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Original Research Article

Association between body mass index in the first trimester of pregnancy and socioeconomic status with pregnancy outcomes

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ABSTRACT

Background: Maternal body mass index (BMI) in early pregnancy and socioeconomic status are important determinants of maternal and fetal health. Their interaction influences pregnancy outcomes, including complications, birth weight, and neonatal health, highlighting the need for early assessment and targeted interventions. To compare pregnancy outcomes in relation to different BMI levels in the first trimester of pregnancy, and to determine whether BMI is related to socioeconomic status.
Methods: This cross-sectional study was carried out in the Department of Obstetrics and Gynaecology of Bangladesh Medical University, during the period of February 2012 to July 2012. A total of 180 women were admitted to the Department of Obstetrics and Gynaecology, Bangladesh Medical University, Dhaka. Participants who had fulfilled all inclusion criteria were enrolled in this study.
Results: Low BMI mothers were younger ($p=0.002$), from low-income groups ($p<0.001$), and had more preterm births ($p<0.001$). They and their husbands showed lower education ($p=0.05$, $p<0.001$). High BMI mothers were older, delivered earlier ($p<0.001$), and had higher risks of preeclampsia (37.8%), eclampsia (5.4%), gestational diabetes (29.7%), and wound infection (8.1%). Anemia was frequent in underweight individuals (87%). Caesarean delivery was higher in high BMI (81.8%) and underweight (65.2%). Asphyxia, sepsis, and neonatal death were significantly higher ($p=0.001$).
Conclusion: High BMI mothers were associated with low education status, low economic status, and adverse pregnancy outcomes, whereas low BMI mothers were associated with low education status and that of her husband, preterm delivery, and adverse pregnancy outcomes.

Keywords: Birth weight, Body mass index, First trimester, Pregnancy outcomes, Maternal health, Neonatal outcomes

INTRODUCTION

Maternal body mass index (BMI) during early pregnancy or pre-pregnancy has emerged as a strong predictor of multiple adverse pregnancy outcomes. Overweight and obese women face substantially increased risks of gestational diabetes mellitus (GDM), gestational hypertension (GHTN), pre-eclampsia, caesarean section (CS), induction of labor, and postpartum hemorrhage (PPH) compared to women of normal BMI.[1] A 2024 systematic review and meta-analysis found that overweight and obesity (versus normal weight) are

associated with odds ratios for GDM of about 2.9-3.5, for GHTN of about 2.1-3.4, for pre-eclampsia 1.7-2.8, and elevated risk of CS, induction of labor, and PPH.[1] On the other hand, women with low pre-pregnancy or early pregnancy BMI are more likely to deliver infants with small for gestational age (SGA) status, low birth weight (LBW), and preterm birth.[2] While studies on maternal adiposity often focus on obesity, limited but growing evidence suggests that underweight status may carry unique risks, especially where nutritional deficiencies or food insecurity are widespread.[2,3] Socioeconomic status (SES) – including education, income, employment, and related social factors – also strongly influences pregnancy and neonatal outcomes both independently and in interaction with maternal BMI. In an international multi-center cohort study (Sweden, Netherlands, Republic of Ireland; improved cohort, 2013-2017), women with lower educational attainment had higher odds of gestational hypertension (OR ~1.74) and women exposed to two or more socioeconomic risk factors had increased risk of preterm birth (OR ~1.75) after adjusting for BMI and other confounders.[4] Recent analyses further indicate that SES can moderate the effect of BMI. For example, a federated analysis of 18 birth cohorts found that maternal education level was strongly associated with offspring BMI trajectories from infancy through adolescence, even after accounting for gestational diabetes exposure, maternal adiposity, and environmental exposures.[5] In LMIC settings, low SES is often associated both with undernutrition (leading to low BMI and high rates of LBW/preterm birth) and with increasing overweight/obesity in certain populations, compounding risks.[6] Beyond perinatal outcomes, high maternal BMI is linked with adverse neonatal outcomes. A large-scale meta-analysis showed mothers with overweight and obesity have infants with a higher risk of macrosomia, neonatal hypoglycemia, infection, respiratory distress, neonatal intensive care admission, and stillbirth in a dose-response manner.[1,7] Similarly, situations of low maternal BMI often coincide with higher risks of neonatal mortality, intrauterine growth restriction, and long-term growth deficits.[2] Given that first-trimester BMI reflects early maternal nutritional status before substantial gestational weight gain and physiological changes, it serves as a useful marker for risk stratification. Studies increasingly recommend assessing BMI early (or preconception) to identify high- and low-risk pregnancies, particularly in populations with heterogeneous socioeconomic backgrounds.[1,8] Interventions that address both maternal nutrition and social determinants (such as education, income, and access to health services) may be required to reduce disparities in birth outcomes.[4,6] In summary, existing evidence from 2012-2023 demonstrates that both extremes of early pregnancy BMI (underweight and overweight/obesity) are associated with adverse outcomes; that SES independently contributes to risk; and that the interaction between BMI and SES plays a critical role in shaping pregnancy and neonatal health. There remains a need for studies that jointly examine first-trimester BMI and SES in diverse settings to clarify their combined effects on outcomes such as GDM, pre-eclampsia, preterm birth, low or high birth weight, and neonatal morbidity and mortality.

