

Analysis of Perceived Social Support on Bonding Attachment in Mothers Giving Birth during the COVID-19 Pandemic

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ABSTRACT

Objective. Postpartum mothers need social support to promote maternal-infant bonding attachment, influencing their child's growth and development. However, the COVID-19 pandemic has introduced changes in perceived social support and bonding attachment due to physical distancing measures and community activities restrictions. This study aims to determine the effect of perceived social support on the bonding attachment in mothers who gave birth during the COVID-19 pandemic.

Methods. This was a cross-sectional study on 118 consecutively sampled mothers who gave birth from June to July 2021 in Bekasi, Indonesia. This study collected data using the Postpartum Bonding Questionnaire and Multidimensional Scale of Perceived Social Support. Stratified analysis, based on demographic factors, was done to adjust the identified associations. We used chi-square test, lambda correlation test and Cochran's and Mantel-Haenszel's test to analyze the data.

Results. Most respondents perceived low social support (57.6%) and had low bonding attachment (65.3%) during the pandemic. Nevertheless, mothers with high perceived social support tend to have 32 times higher bonding attachment than those with low social support (OR 32.4; 95% CI 10.78, 97.35; $p < 0.001$). There was moderate positive correlation between social support and bonding attachment ($r = 0.537$; $p = 0.001$). The association was still found between perceived social support and bonding attachment after controlling for parity (AOR: 23.63; 95% CI 7.88, 70.87) and working status (AOR: 28.90; 95% CI 9.52, 87.76).

Conclusion. Perceived social support plays a significant role on bonding attachment; thus, providing sufficient support for mothers is recommended. Health promotion, counselling and psychological assistance are needed to assist mothers in adapting during the pandemic to obtain support and achieve optimal bonding attachments.

Keywords: perceived social support, maternal-infant bonding attachment, COVID-19 pandemic



Paper presentation – 3rd International Conference on Health Development 2021, October 30, 2021 (Virtual).

eISSN 2094-9278 (Online)
Published: June 30, 2026
<https://doi.org/10.47895/amp.v60i12.4597>
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INTRODUCTION

Maternal-Infant bonding attachment is a crucial factor that affects a child's growth and development.¹ The bonding attachment between mother and baby is the basis for the growth and development of children. It facilitates the neurobiological processes involved in brain maturation and activation of the neuroendocrine system.² The mother-infant bonding attachment also greatly influences and even regulates the physiology and psychology of the mother. The physiological similarities and linkages inherent in mother-infant closeness enable mothers to breastfeed, bond with their babies, sensitively respond to their babies' needs, and cling to their babies; thereby protecting the baby's physical and mental health.³

Previous studies have indicated that mother-infant bonding attachment is influenced by various factors: family history, socioeconomic, cultural factors, support systems, and breastfeeding.⁴ Social support has been identified as a key factor affecting bonding attachment as mothers and babies need support to build secure bonding attachments.¹ Such support may come from husbands, parents, family, closest people, and health providers.⁴

Various types of social support for mothers include instrumental, emotional, informational, and appraisal supports. Instrumental support takes the form of substantial assistance, such as money, time, and valuable resources, including help with childcare or homework assistance.⁵ This type of support is typically met by spouses, parents, and other family members. Emotional support can be in the form of attachment and affection to make the mother feel valued. Emotional support is usually given by the closest person to relieve the mother's feelings.⁶ The most expected emotional support is the husband's support before and after birth. Information support is the provision of knowledge, advice, and education, while assessment support entails attitudes that includes acceptance and assurance statements.⁵ Information support can be obtained from healthcare providers, friends and internet sources.⁵ The support received may make mothers feel comfortable assisting in various ways in parenting, breastfeeding and achieving bonding attachment.⁷

It is essential to involve partners in efforts to build and maintain relationships with children and assist with childcare. Such participation significantly contributes to the well-being and mental health of women.⁸ Furthermore, protective factors such as a romantic relationship with a supportive partner may compensate for the negative influence in subsequent mother-infant relationship difficulties.⁹

