

LAMPIRAN

1. SOAP dan Catatan Perkembangan

ASUHAN KEBIDANAN KEHAMILAN

Pada Ny.R Umur 23 Tahun G1P0A0 UK 39 minggu dengan Kekurangan Energi Kronik (KEK) di Puskesmas Srumbung Kabupaten Magelang

Hari, Tanggal : Senin, 23 Februari 2026

Pukul : 10.00 WIB

No.RM : 07.02.XX

SUBJEKTIF (S)

1. Identitas

	Istri	Suami
Nama	: Ny.R	Tn. A
Umur	: 23 tahun	32 tahun
Agama	: Islam	Islam
Pendidikan	: SMA	SMP
Pekerjaan	: Ibu Rumah Tangga	Swasta
Alamat	: Dusun Losari , RT 3 RW 6, Desa Tegalrandu Srumbung Magelang	

2. Data Subjektif

a. Keluhan Utama

Ny.R mengatakan ingin periksa hamil, ibu mengatakan tidak ada keluhan apapun

b. Riwayat Menstruasi

Usia *Menarche* ± 14 tahun, lama ± 7 hari, siklus ± 28 hari, teratur, tidak ada keputihan, tidak mengalami dismenore. Ganti pembalut 3-4x/ hari.

HPHT: 25 Mei 2025 dan HPL tanggal 02 Maret 2026

c. Riwayat menikah

Menikah 1x pada Desember 2024. Umur pertama kali menikah 21 tahun, dengan suami sekarang sudah $\pm$ 1 tahun. Status TT: TT3.

d. Riwayat Obstetri

1. Hamil ini

e. Riwayat Kontrasepsi

Ny.R mengatakan sebelumnya belum pernah menggunakan alat kontrasepsi.

f. Riwayat Kesehatan Sekarang

Ny.R mengatakan saat ini tidak sedang menderita batuk atau pilek, pusing, demam tinggi, diare dan penyakit seperti asma, TBC, hipertensi, diabetes mellitus, jantung, hepatitis B dan HIV, dll.

g. Riwayat Kesehatan Keluarga

Ny.R mengatakan saat ini keluarganya tidak ada yang menderita batuk atau pilek, pusing, demam tinggi, diare, dan tidak ada riwayat penyakit asma, TBC, hipertensi, diabetes mellitus, jantung, hepatitis B dan HIV, dll.

h. Pola *Personal Hygiene*

Ny.R mengatakan mandi 2 kali sehari, membersihkan daerah genetalia setelah BAB, BAK dan saat mandi. Mengganti celana dalam setiap habis mandi dan apabila dirasa lembab.

i. Pola Pemenuhan Nutrisi

	Makan	Minum
Frekuensi	3-4x/hari	$\pm$ 10x/ hari
Porsi	sedang	gelas kecil
Macam	nasi, lauk, sayur	air putih, teh (kadang)
Keluhan	tidak ada keluhan	tidak ada keluhan

j. Pola Eliminasi

	BAB	BAK
Frekuensi	1-2 hari sekali	5-6x/hari
Tekstur	lunak	cair
Warna	kecoklatan	kuning jernih
Keluhan	tidak ada keluhan	tidak ada keluhan

k. Pola Aktivitas, Istirahat, dan Kebiasaan

- Ny.R mengatakan aktivitas sehari-hari yaitu bekerja sebagai ibu rumah tangga dan melakukan pekerjaan rumah seperti mencuci, memasak, membersihkan rumah, dll.
- Ny.R mengatakan pada siang hari jarang tidur, dan pada malam hari tidur selama ± 7 jam akan tetapi akhir-akhir ini sulit untuk tidur dengan nyenyak karena sudah mulai tidak enak.
- Ny.R mengatakan pola seksualitasnya 1-2x per minggu saat sebelum hamil dan jarang melakukan hubungan seksual saat hamil ini karena takut.
- Ny.R jarang sekali melakukan olahraga
- Ny.R mengatakan tidak ada kebiasaan merokok, minum minuman keras, jamu-jamuan, zat adiktif, dll.

OBJEKTIF (O)

1. Keadaan Umum : Baik
2. Kesadaran : *Composmentis*
3. Tanda-Tanda Vital :
 - a. TD : 110/70 mmHg
 - b. N : 80x/ menit
 - c. R : 22x/ menit
 - d. S : 36,5°C
4. Pemeriksaan Antropometri
 - a. BB : sebelum hamil 42 kg, BB sekarang 50 kg

- b. TB : 154 cm
- c. Lila : 23 cm
- d. IMT : 17.7 kg/m²

5. Pemeriksaan Fisik

- a. Kepala : tidak ada oedema, terdapat hiperpigmentasi di sekitar pipi
- b. Mata : Konjungtiva merah muda, sklera putih
- c. Perut : membesar memanjang, terdapat hiperpigmentasi dan striae alba

Leopold I : TFU 2jari diatas pusat. Teraba bulat, lunak, tidak melenting. Kesimpulan: bokong janin

Leopold II : Kanan: teraba datar, tahanan kuat. Kesimpulan: punggung janin. Kiri: teraba bulat kecil-kecil berbenjol. Kesimpulan: ekstremitas