METHODS

Study population

This cross-sectional study was conducted in the Department of Gynecology and Obstetrics, Bangladesh Medical University, Dhaka, from January 2012 to July 2012. The study population included all pregnant women who had documented antenatal care (ANC) records and delivered within viable gestational age during the study period. A total of 180 women were enrolled.

Inclusion criteria

Inclusion criteria were pregnant women who provided informed written consent. Women with completed ANC records, including height and booking weight measured within the first 12 weeks of gestation. Women who delivered a fetus (live or stillborn) within viable gestational age.

Exclusion criteria

Exclusion criteria were patients who declined to participate. Women with essential hypertension, known diabetes mellitus, multiple pregnancies, a history of two or more previous caesarean sections, or fetuses with known congenital anomalies.

Data collection

Written informed consent was obtained from each participant or their authorized representative. Maternal age was recorded in completed years. Weight and height were measured using standard procedures, and BMI.

Participants were categorized into four BMI groups: group A: BMI <20 (underweight), group B: BMI 20-24.9 (normal weight), group C: BMI 25-29.9 (overweight) and group D: BMI ≥30 (obese).

Socioeconomic status was determined based on monthly family income: low (<10,000 BDT), middle (10,000–30,000 BDT), and high (>30,000 BDT). Blood pressure was recorded in the sitting position. Neonatal birth weight was measured immediately after delivery and categorized as low (<2.5 kg), normal (2.5–3.9 kg), or macrosomia (≥4 kg).

Data analysis

Data were compiled and analyzed using statistical package for the social sciences (SPSS) version 19.0. Descriptive and inferential statistics were applied, and a $p<0.05$ was considered statistically significant.

RESULTS

A total of 180 respondents participated in this study conducted at the Department of Obstetrics and Gynaecology, Bangladesh Medical University, Dhaka, from January to July 2012. Maternal age ranged from 15 to 40 years, with a mean of 24.74±5.23 years; most were aged 26–30 years. The majority of mothers (65.6%) were homemakers, while 13.9% were service holders and 12.8% were day laborers. Husbands were mainly employed in service (27.8%) and business (26.1%) sectors (Table 1).

Most mothers were literate, with 40.6% educated up to the primary level (Table 2), while 27.2% of husbands had secondary education; only four husbands had postgraduate degrees (Table 3). Multiparity predominated, with 28.9% having three children. Regarding BMI, 71 mothers (39.4%) were overweight and 37 (20.6%) were obese (Table 4). Maternal age, income, and gestational age increased significantly with BMI ($p<0.01$) (Table 5).