The COVID-19 pandemic has had widespread impacts on various sectors of life, including maternal and child health in Indonesia.^{10,11} The implementation of physical distancing, restrictions on community activities and various health protocols also affected the availability of maternal and child health services at the Primary Health Care (PHC).^{12,13} This has led to decreased public access to contraceptive services with work from home activities contributing to a noted increase in unplanned pregnancies.^{14,15}

Moreover, limited sources of social support outside the nuclear family, such as extended family, peer groups and health providers, have resulted in a reduction in perceived social support.¹⁶ Furthermore, the postpartum condition has brought risks to the postpartum blues, especially for mothers in a restricted environment during the COVID-19 pandemic. These conditions can contribute to a decrease in social support for the vulnerable population and can affect the psychological status and mother-infant bonding attachment.¹⁶

West Java reported that Bekasi City is at the second place with the most cases of COVID-19, namely 28,911 cases, while at the sub-district level, East Bekasi ranks the second with a total of 368 cases. It led to anxiety among the public, including

pregnant and postpartum women.^{17,18} Based on a preliminary study in the Bekasi, it showed that mothers were anxious and worried when giving birth during the COVID-19 pandemic. The mothers said that they were afraid that their children would be exposed to COVID-19, this made the mothers withdraw from the surrounding environment and do more activities at home. Mothers also believed that information from health workers was very important during the COVID-19 pandemic and the information received by mothers was quite good. In addition, the support received by mothers varied, from low to full support from family and husbands. Mothers said the baby was fussy and often cried. This may affect the psychological condition of postpartum mothers and have an impact on the bonding attachment between mother and baby.

The main concern is that social distancing significantly impacts human relationships and the bonding between parents and newborns.¹⁹ Mothers who are dissatisfied with social support, for example, from partners, feel low bonding attachments with babies.⁸ Providing social support to breastfeeding women during a public health emergency is vital to avoid stopping breastfeeding.²⁰ There is a need to increase supportive resources for women to develop a strong and healthy emotional bond between mother and baby.¹

Social support helps protect against failure to form bonding attachments in the perinatal period and depression among mothers.^{16,21} Manifestations of inability to form emotional bonds include a lack of maternal affective involvement, increased irritability, aggressive impulses, or outright rejection of the infant.²¹ These factors can lead to abusive parenting, unsafe interactions between mother and baby, and impaired early childhood development. Therefore, it is essential to identify predictive factors for bonding failure and intervene at an early stage from the perspective of maternal mental health care.²¹

The social support felt by postpartum mothers can vary based on the characteristics of mothers and babies. Factors such as mother's parity status, and occupation, and baby's age must be considered in measuring the effect of social support on bonding attachment.⁴ Various characteristics of mothers have changed during the COVID-19 pandemic, such as parity status, occupation, family income, and perceived support.^{14,22} Therefore, the predictive factors of mother-infant bonding attachment and its correlation with perceived social support were analyzed by considering the stratification of maternal characteristics and the demographic characteristics of postpartum mothers in the COVID-19 pandemic. The results of this study can be utilized as policy recommendations for decision-makers to determine appropriate interventions for postpartum mothers, according to the category of each mother, leading to optimal outcomes.

METHODS

This was a cross-sectional study of 118 consecutively sampled postpartum mothers in Bekasi, West Java, Indonesia,

from June to July 2021. We included mothers who gave birth during the COVID-19 pandemic and the age of the baby was less than six months. We excluded mothers with other health issues. Data was collected by midwives as enumerators through face-to-face interactions with adherence to health protocols. We described the characteristics of the respondents and measured the social support and bonding attachment of postpartum mothers.