Leopold III : Teraba bulat, keras, tidak melenting. Kesimpulan: kepala janin

Leopold IV : Posisi tangan pemeriksa divergen/ tidak bertemu. Kesimpulan: bagian terendah janin sudah masuk panggul

Mc Donald : 29 cm

TBJ : 2790 gram

DJJ : 133x/mnt

- d. Ekstremitas : gerak aktif, tidak terdapat oedema

6. Pemeriksaan laboratorium (TM 3: 10-11-2022)

- a. Hb : 12,8 gr/dL HIV/AIDS : Negatif
- b. GDS : 85 mg/dL Gol. Darah : O
- c. Syphilis : Negatif Hepatitis : Negatif
- d. Protein urine: Negatif

ANALISIS (A)

1. Diagnosis

Ny.R usia 23 tahun G1P0Ab0Ah0 hamil umur kehamilan 39 minggu dengan kehamilan Kurang Energi Kronis (KEK)

2. Masalah

Kurangnya pengetahuan ibu tentang kebutuhan gizi ibu hamil

3. Kebutuhan

KIE mengenai cara penanganan KEK dan KIE tentang kebutuhan gizi ibu hamil

4. Diagnosis potensial

BBLR

5. Antisipasi tindakan segera

Tidak ada

PENATALAKSANAAN (P)

1. Menjelaskan maksud dan tujuan kunjungan kepada keluarga/ibu yaitu untuk melakukan penyuluhan sesuai dengan kondisi Ibu saat ini yaitu hamil dengan Kurang Energi Kronis (KEK). Ibu mengerti maksud dan tujuan kunjungan yang dilakukan.
2. Memberikan inform consent kepada Ibu untuk meminta persetujuan menjadi responden asuhan kebidanan COC. Ibu telah membaca dan menyetujui inform consent yang diberikan serta bersedia menjadi responden.
3. Memberitahu kepada ibu hasil pemeriksaan keadaan umum dan tanda vital ibu seperti tensi dan suhu dalam batas normal, tetapi status gizi ibu termasuk dalam kategori kurang karena keadaan lingkaran lengan atas ibu dibawah batas nilai normal yaitu 23,5 cm. Ibu mengerti tentang kondisinya saat ini.
4. Memberikan penyuluhan dan KIE mengenai Kurang Energi Kronis (KEK) pada ibu hamil dengan media leaflet. Memberikan KIE risiko kehamilan dengan KEK yaitu terjadi perdarahan, anemia, pengaruh waktu persalinan yaitu persalinan sulit dan lama, persalinan sebelum waktunya, perdarahan setelah persalinan, dan pengaruh pada janin yaitu keguguran, bayi lahir mati, cacat bawaan, bayi dengan berat badan lahir rendah. Ibu mendengarkan dan menyimak penyuluhan yang diberikan.
5. Memberikan penyuluhan tentang kebutuhan gizi ibu hamil. Pada trimester III kebutuhan ibu hamil akan semakin besar yang diperlukan untuk pertumbuhan janin dan plasenta, olehnya itu, ibu hamil perlu mengubah cara makannya, meskipun ibu hamil sudah merasa makan dengan baik, jika melakukan diet,

maka diet makanan pun harus mengikuti diet makanan untuk ibu hamil, saat kehamilan, ibu hamil membutuhkan lebih banyak konsumsi protein, kalori (untuk energi), vitamin dan mineral untuk perkembangan bayi dan ibu hamil. Ibu mendengarkan dan menyimak penyuluhan yang diberikan dan berjanji akan menambah konsumsi makanan yg bergizi seimbang.

6. Melakukan evaluasi penyuluhan. Ibu mampu menjelaskan ulang KIE yang diberikan.
7. Menjadwalkan kunjungan ulang ibu 1 minggu lagi , ibu bersedia
8. Mendokumentasikan asuhan yang diberikan pada Ny.R. Dokumentasi telah dilakukan.

ASUHAN KEBIDANAN
NY.R UMUR 23 TAHUN G1P1A0 UK 39 MINGGU 4 HARI
DI PUSKESMAS SRUMBUNG MAGELANG

TANGGAL/JAM : Jumat tanggal 27 Februari 2026 / 09.30 WIB

Media : WhatsApp

S	Ibu mengatakan bahwa sering merasakan nyeri perut bagian bawah dan nyeri punggung.
O	Keadaan umum: baik Kesadaran: composmentis TD: 100/74 mmHg, N: 81x/menit, R: 22x/menit, S: 36,6°C, TB 154, BB: 50 kg, LILA 23 cm, IMT 20,8 kg/m ²
A	Ny.R usia 23 tahun G1P0Ab0Ah hamil umur kehamilan 39 minggu 4 hari dengan kehamilan Kurang Energi Kronis (KEK)
P	1. Menjelaskan kepada ibu tentang hasil pemeriksaan Ny R dikategorikan ibu hamil dengan KEK serta memotifasi ibu untuk terus meningkatkan konsumsi protein nabati dan hewani seperti tahu telur dan tempe selain mudah didapat namun juga harganya terjangkau. 2. KIE tentang cara mengatasi ketidak nyamanan TM 3 yaitu nyeri punggung adalah dengan cara hindari sikap membungkuk saat mengangkat beban sebaiknya tekuk lutuk terlebih dahulu sebelum mengangkat beban, tidak menggunakan sepatu hak tinggi dan melakukan senam hamil. 3. KIE tentang tanda bahaya trimester III dan tanda – tanda persalinan 4. Menyarankan ibu untuk tetap memantau gerak janin minimal 10 kali Gerakan dalam 12 jam. 5. Menyarankan ibu untuk kunjungan ulang 1 minggu lagi di Puskesmas bila belum melahirkan. 6. Melakukan dokumentasi tindakan. Tindakan telah didokumentasikan