Low BMI mothers were mainly day laborers and garment workers, while overweight and obese mothers were primarily homemakers, service holders, and day laborers ($\chi^2=33.09$, $p=0.005$) (Table 6). Relationship between husband's occupation and mother's BMI is shown in Table 7. Maternal education varied significantly with BMI ($\chi^2=32.41$, $p=0.001$), with underweight mothers mostly having primary or no education (Table 8). Husband's education also differed by maternal BMI ($\chi^2=58.92$, $p<0.001$) (Table 9).

Antenatal care was inadequate in many low BMI mothers (87%), while recommended and regular visits were common among normal and higher BMI mothers. Delivery mode was BMI-dependent: vaginal delivery predominated in normal weight mothers (61.2%), caesarean section in obese mothers (81.8%), and instrumental deliveries in overweight mothers. Maternal morbidity included anemia (87% in underweight), preeclampsia (37.8% in obese), eclampsia (5.4% in obese), gestational diabetes (29.7% in obese), and wound infection (8.1% in obese); 36.7% had no complications. Most mothers delivered good fetal outcomes (72.8%), with 5% neonatal deaths and 3.9% stillbirths (Table 10). All associations between BMI, sociodemographic factors, maternal health, and fetal outcomes were statistically significant.

Table 1: Distribution of occupation of husbands (n=180).

Occupation	N	%	Valid (%)	Cumulative (%)
Unemployed	3	1.7	1.7	1.7
Day laborer	19	10.6	10.6	12.2
Garment worker	25	13.9	13.9	26.1
Service	50	27.8	27.8	53.9
Business	47	26.1	26.1	80.0
Technical	9	5.0	5.0	85.0
Teacher	13	7.2	7.2	92.2
Driver	14	7.8	7.8	100
Total	180	100	100	

Table 2: Distribution of education of the respondents (n=180).

Education	N	%	Valid (%)	Cumulative (%)
Illiterate	22	12.2	12.2	12.2
Primary	73	40.6	40.6	52.8
Secondary	60	33.3	33.3	86.1
Higher secondary	19	10.6	10.6	96.7
Graduate	6	3.3	3.3	100
Total	180	100	100	

Table 3: Distribution of education of the husbands of the respondents (n=180).

Husband's education	N	%	Valid (%)	Cumulative (%)
Illiterate	24	13.3	13.3	13.3
Primary	46	25.6	25.6	38.9
Secondary	49	27.2	27.2	66.1
Higher secondary	32	17.8	17.8	83.9
Graduate	25	13.9	13.9	97.8
Postgraduate	4	2.2	2.2	100
Total	180	100	100	

Table 4: Distribution of the number of patients in different BMI groups, (n=180).

BMI	N	%	Valid (%)	Cumulative (%)
<20	23	12.8	12.8	12.8
20–24.99	49	27.2	27.2	40
25–29.99	71	39.4	39.4	79.4
≥30	37	20.6	20.6	100
Total	180	100	100	

Table 5: Relationship between BMI and age of mother, monthly income, gestational age, (n=180).

Variables	Group A (n=23)	Group B (n=49)	Group C (n=71)	Group D (n=37)	P value
	<20	**20-24.99**	**25-29.99**	**≥30**	
Age (years)	22.17±5.18	23.37±4.48	26.04±5.60	25.65±4.56	0.002
Monthly income (BDT)	7565±3156	15796±10085	10789±6353	12000±6103	<0.001
Gestational age (weeks)	33.43±3.51	37.98±2.22	38.20±2.51	35.95±3.84	<0.001

Table 6: Relationship between mothers' occupation and BMI, (n=180).

Occupation	Group A, N (%)	Group B, N (%)	Group C, N (%)	Group D, N (%)	Total, N (%)	P value
	<20	**20-24.99**	**25-29.99**	**≥30**		
Home maker	14 (60.9)	29 (59.2)	45 (63.4)	30 (81.1)	118 (65.6)	0.005
Day laborer	4 (17.4)	4 (8.2)	12 (16.9)	3 (8.1)	23 (12.8)	
Garment worker	5 (21.7)	3 (6.1)	2 (2.8)	0	10 (5.6)	
Service	0	10 (20.4)	11 (15.5)	4 (10.8)	25 (13.9)	
Business	0	0	1 (1.4)	0	1 (0.6)	
Teacher	0	3 (6.1)	0	0	3 (1.7)	
Total	23	49	71	37	180	

Table 7: Relationship between husband's occupation and mother's BMI, (n=180).

