	Most of the time	Always
I have good friends who support me	1	2	3	4	5
My family is always there for me	1	2	3	4	5
My husband/partnet helps me a lot	1	2	3	4	5
There is a conflict with my husband/partner	5	4	3	2	1
I feel controlled by my husband/partner	5	4	3	2	1
I feel loved by my husband/partner	1	2	3	4	5

Tab. II. Demographic and obstetrical data.

Variable	N	%
Age		
15-20	25	0.7
21-25	247	7.2
26-35	2034	59
36 e 45	1095	31.8
> 45	46	1.3
Residence		
North	1335	38.7
Centre	965	28
South	730	21.2
Islands	357	10.4
Abroad	60	1.7
Education		
Primary school	12	0.3
Lower secondary school	406	11.8
Secondary school	1672	48.5
University degree	954	27.7
Specialisation/master's degree	403	11.7
Job		
Housewife	734	21.3
Unemployed	456	13.2
Self-employed	369	10.7
Employee	1578	45.8
Student	43	1.3
Part time	267	7.8
Civil status		
Single	191	5.5
Married	1937	56.2
Cohabiting	1260	36.5
Separated/divorced	58	1.7
Widowed	1	0
Number of children		
1	877	25.4
2	752	21.8
3	162	4.7
4	37	1.1
5	6	0.2
no answer	1613	46.8
Breastfeeding		
yes	2957	85.8
no	490	14.2
Months breastfeeding		
Still breastfeeding	37	1.1
1-6	613	17.8
7-12	423	12.3
>12	904	26.2
no answer	1470	42.7
Diseases		
Anxiety	630	18.3
Depression	228	6.6
Eating problems	216	6.3
Chronic Diseases	327	9.5
Other	450	13.1
No answer	1596	46.3
Delivery		
Spontaneous	2181	63.3
Caesarean section	1028	29.8
Operative	238	6.9
Labor		
Spontaneous	1844	53.5
Induced	1099	31.9
No answer	504	14.6

of women who did not breastfeed, it appears that: and 10.47% declared that they could not do so due to clinical reasons; 5.11% answered that they did not feel able to do so. 28.89% stopped breastfeeding within 6 months. Our sample answered the questions concerning the maternity social support scale according to Table III. For the item "I have good friends who support me", most of our sample answered "some of the time".

For the item "my family is always there for me", most of our sample answered "always".

For the item "my husband/partner help me a lot", most of our sample answered "always".

For the item "There is a conflict with my husband/partner", most of our sample answered "some of the time".

For the item "I feel controlled by my husband/partner", most of our sample answered "never".

Finally, to the item "I feel loved by my husband/partner", most of our sample answered "always".

The mean of the Maternity Social Support Scale (MSSS) was calculated to be 23.91 points (CI 23.80-24-03).

The breastfeeding variable gave a statistically significant difference when compared with:

- the item "My husband/my partner helps me a lot" ($p < 0.01$);
- the item "There is conflict with my husband/partner" ($p < 0.05$).

The variable when she stopped breastfeeding her first child gave a statistically significant difference when compared with:

- the item "I can always count on my family" ($p < 0.05$);
- the item "I feel controlled by my husband/partner" ($p < 0.01$).

To investigate the variability of pregnancy and maternity outcomes in relation to the MSSS score, we divided our sample into 3 score classes:

- 54 women scored < 14 ;
- 976 women scored between 15 and 22;
- 2417 women scored between 23 and 30.

No statistically significant correlations were found with the score between 7 and 14 due to the low number of our sample with this score.

On the other hand, the relationships in Table IV were found to have a medium and high score.

Those with a medium score are more likely to stop breastfeeding before 6 months, to have no labour and spontaneous delivery and to have no caesarean section.

Those with a high score are more likely to breastfeed more than 6 months, to have labour and spontaneous delivery and to have no caesarean section.

Discussion

The aim of our study was to investigate how social support influenced pregnancy and motherhood.