ASUHAN KEBIDANAN PERSALINAN

KALA I

Ny.R umur 23 tahun G1P0A0 UK 40 minggu dengan persalinan spontan

*(Pengkajian berdasarkan anamnesa dan dokumentasi pemeriksaan di buku KIA)	
S	02-03-2026/ Pukul 07.00 WIB Ibu sudah berada di puskesmas dan mengatakan kenceng di perutnya semakin terasa sangat kencang dan hampir setiap waktu, ditambah keluar lendir darah sejak pukul 02.00
O	Ku: baik His 3-4 x dalam 10 menit Djj 138 x menit VT : Vulva uretra tenang, dinding vagina licin, portio tipis lunak, pembukaan 4 cm, selaput ketuban utuh, presentasi kepala, hodge II, sarung tangan lendir darah potisif.
A	Ny.R umur 23 tahun G1P0A0 UK 40 minggu dalam persalinan kala 1 fase aktif
P	1. Memberitahu ibu bahwa berdasarkan hasil pemeriksaan keadaan ibu dan janin baik dan sehat 2. Memberitahu ibu untuk tidak mengejan terlebih dahulu karena masih pembukaan 4, dan apabila ibu sudah mulai mengejan dapat menyebabkan oedema pada jalan lahir. 3. Memberitahu ibu untuk tidur miring ke kiri untuk mempercepat penurunan kepala janin dan aliran oksigen dari ibu ke janin tercukupi. 4. Memberitahu ibu untuk mengatur teknik pernapasan yaitu dengan mengambil napas panjang dari hidung dan dikeluarkan dari mulut untuk mengurangi rasa nyeri. 5. Memberikan motivasi kepada ibu untuk tetap kuat dan semangat menghadapi persalinan. 6. Melakukan pendokumentasian

CATATAN PERKEMBANGAN KALA II

Hari, Tanggal : 02 Maret 2026, jam 12.30 WIB

S	Ibu mengatakan ingin BAB, kencing-kencing semakin sering dan teratur, keluar air dari jalan lahir.
O	a. Pemeriksaan Umum 1. KU: baik, Kesadaran: Compos Mentis 2. Tanda-tanda vital: TD: 110/80 mmHg; N: 84x/menit; R: 28x/menit; S: 36,6°C 3. DJJ: 132x/menit 4. Periksa dalam: vulva tenang, dinding vagina licin, portio tidak teraba, pembukaan 10 cm, selaput ketuban -, presentasi kepala, UUK jam 12, penurunan kepala hodge III. STLD (+), Air Ketuban (+) jernih. DJJ 142 x/m, his 4x 45 detik dalam 10 menit.
A	Ny. R umur 23 tahun G1P0A ₀ Ah0 hamil 40 minggu, janin tunggal, intrauterine, hidup, presentasi belakang kepala, punggung kanan dalam persalinan kala II
P	1. Memberitahu ibu bahwa berdasarkan hasil pemeriksaan pembukaan sudah lengkap dan sudah boleh mengejan sesuai instruksi bidan. Ibu mengerti. 2. Memberikan motivasi kepada ibu untuk tetap kuat dan semangat menghadapi persalinan dan mempersilahkan salah satu keluarga untuk mendampingi ibu bersalin. Suami mendampingi selama proses persalinan. 3. Meminta ibu untuk mengatur posisi senyaman mungkin untuk mengejan. Ibu sudah dalam posisi nyaman. 4. Memberitahu ibu untuk mengejan efektif saat ada kontraksi yaitu dengan mengejan tanpa suara, mengejan dengan kekuatan kebawah, mata terbuka melihat bidan dan dagu ditempel dada. Ibu sudah mengejan efektif.

	5. Memberitahu ibu apabila tidak ada kontraksi untuk tidak mengejan dan diselingi dengan minum. Ibu mengerti. 6. Mempersiapkan partus set dan mengenakan APD lengkap. 7. Membantu melahirkan kepala dengan menahan puncak kepala dengan tangan kiri dan tangan kanan menahan perineum. Kepala lahir dan tidak ada lilitan tali pusat. 8. Melahirkna bahu depan dengan posisi tangan biparietal dan menarik lembut kearah bawah, sedangkan untuk melahirkan bahu belakang dengan posisi tangan biparietal dan menarik lembut keatas. Bahu bayi lahir. 9. Melahirkan badan bayi dengan sangga susur. Bayi lahir spontan, menangis, gerakan aktif, kulit kemerahan. Bayi lahir tanggal 2 Maret 2026 jam 13.00 WIB. 10. Menghangatkan bayi dengan kain kering dan bersih.
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CATATAN PERKEMBANGAN KALA III