Husband's occupation	Group A, N (%)	Group B, N (%)	Group C, N (%)	Group D, N (%)	Total, N (%)	P value
	<20	**20-24.99**	**25-29.99**	**≥30**		
Unemployed	1 (4.3)	1 (2.0)	1 (1.4)	0	3 (1.7)	<0.001
Day laborer	6 (26.1)	5 (10.2)	5 (10.2)	1 (2.7)	19 (10.6)	
Garment worker	9 (39.1)	2 (4.1)	7 (9.9)	7 (18.9)	25 (13.9)	
Service	1 (4.3)	19 (38.8)	19 (26.8)	11 (29.7)	50 (27.8)	
Business	1 (4.3)	9 (18.4)	25 (35.2)	12 (32.4)	47 (26.1)	
Technical	0	6 (12.2)	3 (4.2)	0	9 (5.0)	
Teacher	0	5 (10.2)	5 (7.0)	3 (8.1)	13 (7.2)	
Driver	5 (21.7)	2 (4.1)	4 (5.6)	3 (8.1)	14 (7.8)	
Total	23	49	71	37	180	

Table 8: Showing the relationship between mothers' education and BMI, (n=180).

Education	Group A, N (%)	Group B, N (%)	Group C, N (%)	Group D, N (%)	Total, N (%)	P value
	<20	**20-24.99**	**25-29.99**	**≥30**		
Illiterate	6 (26.1)	1 (2.0)	11 (15.5)	4 (10.8)	22 (12.2)	0.001
Primary	13 (56.5)	13 (26.5)	33 (46.5)	14 (37.8)	73 (40.6)	
Secondary	4 (17.4)	20 (40.8)	20 (28.2)	16 (43.2)	60 (33.3)	
Higher secondary	0	12 (24.5)	5 (7.0)	2 (5.4)	19 (10.6)	
Graduate	0	3 (6.1)	2 (2.8)	1 (2.7)	6 (3.3)	
Total	23	49	71	37	180	

Table 9: Husband's education and respondents' BMI, (n=180).

Husband's education	Group A, N (%)	Group B, N (%)	Group C, N (%)	Group D, N (%)	Total, N (%)	P value
	<20	20-24.99	25-29.99	≥30		
Illiterate	6 (26.1)	4 (8.2)	12 (16.9)	2 (5.4)	24 (13.3)	<0.001
Primary	13 (56.5)	8 (16.3)	17 (23.9)	8 (21.6)	46 (25.6)	
Secondary	4 (17.4)	5 (10.2)	28 (39.4)	12 (32.4)	49 (27.2)	
Higher secondary	0	15 (30.6)	6 (8.5)	11 (29.7)	32 (17.8)	
Graduate	0	14 (28.6)	7 (9.9)	4 (10.8)	25 (13.9)	
Post graduate	0	3 (6.1)	1 (1.4)	0	4 (2.2)	
Total	23	49	71	37	180	

Table 10: Relationship between fetal outcome, (n=180).

Fetal outcome	Group A, N (%)	Group B, N (%)	Group C, N (%)	Group D, N (%)	Total, N (%)	P value
	<20	20-24.99	25-29.99	≥30		
Good outcome	12 (52.2)	46 (93.9)	55 (77.5)	18 (48.6)	131 (72.8)	0.001
Asphyxia	5 (21.7)	1 (2.0)	11 (15.5)	9 (24.3)	26 (14.4)	
Neonatal sepsis	1 (4.3)	3 (6.1)	3 (4.2)	7 (18.9)	14 (7.8)	
Neonatal death	2 (8.7)	2 (4.1)	1 (1.4)	4 (10.8)	9 (5.0)	
Still birth	3 (13.0)	0 (0)	1 (1.4)	3 (8.1)	7 (3.9)	
Total	23	49	71	37	180	