Social support was measured using the Multidimensional Scale of Perceived Social Support questionnaire (MSPSS) developed by Gregory D Zimet in 1988.²³ The MSPSS precisely measures an individual's view of the adequacy of social support. The MSPSS consisted of 12 items, which were all favourable questions. We modified the original even-point Likert scale into a 6-point Likert scale (1 =strongly disagree; 2 = disagree; 3 = somewhat disagree;4 =somewhat agree; 5= agree; and 6 = strongly agree. There were three subscales based on sources of support, namely family, friends, and significant others; Each subscale consists of 4 queries.²³ The 12-item questionnaire was shown to be valid) (r , 0.375 to 0.687) cut-off value above r of 0.361) and reliable (Cronbach alpha,0.793).

The bonding-attachment variable was measured using the Postpartum Bonding Questionnaire (PBQ). The PBQ contains 25 statements to measure the bonding attachment between mother and baby and consisted of four dimensions: relationship between mother and baby, acceptance of the baby, readiness for care, and providing security and comfort. This questionnaire uses a 4-point Likert scale with answer choices ranging from 'always' to 'never' with a score of 0 to 3 for favourable questions and 3 to 0 for unfavourable questions. The total score ranges from 0 to 75; a score of more than equal to 45 is considered as a high bonding attachment, and a score of less than 45 is considered as a low bonding attachment. The 25-item bonding attachment questionnaire was valid (r ,0.367 to 0.689; above the cut-off value for r = 0.361) and reliable (Cronbach alpha,0.901).

Mean scores were compared using chi-square test to determine the effect of social support on bonding attachment. Furthermore, the strength of the relationship or the effect of the independent variable on the dependent variables was tested using the Lambda Correlation test. Finally, to measure the effect of the independent variable (perceived social support) on the dependent variable (bonding attachment), a stratification analysis was performed using the Cochran's and Mantel-Haenszel test. Significant demographic characteristics were controlled at the bivariate test stage.

This study applied the principles of confidentiality, veracity, and non-maleficence. The research protocol received ethical clearance from the Research Ethics Commission of the Faculty of Medicine, Universitas Pembangunan Nasional Veteran Jakarta, with an Ethical Approval Letter Number: 171/IV/2021/KEPK. Data collection was carried out after obtaining informed consent from respondents and witnesses.

Table 1. Distribution of Perceived Social Support and Bonding Attachment of the Respondents

Variable	High		Low		Total	
	n	%	n	%	n	%
Bonding Attachment	41	34.7	77	65.3	118	100
Perceived Social Support	50	42.4	68	57.6	118	100

RESULTS

Most mothers had low perceived social support (57.6%) and low bonding attachment (65.3%) (Table 1). Most mothers were aged <35 years (89.8%) with babies aged 1 to3 months (61.9%), multiparous status (62.7%), not working (83.1%), and gave birth spontaneously (74.6%). Social support affected bonding attachment ($p < 0.001$). Mothers who felt high social support had a 32.4 times higher opportunity of achieving high bonding attachment than mothers who received low social support (OR 32.4%; 95% CI: 10.8,97.4) (Table 2). Factors that affected bonding attachment were parity and working status ($p < 0.05$). Meanwhile, infant age, mother's age and type of delivery did not affect bonding attachment. Most mothers with high bonding attachment were primiparous mothers (56%) and not working (73.2%).

There was a moderately strong and positive relationship between perceived social support and bonding attachment ($r = 0.537$; $p = 0.001$) (Table 3). The greater the perceived social support, the stronger the bonding attachment between mother and baby.

After adjusting for parity status, mothers who received high social support had a 23.6 times higher chance of achieving high bonding attachment than those with low social support (AOR 23.6%; 95% CI: 7.88 - 70.87) (Table 4). This result indicated that the parity status also acted as a confounding variable. It affected the opportunities achieved, which decreased the OR by 24% from 32.14 to 23.63 ($p < 0.001$). Working status also acted as a confounding variable that affects the relationship between perceived social support and bonding attachment ($p < 0.001$). Mothers who received high social support had a 28.9 times higher chance of achieving high bonding attachment than mothers who received low social support after being adjusted by their working status (AOR 28.9%, 95% CI 9.5, 87.8). There is a decrease in the OR by 11% from 32.14 to 28.90 after adjusting for the mother's working status. Thus, both demographic factors, parity and working status, were confounding variables between perceived social support and bonding attachment.