Hari, Tanggal : 02 Maret 2026 jam 13.00 WIB

S	Ibu mengatakan ibu merasa lega.
O	a. Pemeriksaan Umum KU: baik, Kesadaran : Compos Mentis TFU sepusat, tidak ada janin kedua. Kandung kemih : kosong Kontraksi : keras
A	Ny. R umur 23 tahun P1Ab0 dalam persalian kala III
P	1. Melakukan pengecekan fundus dan memastikan tidak ada lagi janin kedua. 2. Memberitahu ibu bahwa akan disuntik oksitosin di bagian paha luar secara IM. Ibu bersedia disuntik 3. Menyuntikan oksitosin 10 IU secara IM di paha luar. Oksitosin sudah disuntikkan. 4. Melakukan jepit dan potong tali pusat 5 menit setelah bayi lahir. Tali pusat telah dipotong dan dijepit dengan klem tali pusat. 5. Membersihkan kepala dan badan bayi dengan kain bersih dan kering. 6. Membantu ibu melakukan IMD dengan meletakkan bayi diantara payudara ibu dan menghadapkan kepala ke salah satu sisi dan meminta ibu untuk memegang bayi selama IMD. IMD sedang berlangsung. 7. Melakukan PTT dan tekanan dorsokranial saat ada kontraksi. Ada tanda pelepasan plasenta yaitu ada semburan darah, tali pusat memanjang, uterus globuler. 8. Melahirkan plasenta dan meminta ibu untuk sedikit mengejan. Plasenta lahir spontan jam 03.10 WIB 9. Memeriksa kelengkapan plasenta. Plasenta lengkap.

CATATAN PERKEMBANGAN KALA IV

Hari, Tanggal : 02 Maret 2026, jam 13.05 WIB

S	Ibu mengatakan merasa mules
O	Pemeriksaan Umum KU: baik, Kesadaran: Compos Mentis TD: TD 112/81 mmHg, nadi 80x/menit, suhu 36,6°C, kontraksi uterus keras, TFU 2 jari dibawah pusat, kandung kemih kosong dan perdarahan sekitar 80 cc. Peineum ruptur derajat 2.
A	Ny. R umur 23 tahun P1Ab0 dalam persalian kala IV dengan ruptur perineum derajat 2
P	1. Memberitahu ibu bahwa bayi dan ari-ari sudah lahir. Ibu mengerti 2. Menyiapkan lidokain, memasukkan kedalam spuit dan injeksi pada area yang terdapt laserasi kemudian dilakukan heacting. Laserasi telah terjahit. 3. Memastikan tidak ada barang, kasa dan benang yang tertinggal. Tidak ada yang tertinggal. 4. Merapikan dan membersihkan ibu. Ibu telah bersih dan berganti pakaian. 5. Merapikan dan mendekontaminasi alat. 6. Memberitahu ibu bahwa kontraksi yang baik adalah saat uterus keras. Meminta ibu untuk selalu memantau kontraksi uterus, apabila terasa uterus lembek, dan darah yang keluar terasa deras segera melapor ke bidan. 7. Melakukan observasi meliputi nadi, tekanan darah, kontraksi, TFU, pengeluaran darah, kandung kemih dan suhu tiap 15 menit sekali dalam satu jam pertama dan setiap 30 menit sekali pada satu jam kedua. TD: 112/81mmHg, N: 80x/menit, S: 36,6°C, kontraksi keras, TFU 2 jari dibawah pusat, perdarahan dalam batas normal, kandung kemih kosong.

ASUHAN KEBIDANAN PADA NEONATUS

By. Ny.R umur 6 jam normal

Pengkajian Tanggal, Jam : 02-03-2026/ 18.00 WIB (KN 1)

*(Pengkajian berdasarkan anamnesa dan dokumentasi pemeriksaan di buku KIA)

S	Nama: By. Ny.R TTL: 02-03-2026 bayi lahir jam 18.00 WIB Umur: 6 jam Jenis Kelamin: Laki-laki Riwayat Persalinan: 02-03-2026 bayi lahir jam 13.00 WIB, segera menangis, menangis kuat, warna kulit kemerahan, tonus otot aktif, Apgar Score 8/9/10, Jenis kelamin laki-laki berat badan bayi Ny. R sebesar 2750 gram, panjang badan 48 cm, LK 33 cm, LD 32 cm, lila 10 cm. Bayi mau menyusui, sudah BAK 1 kali, dan BAB 1 kali	
	a. KU: baik b. Kesadaran: <i>Composmentis</i> c. BB: 2750gram	d. Warna kulit: kemerahan Apgar scoe 8/9/10 *dikaji berdasarkan anamnesa dan catatan buku KIA hasil pemeriksaan di puskesmas
O	Tidak dilakukan	
A	By. Ny.R umur 6 jam normal membutuhkan asuhan neonatus 6-48 jam.	
P	1. Memberitahu ibu bahwa dengan kondisi yang disampaikan ibu keadaan bayinya sehat, dengan BB: 2750 gram dan hasil pemeriksaan fisik dan antropometri dalam batas normal. Ibu mengetahui dan mengerti 2. Memberitahu ibu untuk tetap menjaga kehangatan bayinya yaitu dengan cara memakaikan topi, selimut, serta segera mengganti popok yang sudah basah. Ibu bersedia menjaga kehangatan bayinya 3. Memberitahu ibu untuk menyusui bayinya sesering mungkin minimal 2 jam sekali, atau semau bayi dan juga melakukan ASI eksklusif selama 6 bulan. Ibu bersedia menyusui bayinya sesering mungkin dan ASI eksklusif 4. Menyampaikan cara perawatan tali pusat.	