Almost all of the women in our sample were married or lived with the father of the child, so they almost had family stability and most wanted the current pregnancy. Most of them breastfed, but it is important

Tab. III. MSSS answers.

Statements	Never		Rarely		Some of the time		Most of the time		Always	
	N	%	N	%	N	%	N	%	N	%
I have good friends who support me	171	4.96	455	13.20	1249	36.23	797	23.12	775	22.48
My family is always there for me	59	1.71	163	4.73	521	15.11	834	24.19	1870	54.25
My husband/partner helps me a lot	65	1.89	151	4.38	662	19.21	956	27.73	1613	46.79
There is a conflict with my husband/partner	657	19.06	1138	33.01	1309	37.98	156	4.53	187	5.43
I feel controlled by my husband/partner	1773	51.44	748	21.70	759	22.02	87	2.52	80	2.32
I feel loved by my husband/partner	75	2.18	85	2.47	374	10.85	898	26.05	2015	58.46

Tab. IV. Odds ratio and MSSS

Variable	MSSS scores 15-22		
	OR	C.I.	p
Breastfeeding < 6 months	1.24	1.07 – 1.44	0.01
Spontaneous labor	0.86	0.74-0.98	0.05
Spontaneous delivery	0.83	0.71-0.96	0.05
Cesarean section	1.22	1.04-1.43	0.05
Variable	MSSS scores 23-30		
	OR	C.I.	p
Breastfeeding < 6 months	0.81	0.70 – 0.94	0.01
Spontaneous labor	1.16	1.01-1.34	0.05
Spontaneous delivery	1.2	1.04-1.40	0.05
Cesarean section	0.82	0.70-0.96	0.05

to underline that a small proportion did not feel able to do so. It is safe to assume that if these women had had adequate support, not only from their family, partner or health personnel, but also from social networks themselves, they would have been able to breastfeed [21-24]. The same applies to the small percentage of women who stopped breastfeeding early (by 6 months) [21, 23].

Concerning the variables of the maternity social support scale, the majority of our sample always has their family or husband/partner to count on, thus an important and always present support. On the other hand, it should be noted that 167 women feel controlled by their husband/partner always or most of the time. This should set an alarm bell for possible violence within the family unit, which will then affect not only the pregnancy but also the puerperium [21].

However, the average score on the maternity social support scale is high, indicating good support. It is important to highlight the statistically significant relationships between breastfeeding with the variables concerning the support received from the family and the relationship with one's husband/partner. This result confirms the data in the literature on the subject of how support from the husband/partner can also influence breastfeeding [22, 24-26]. To emphasise the importance of this support, the odds ratio also shows that a low to medium score correlates with a higher probability of stopping breastfeeding before 6 months, a lower

chance of spontaneous labour and delivery and a higher probability of caesarean section.

We know that the social support perceived by mothers during pregnancy plays a significant role as a protective factor against postpartum depression, both directly and indirectly, by reducing the negative clinical aspects of the childbirth experience [27].

Our findings regarding social support and type of childbirth are in line with those found in the literature [28-31].

The limitation of this study is that the women who participated were enrolled online, so women who are young, have an internet connection and know how to use social networks, and are therefore not representative of the general population. These are women who are also able to receive support from other mothers through social networks.

Conclusions

The results showed that most of our sample had good social support. The outcomes of pregnancy, childbirth and motherhood are strongly influenced and conditioned by the social context in which they occur and the support the woman can receive. The presence or lack of this support can affect the health of newborns. The role that all sectors, including the health sector, must play in supporting the optimal development of all children is important. An enabling environment is needed: policies, programmes and services that provide families, parents and caregivers with the knowledge and resources to ensure adequate nurturing care for their children.

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Conflict of interest statement

The authors declare that they have no conflict of interests

Authors' contributions

All Authors made substantial contributions to the concept and design, analysis and interpretation of data, and drafting and revisions.

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Correspondence: Elena Capitani, Department of Molecular and Development Medicine University of Siena, Via Aldo Moro 2, 53100 Siena, Italy. Email: capitani4@student.unisi.it

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