DISCUSSION

Perceived Social Support Affected Bonding Attachment in the Pandemic

Mother-infant bonding and attachment included the consistent primary caregiver (mother) needed for optimal infant development by providing protection and psychological

Table 2. Distribution of Bonding Attachment Based on the Characteristics of Respondents

Variable	Bonding Attachments						p-value	OR (95% CI)
	High		Low		Total			
	n	%	n	%	n	%		
Perceived Social Support								
High	36	72	14	28	50	100	<0.001*	32.4 (10.78-97.35)
Low	5	7	63	93	68	100		
Parity								
Primiparous	23	52	21	48	44	100	0.002*	3.41 (1.54 -7.52)
Multiparous	18	24	56	76	74	100		
Baby's Age								
1-3 months	12	27	33	73	45	100	0.148	0.55 (0.81, 4.08)
4-6 months	29	40	44	60	73	100		
Working Status								
Working	11	55	9	45	20	100	0.037*	2.77 (1.04, 7.38)
Not working	30	31	68	69	98	100		
Type of Delivery								
Caesarean Section	9	30	21	70	30	100	0.527	0.75 (0.31, 1.83)
Spontaneous	32	36	56	64	88	100		
Mother's Age								
>35 years old	5	42	7	58	12	100	0.595	1.39 (0.41-4.69)
<35 years old	36	34	70	66	106	100		

*Chi-squared test

security.²⁴ In this study, perceived social support has a positive effect on bonding attachment in a pandemic situation. The results indicated that the greater the perceived support of a mother, the higher the bonding attachment that could be achieved by the mother with her baby. Most mothers in

this study had low perceived social support (57.6%) and low bonding attachment (65.3%). The low bonding attachment may indicate insensitivity of the parenting environment of the mothers, resulting in minimal expected support.²⁵ The strength of the correlation between bonding attachment and perceived social support in this study was moderate in the current pandemic. Nevertheless, this finding could guide the health care system to improve psychosocial interventions and social support for mothers during the COVID-19 pandemic.¹⁶

In the COVID-19 pandemic situation, regulations emerged to maintain physical distance that negatively affected the social support for mothers who gave birth during the pandemic.¹⁶ Due to physical distancing regulation and micro-community activities restrictions, the mother may have found it difficult to get social support from extended family

Table 3. Strength of the Relationship between Perceived Social Support and Bonding Attachment

Variable	Bonding Attachments			Total	r*	p
	High		Low			
	n	%				
Perceived Social Support	High	36	14	50	0.537	0.001
	Low	5	63	68		
Total		41	77	118		

*Lambda correlation test

Table 4. Stratification of Relationship between Perceived Social Support and Bonding Attachment Based on Parity and Work Status of Respondents

Variable	Bonding Attachments						p-value	AOR** (95% CI)	
	High		Low		Total				
	n	%	N	%	n	%			
Parity and Perceived Social Support									
Primiparous	High	20	71	8	29	28	100	<0.001	23.63 (7.88, 70.87)
	Low	3	19	13	81	16	100		
Multiparous	High	16	73	6	27	22	100		
	Low	2	4	50	96	52	100		
Work and Perceived Social Support									
Not working	High	27	71	11	29	38	100	<0.001	28.90 (9.52, 87.76)
	Low	3	5	57	95	60	100		
Working	High	9	75	3	25	12	100		
	Low	2	25	6	75	8	100		

*Cochran's and Mantel-Haenszel Test; **AOR, Adjusted Odds Ratio

and health providers.^{15,26} However, social support from the husband was the main positive predictor for mothers to achieve bonding attachment during the pandemic.²⁷ Potentially, the partner seeking more active participation in childcare during this extraordinary period may represent a valuable source of support for women, particularly those experiencing limited access to other family members or friends who might provide this support under normal circumstances.²⁶

Parity as a Confounding Factor between Perceived Social Support and Bonding Attachment