	Ibu merespon dengan baik, ibu mengatakan sudah diajarkan oleh bidan rumah sakit serta diajarkan cara memandikan bayi
5.	Memberitahu ibu tanda bahaya yang dapat terjadi pada bayi yaitu bayi tidak mau menyusu, bayi terlihat kuning, demam tinggi, tidak sadar, dan memuntahkan ASI yang diberikan. Apabila mengalami hal tersebut sebaiknya ibu segera memberitahu bidan untuk mendapatkan pertolongan segera. Ibu mengerti tanda bahaya yang dapat terjadi pada bayi
6.	Menganjurkan ibu untuk kontrol ulang sesuai dengan jadwal yang telah ditentukan. Ibu bersedia
7.	Melanjutkan observasi dan melakukan dokumentasi tindakan Tindakan telah didokumentasikan

ASUHAN KEBIDANAN PADA NEONATUS

By. Ny.R umur 3 hari normal

Pengkajian Tanggal, Jam : 05-03-2026/ 10.00 WIB (KN 2)

*(Pengkajian berdasarkan anamnesa dan dokumentasi pemeriksaan di buku KIA)

S	Ibu mengatakan tidak ada keluhan, bayinya sehat, menyusui dengan baik. a. KU: baik b. Kesadaran: <i>Composmentis</i> c. BB: 2700 gram d. Tali pusat: bersih, belum lepas, tidak ada tanda infeksi e. Warna kulit tidak kuning *dikaji berdasarkan anamnesa dan catatan buku KIA hasil pemeriksaan di puskesmas
O	Tidak dilakukan
A	By. Ny.R umur 7 hari normal membutuhkan asuhan neonatus 3-7 hari
P	- Memberikan pujian dan support kepada ibu. Memberitahu ibu bahwa dengan kondisi yang disampaikan ibu keadaan bayinya sehat, dengan BB: 2600 gram dan hasil pemeriksaan fisik dalam batas normal. Ibu mengetahui dan mengerti - Memberitahu ibu untuk tetap menjaga kehangatan bayinya yaitu dengan cara memakaikan topi, selimut, serta segera mengganti popok yang sudah basah. Ibu bersedia menjaga kehangatan bayinya - Memberitahu ibu untuk menyusui bayinya sesering mungkin minimal 2 jam sekali, atau semau bayi dan juga melakukan ASI eksklusif selama 6 bulan. Ibu bersedia menyusui bayinya sesering mungkin dan ASI eksklusif - Memberitahu ibu tanda bahaya yang dapat terjadi pada bayi yaitu bayi tidak mau menyusui, bayi terlihat kuning, demam tinggi, tidak sadar, dan memuntahkan ASI yang diberikan. Apabila mengalami hal tersebut sebaiknya ibu segera periksa ke bidan atau dokter untuk mendapatkan pertolongan segera. Ibu mengerti tanda bahaya yang dapat terjadi pada bayi - Menganjurkan ibu untuk kontrol menimbang BB dan mengukur PB rutin setiap bulan di posyandu terdekat untuk memantau pertumbuhan dan perkembangan anak. Ibu bersedia mengikuti posyandu - Melanjutkan observasi dan melakukan dokumentasi tindakan Tindakan telah didokumentasikan

ASUHAN KEBIDANAN PADA NEONATUS

By. Ny.R umur 16 hari normal

Pengkajian Tanggal, Jam : 18-03-2026/ 10.30 WIB (KN 3)

Media : kunjungan rumah

S	Ibu mengatakan tidak ada keluhan, bayinya sehat, menyusui dengan baik.
O	a. KU: baik b. Kesadaran: <i>Composmentis</i> c. BB: 3100 gram d. Kulit: kemerahan, tidak kuning
A	By. Ny.R umur 16 hari normal membutuhkan asuhan neonatus 8-28 hari
P	1. Memberikan pujian dan support kepada ibu dan keluarga. Memotivasi ibu untuk tetap melakukan ASI eksklusif. Ibu bersedia 2. Memberikan KIE kepada ibu bahwa kenaikan BB yang harus dicapai setiap bulan berdasar grafik KMS. Pada bulan pertama, kenaikan BB yang dianjurkan adalah 800 gr dari BB lahir. Ibu mengerti dan mengetahui 3. Memberitahu ibu untuk tetap menjaga kehangatan bayinya yaitu dengan cara memakaikan topi, selimut, serta segera mengganti popok yang sudah basah. Ibu bersedia menjaga kehangatan bayinya 4. Memberitahu ibu tanda bahaya yang dapat terjadi pada bayi yaitu bayi tidak mau menyusui, bayi terlihat kuning, demam tinggi, tidak sadar, dan memuntahkan ASI yang diberikan. Apabila mengalami hal tersebut sebaiknya ibu segera periksa ke bidan atau dokter untuk mendapatkan pertolongan segera. Ibu mengerti tanda bahaya yang dapat terjadi pada bayi 5. Menganjurkan ibu untuk kontrol menimbang BB dan mengukur PB rutin setiap bulan di posyandu terdekat untuk memantau pertumbuhan dan perkembangan anak. Ibu bersedia mengikuti posyandu 6. KIE tentang imunisasi wajib dan menganjurkan ibu untuk datang ke puskesmas pada saat usia 1 bulan untuk diberikan imunisasi BCG. Ibu bersedia untuk mengimunisasikan anaknya 7. Melanjutkan observasi dan melakukan dokumentasi tindakan Tindakan telah didokumentasikan