DISCUSSION

Maternal BMI during early pregnancy serves as a significant determinant of pregnancy outcomes. In this study, we observed that both extremes of BMI—underweight and overweight/obesity were associated with adverse maternal and fetal outcomes. These findings align with global research indicating that maternal BMI influences various pregnancy complications. Underweight mothers in our study exhibited a higher incidence of anemia (87%) and inadequate antenatal care (87%), which are consistent with findings from Bangladesh indicating that underweight women are more likely to experience adverse maternal health outcomes, including pregnancy-induced hypertension and caesarean section deliveries.[1] Additionally, underweight status is associated with increased risks of SGA infants and preterm birth.[2] Conversely, overweight and obese mothers showed elevated risks of preeclampsia (37.8%), gestational diabetes mellitus (29.7%), and caesarean section deliveries (81.8%). These results corroborate with global studies highlighting that maternal obesity is linked to higher risks of gestational hypertension, preeclampsia, and caesarean sections.[4]

Furthermore, obesity is associated with adverse neonatal outcomes such as macrosomia, neonatal hypoglycemia, and stillbirth.[11] Socioeconomic factors, including maternal education, occupation, and income, significantly influence pregnancy outcomes. In our study, low BMI mothers were predominantly day laborers and garment workers, while overweight and obese mothers were primarily homemakers, service holders, and day laborers. This distribution suggests that socioeconomic status may impact maternal nutritional status and, consequently, pregnancy outcomes. A study conducted in Bangladesh found that maternal education and occupation are associated with antenatal care utilization and delivery outcomes.[12]

Additionally, individual-level socioeconomic factors have been linked to pregnancy complications, such as gestational hypertension and preterm birth.[13] Adequate antenatal care is crucial for monitoring maternal health and preventing complications. In our study, 39.4% of mothers did not attend the recommended number of antenatal visits, with underweight mothers being the most affected. This finding is consistent with research indicating that low socioeconomic status is associated with inadequate antenatal care utilization.[14] Regarding delivery outcomes, vaginal delivery was most common among normal-weight mothers (61.2%), while caesarean sections were more prevalent among obese mothers (81.8%). This trend aligns with global studies showing that obesity increases the likelihood of caesarean section deliveries.[15] Neonatal outcomes were also influenced by maternal BMI. Most mothers delivered infants with good outcomes (72.8%), while 5% experienced neonatal deaths and 3.9% had stillbirths.

These findings are consistent with global research indicating that both low and high maternal BMI are associated with adverse neonatal outcomes, including neonatal mortality and stillbirth.[16] This study underscores the importance of monitoring maternal BMI and addressing socioeconomic disparities to improve pregnancy outcomes. Interventions targeting nutritional

status, antenatal care utilization, and socioeconomic inequalities are essential for reducing maternal and neonatal morbidity and mortality. Future research should focus on longitudinal studies to further elucidate the complex interplay between maternal BMI, socioeconomic factors, and pregnancy outcomes.

Limitations

This study was limited by its single-center design, relatively small sample size, and cross-sectional nature, which restricts the ability to make causal inferences. Additionally, reliance on self-reported socioeconomic data and lack of long-term follow-up may have influenced the accuracy and generalizability of the findings.

CONCLUSION

This study demonstrates that maternal BMI in the first trimester significantly influences pregnancy outcomes, with underweight and obese mothers at higher risk of complications, including anemia, preeclampsia, caesarean delivery, and adverse neonatal outcomes. Socioeconomic status further modifies these risks, underscoring the importance of integrated interventions that address both maternal nutrition and social determinants. Early BMI assessment and targeted prenatal care can improve maternal and fetal health, particularly in resource-limited settings.

Recommendations

Healthcare programs should prioritize early BMI assessment and targeted nutritional counselling, promote regular antenatal care, and address socioeconomic barriers. Policies should focus on education, income support, and maternal health interventions to reduce pregnancy complications and improve neonatal outcomes.