This study indicated that parity affected the association between perceived social support and bonding attachment. The association was stronger in multiparous than primiparous mothers. Multiparous mothers with high perceived social support had a higher chance of having high bonding attachment than primiparous mothers. This difference in the impact of perceived social support on bonding attachment might be explained by the fact that multiparous mothers have an additional stressor than primiparous mothers in the pandemic situation.²⁸ This stressor is related to their tasks to handle their older child or children, unlike the primiparous.²⁸ Multiparous mothers had high stressors, namely, overburdened household chores and insufficient support from significant others.²⁹ Therefore, the high perceived social support felt by multiparous mothers may help them focus and have greater bonding attachment with their newborn child.⁷

Parity also affected bonding attachments. This study found that primiparous mothers tended to have higher bonding attachments than multiparous mothers in the pandemic situation. During the pandemic, there was an escalation in unplanned pregnancies due to the work from home policy and limited access to contraception during restrictions on community activities.¹⁵ As a result, the mothers' affection for the infant declined as the number of children increased in the family.³⁰ The mothers may not feel overwhelming excitement compared to their first child. This condition involved the bonding attachment between the baby and the extended family. The extended family also highly anticipated the first child's birth, so the support and attention were magnificent.²⁹ However, the support received from the extended family after having several older siblings was not as intense as the firstborn.²⁸ Therefore, maternal parity status affected bonding attachments. Interventions to increase social support, health promotion, counselling, and psychological assistance were essential, considering that most mothers in this study were multiparous with unplanned pregnancies related to the pandemic and were at risk of having lower social support and bonding attachments.^{28,29}

Working Status between Perceived Social Support and Bonding Attachment

The study results indicated that working status affected the relationship between perceived social support and bonding attachment. The association was stronger if the mothers were

not working. Among mothers with high perceived social support, unemployed ones had a higher chance of having bonding attachment than working mothers. This condition reflected that working mothers had a stronger mentality so that they could build a close emotional relationship with their babies, regardless of the social support they received. Temporary separation from the baby due to work caused a sense of worry or guilt about leaving the baby;³¹ thus, mothers took their precious time at home to build a close emotional relationship with the baby, despite the work fatigue they felt. In other words, working mothers did not excessively depend on social support to build a secure attachment with their babies. On the other side, unemployed mothers or mothers on maternity leave had the opportunity to spend more time with their babies than working mothers.³² The duration and quantity of togetherness were supporting factors for strengthening bonding attachments.³² Non-working mothers also have more opportunities to meet their significant others so that the perceived support also increases.

The working status also affected bonding attachments. This study revealed that working mothers tended to have a higher bonding attachment with their babies in the pandemic situation than unemployed mothers. During the pandemic, many factors such as socioeconomic, cultural factors, support systems related to the bonding attachment level changed.⁴ Being immensely dependent on these factors to build a secure attachment with their babies, unemployed mothers coped with difficulties when these factors changed.³² On the other hand, working mothers had stronger inner motivation to build bonding attachment with their babies. Therefore, changes in external factors during the pandemic have little impact on the bonding attachment of the working mothers. Interventions to increase social support, health promotion, counselling, and psychological assistance to motivate unemployed mothers are necessary to ensure that they can adapt to the changes in factors that can affect bonding attachment.

CONCLUSION

Perceived social support is still relevant in facilitating positive bonding attachments for mothers and babies during the COVID-19 pandemic. Moreover, since parity and working status affected this association, special attention is needed to provide social support interventions for mothers based on these characteristics. These findings could guide the health care system to improve the implementation of social support under the unique characteristics of mothers during the COVID-19 pandemic. We recommend future research to apply a quasi-experimental design through the provision of health education by separating groups of participants based on parity and occupational status, to obtain better outcomes.

Acknowledgment

The authors express their gratitude to Imanuel Sianipar, MPH, for his assistance in data analysis and interpretation.

Statement of Authorship

All authors approved the final version of the submitted paper.

Author Disclosure

The authors declared no potential conflicts of interest.

Funding Source

None.

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