ASUHAN KEBIDANAN PADA MASA NIFAS
NY.R UMUR 23 TAHUN P1A0 NIFAS NORMAL HARI KE 1
DI PUSKESMAS SRUMBUNG MAGELANG

TANGGAL/JAM : 02 Maret 2026/ 18.00 WIB (KF 1)

S	Ibu mengatakan jahitan agak nyeri, ibu mengaku bisa beristirahat, ibu dapat duduk maupun berjalan ke kamar mandi tanpa keluhan, sudah BAK dan bisa mandi sendiri, ganti pembalut 4-5 kali sehari, ASI sudah keluar sedikit, ibu mengaku menyusui bayi 2 jam sekali, ibu makan 3 kali sehari dan minum air putih 2 liter dalam sehari dengan tambahan jus dan sari kacang hijau. Ibu juga mengatakan sangat senang dengan kelahiran anak pertamanya ini. <table border="1" data-bbox="368 752 1361 1010"> <tr> <td data-bbox="368 752 868 1010"> Keadaan umum: baik Kesadaran: composmentis TD: dbn ASI: + Kontraksi: keras TFU: 3 jari di bawah pusat </td><td data-bbox="868 752 1361 1010"> Lochea: rubra dbn, jahitan masih basah, tidak ada tanda infeksi *dikaji berdasarkan anamnesa dan catatan buku KIA hasil pemeriksaan di puskesmas </td></tr> </table>	Keadaan umum: baik Kesadaran: composmentis TD: dbn ASI: + Kontraksi: keras TFU: 3 jari di bawah pusat	Lochea: rubra dbn, jahitan masih basah, tidak ada tanda infeksi *dikaji berdasarkan anamnesa dan catatan buku KIA hasil pemeriksaan di puskesmas
Keadaan umum: baik Kesadaran: composmentis TD: dbn ASI: + Kontraksi: keras TFU: 3 jari di bawah pusat	Lochea: rubra dbn, jahitan masih basah, tidak ada tanda infeksi *dikaji berdasarkan anamnesa dan catatan buku KIA hasil pemeriksaan di puskesmas		
O	Tidak dilakukan		
A	Ny.R umur 23 tahun P1 A0 pospartum spontan masa nifas hari ke 0 normal membutuhkan asuhan nifas 6-48 jam		
P	1. Mengajarkan ibu mencukupi kebutuhan makan minum dengan gizi seimbang. Protein membantu penyembuhan luka, proses kembalinya organ kandungan seperti sebelum hamil dan produksi ASI. Ibu bersedia, ibu tidak ada alergi. 2. Mengajarkan ibu menjaga kebersihan genetalia dan cara merawat luka jahitan perineum. Ibu bersedia, ibu sudah dapat melakukan perawatan luka perineum dengan benar 3. Mengajarkan ibu tetap menyusui bayi sesuai permintaan bayi atau minimal 2 jam sekali dengan teknik menyusui yang benar. Ibu bersedia, ibu mengaku sudah diajarkan cara menyusui yang benar. 4. Mengajarkan ibu kelola stress dan istirahat cukup. Ibu bersedia. 5. Memberikan KIE tanda bahaya nifas seperti perdarahan berlebih, demam, pusing, dll. Ibu merespon dengan baik. 6. Mengajarkan ibu melanjutkan obat yang diberi dokter. Ibu bersedia, ibu diberi tablet tambah darah, antibiotik, asam mefenamat dan 2 kapsul vit A. 7. Mengajarkan ibu kontrol ulang sesuai jadwal. Ibu bersedia kontrol tanggal 05-03-2026. 8. Melakukan dokumentasi asuhan. Asuhan telah didokumentasikan		

ASUHAN KEBIDANAN PADA MASA NIFAS
NY.R UMUR 23 TAHUN P1A0 NIFAS NORMAL HARI KE 7
DI PUSKESMAS SRUMBUNG MAGELANG

TANGGAL/JAM : 05 Maret 2026/ 10.30 WIB (KF 2)