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REFERENCES

1. Zhang Y, Lu M, Yi Y, Xia L, Zhang R, Li C, et al. Influence of maternal body mass index on pregnancy complications and outcomes: a systematic review and meta-analysis. Front Endocrinol. 2024;15:1280692.
2. Jenabi E, Salehi AM, Aghababaei S, Khazaei S. Pre-Pregnancy Body Mass Index and the Risk of Hyperemesis Gravidarum: A Systematic Review and Meta-Analysis. Clin Exp Obstet Gynecol. 2024;51(4):82.
3. Bryce E, Gurung S, Tong H, Katz J, Lee AC, Black RE, et al. Population attributable fractions for risk factors for spontaneous preterm births in 81 low-and middle-income countries: A systematic analysis. J Global Health. 2022;12:04013.
4. Maher GM, Ward LJ, Hernandez L, Kublickas M, Duvekot JJ, McCarthy FP, et al. Association between socioeconomic status with pregnancy and neonatal outcomes: An international multicenter cohort. Acta Obstet Gynecol Scandinavica. 2023;102(11):1459-68.
5. Cadman T, Elhakeem A, Vinther JL, Avraam D, Carrasco P, Calas L, et al. Associations of maternal educational level, proximity to green space during pregnancy, and gestational diabetes with body mass index from infancy to early adulthood: a proof-of-concept federated analysis in 18 birth cohorts. Am J Epidemiol. 2024;193(5):753-63.
6. Reed J, Case S, Rijhsinghani A. Maternal obesity: perinatal implications. SAGE Open Med. 2023;11:20503121231176128.
7. Senbanjo OC, Akinlusi FM, Ottun TA. Early pregnancy body mass index, gestational weight gain and perinatal outcome in an obstetric population in Lagos, Nigeria. Pan African Med J. 2021;39(1).
8. Lin S, Xie C, Teng A, Chen X, Li Y, Zhang Y, et al. Associations of primiparous pre-pregnancy body mass index and gestational weight gain with cesarean delivery after induction: a prospective cohort study. Front Med. 2024;11:1453620.
9. Rahman M, Rahman SM, Pervin J, Aktar S, El Arifeen S, Rahman A. Body mass index in early-pregnancy and selected maternal health outcomes: findings from two cohorts in Bangladesh. J Global Health. 2020;10(2):020419.
10. Xu Q, Ge Z, Bi Y, Hu J, Shen S, Zhu D. The association of gestational weight gain and adverse pregnancy outcomes in women with gestational diabetes mellitus. Endocrine Practice. 2019;25(11):1137-50.
11. Salahuddin M, Mandell DJ, Lakey DL, Eppes CS, Patel DA. Maternal risk factor index and cesarean delivery among women with nulliparous, term, singleton, vertex deliveries, Texas, 2015. Birth. 2019;46(1):182-92.
12. Pervin J, Venkateswaran M, Nu UT, Rahman M, O'Donnell BF, Friberg IK, et al. Determinants of utilization of antenatal and delivery care at the community level in rural Bangladesh. PloS One. 2021;16(9):e0257782.
13. Nicholls-Dempsey L, Badeghiesh A, Baghlaf H, Dahan MH. How does high socioeconomic status affect maternal and neonatal pregnancy outcomes? A population-based study among American women. Eu J Obstet Gynecol Reprod Biol. 2023;20:100248.
14. Denny HM, Laksono AD, Matahari R, Kurniawan B. The determinants of four or more antenatal care visits among working women in Indonesia. Asia Pacific J Public Health. 2022;34(1):51-6.
15. Shirvanifar M, Ahlqvist VH, Lundberg M, Kosidou K, Herraiz-Adillo Á, Berglind D, et al. Adverse pregnancy outcomes attributable to overweight and obesity across maternal birth regions: a Swedish population-based cohort study. Lancet Public Health. 2024;9(10):e776-86.

16. Yu YH, Bodnar LM, Himes KP, Brooks MM, Naimi AI. Association of overweight and obesity development between pregnancies with stillbirth and infant mortality in a cohort of multiparous women. Obstet Gynecol. 2020;135(3):634-43.

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