S	Ibu mengaku bisa beristirahat karena dibantu suami untuk mengurus bayinya dan pekerjaan rumah lainnya, sudah BAK dan BAB tidak ada keluhan, ganti pembalut 3-4 kali sehari, ASI sudah keluar tapi belum lancar lancar, ibu mengaku menyusui bayi 2 jam sekali, ibu makan 3-4 kali sehari dan minum air putih 2 liter dalam sehari.	
	Keadaan umum: baik Kesadaran: composmentis TD: dbn ASI: + keluar Kontraksi: keras TFU: 3 jari di atas simpisis	Lochea: rubra dbn, jahitan bersih, tidak ada tanda infeksi Esktremitas: tidak ada pembengkakan *dikaji berdasarkan anamnesa dan catatan buku KIA hasil pemeriksaan di puskesmas
O	Tidak dilakukan	
A	Ny.R umur 23 tahun P1A0 pospartum spontan masa nifas hari ke-3 normal membutuhkan asuhan nifas 3-7 hari	
P	1. Memberitahu ibu tentang hasil pemeriksaan bahwa kondisi ibu normal. 2. Memotivasi ibu untuk pemberian ASI eksklusif. Ibu bersedia. 3. Menganjurkan ibu menjaga pola makan gizi seimbang, jaga kebersihan genetalia, kelola stress dan istirahat cukup agar ASI menjadi lancar. Ibu bersedia. 4. Mengajari ibu dan suami tehnik pijat laktasi. Ibu dan suami bersedia melakukan dirumah. 5. Memberikan KIE tanda bahaya nifas seperti perdarahan berlebih, demam, pusing, dll. Ibu merespon dengan baik. 6. Menganjurkan ibu melanjutkan obat yang diberi dokter. Ibu bersedia, ibu melanjutkan vitamin tambah darah yang diberikan 7. Menganjurkan ibu kontrol ulang sesuai jadwal. Ibu bersedia.	

ASUHAN KEBIDANAN PADA MASA NIFAS
NY.R UMUR 23 TAHUN P1A0 NIFAS NORMAL HARI KE 12
DI PUSKESMAS SRUMBUNG MAGELANG

TANGGAL/JAM : 14 Maret 2026/ 10.30 WIB (KF 3)

Media : Kunjungan rumah

S	Ibu mengatakan tidak ada keluhan, ibu mengaku bisa beristirahat karena dibantu suami untuk mengurus bayinya dan pekerjaan rumah lainnya.	
O	Keadaan umum: baik Kesadaran: composmentis TD: 110/70 mmHg N: 85x/menit R: 22x/menit ASI: + TFU: tidak teraba	Lochea: alba dbn, jahitan kering Payudara: puting bersih menonjol, terdapat pengeluaran ASI Esktremitas: tidak ada pembengkakan
A	Ny.R umur 23 tahun P1A0 pospartum spontan masa nifas hari ke-12 normal membutuhkan asuhan nifas 8-28 hari	
P	1. Memberitahu ibu hasil pemeriksaan dalam batas normal. Ibu mengerti dan mengetahui serta merasa senang 2. Memberikan dukungan kepada ibu dan keluarga untuk tetap melakukan ASI eksklusif. Ibu bersedia melakukan ASI eksklusif 3. Menganjurkan ibu tetap menjaga pola makan gizi seimbang, jaga kebersihan genetalia, kelola stress dan istirahat cukup. Ibu bersedia 4. Memberikan KIE tanda bahaya nifas Ibu merespon dengan baik. 5. Memberikan KIE waktu memulainya hubungan seksual setelah nifas selesai atau perdarahan telah berhenti, Ibu mengerti dan mengatakan untuk berhubungan saat masa nifas sudah selesai karena masih takut. 6. KIE tentang macam- macam kontrasepsi untuk ibu menyusui. 7. Melakukan dokumentasi asuhan. Asuhan telah didokumentasikan	

ASUHAN KEBIDANAN PADA MASA NIFAS
NY.R UMUR 23 TAHUN P1A0 NIFAS NORMAL HARI KE 37
DI PUSKESMAS SRUMBUNG

TANGGAL/JAM : 08 April 2026/ 08.30 WIB (KF 4)

Media : Kunjungan Posyandu

S	Ibu mengatakan tidak ada keluhan, ASI lancar dan tidak ada masalah menyusui, ibu mengaku bisa beristirahat cukup, ibu dapat melakukan aktivitas rumah tangga seperti biasa, sudah BAK dan BAB tidak ada keluhan, darah nifas sudah berhenti (tidak ada pengeluaran dari jalan lahir), makan 3-4 kali sehari dengan makanan selingan, minum minimal 2 liter sehari. Ibu sudah menggunakan kontrasepsi pil menyusui.	
O	Keadaan umum: baik Kesadaran: composmentis TD: 110/70 mmHg N: 90 x./menit R: 22 x/menit S: 36,8°C	Mata: sklera putih, konjungtiva merah muda Payudara: bersih, puting menonjol, pengeluaran ASI, tidak ada lecet atau bendungan ASI Genetalia: tidak ada pengeluaran Ekstremitas: bergerak aktif tidak ada oedema *dikaji berdasarkan anamnesa dan catatan buku KIA hasil pemeriksaan di puskesmas
A	Ny.R umur 23 tahun P1A0 pospartum spontan masa nifas hari ke-37 normal akseptor KB pil membutuhkan asuhan nifas 29-42 hari	
P	- Memberikan dukungan ibu untuk pemberian ASI eksklusif Ibu bersedia. - Menganjurkan ibu tetap menjaga pola makan gizi seimbang, jaga kebersihan genetalia, kelola stress dan istirahat cukup Ibu bersedia. - KiE tentang pil progestin cara kerja, keuntungan efek samping cara pemakaiannya yaitu Pil progestin harus diminum secara rutin setiap hari pada waktu yang sama, jika lupa minum 1 pil, maka harus segera minum pil setelah ingat sebanyak 2 pil pada hari yang sama. jika lupa minum 2 pil atau lebih, maka harus minum sebanyak 2 pil setiap hari sampai sesuai jadwal yang ditetapkan. Gunakan kontrasepsi lain (kondom) sampai paket pil habis. Sehingga ibu dianjurkan untuk selalu mengingat jam minum pil misal dengan bantuan alarm. Ibu bersedia mematuhi anjuran bidan. - Melakukan dokumentasi asuhan. Asuhan telah didokumentasikan	

2. Informed Consent

INFORMED CONSENT (SURAT PERSETUJUAN)

Yang bertanda tangan di bawah ini:

Nama : Riska Andriyani
Tempat/Tanggal Lahir : Magelang, 6 September 2003
Alamat : Losari, Tegayrandu, Srumbung

Bersama ini menyatakan kesediaan sebagai subjek dalam praktik *Continuity of Care (COC)* pada mahasiswa Prodi Pendidikan Profesi Bidan T.A. 2023/2024.

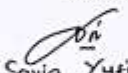
Saya telah menerima penjelasan sebagai berikut:

1. Setiap tindakan yang dipilih bertujuan untuk memberikan asuhan kebidanan dalam rangka meningkatkan dan mempertahankan kesehatan fisik, mental ibu dan bayi. Namun demikian, setiap tindakan mempunyai risiko, baik yang telah diduga maupun yang tidak diduga sebelumnya.
2. Pemberi asuhan telah menjelaskan bahwa ia akan berusaha sebaik mungkin untuk melakukan asuhan kebidanan dan menghindari kemungkinan terjadinya risiko agar diperoleh hasil yang optimal.
3. Semua penjelasan tersebut di atas sudah saya pahami dan dijelaskan dengan kalimat yang jelas, sehingga saya mengerti arti asuhan dan tindakan yang diberikan kepada saya. Dengan demikian terdapat kesepakatan antara pasien dan pemberi asuhan untuk mencegah timbulnya masalah hukum di kemudian hari.

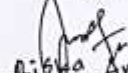
Demikian surat persetujuan ini saya buat tanpa paksaan dari pihak manapun dan agar dipergunakan sebagaimana mestinya.

Yogyakarta, 23 Februari 2026

Mahasiswa


Sorvia Yufida

Klien


Riska Andriyani

3. Surat Keterangan telah Menyelesaikan COC

SURAT KETERANGAN

Yang bertanda tangan di bawah ini:

Nama Pembimbing Klinik : Siti Nuraini Hidayah, S.ST
Instansi : Puskesmas Srumbung

Dengan ini menerangkan bahwa:

Nama Mahasiswa : Sovia Yufida
NIM : P71243125110
Prodi : Pendidikan Profesi Bidan
Jurusan : Kebidanan Poltekkes Kemenkes Yogyakarta

Telah selesai melakukan asuhan kebidanan berkesinambungan dalam rangkapraktik kebidanan holistik *Continuity of Care* (COC)

Asuhan dilaksanakan pada tanggal 23 Februari 2026 sampai dengan 11 April 2026 Judul Asuhan Berkesinambungan pada Ny. R Umur 23 Tahun dari Masa Kehamilan sampai Keluarga Berencana dengan Faktor Risiko Kekurangan Energi Kronis (KEK) di Puskesmas Srumbung Magelang

Demikian surat keterangan ini dibuat dengan sesungguhnya untuk dipergunakan sebagaimana mestinya.

Yogyakarta, April 2026
Bidan (Pembimbing Klinik)



Siti Nuraini Hidayah, S.ST
NIP. 19740717 1993 03 2 004

4. Dokumentasi Foto Pelaksanaan COC













5. Referensi Jurnal

RESEARCH ARTICLE

Early initiation of breastfeeding and severe illness in the early newborn period: An observational study in rural Bangladesh

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Data Availability Statement: All relevant data are within the manuscript and its Supporting Information files.

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Abstract

Background

In Bangladesh, neonatal sepsis is the cause of 24% of neonatal deaths, over 65% of which occur in the early-newborn stage (0–6 days). Only 50% of newborns in Bangladesh initiated breastfeeding within 1 hour of birth. The mechanism by which early initiation of breastfeeding reduces neonatal deaths is unclear, although the most likely pathway is by decreasing severe illnesses leading to sepsis. This study explores the effect of breastfeeding initiation time on early newborn danger signs and severe illness.

Methods and findings

We used data from a community-based trial in Bangladesh in which we enrolled pregnant women from 2013 through 2015 covering 30,646 newborns. Severe illness was defined using newborn danger signs reported by The Young Infants Clinical Science Study Group. We categorized the timing of initiation as within 1 hour, 1 to 24 hours, 24 to 48 hours, ≥ 48 hours of birth, and never breastfed. The analysis includes descriptive statistics, risk attribution, and multivariable mixed-effects logistic regression while adjusting for the clustering effects of the trial design, and maternal/infant characteristics. In total, 29,873 live births had information on breastfeeding among whom 19,914 (66.7%) initiated within 1 hour of birth, and 4,437 (14.8%) neonates had a severe illness by the seventh day after birth. The mean time to initiation was 3.8 hours (SD 16.6 hours). The proportion of children with severe illness increased as the delay in initiation increased from 1 hour (12.0%), 24 hours (15.7%), 48 hours (27.7%), and more than 48 hours (36.7%) after birth. These observations would correspond to a possible reduction by 15.9% (95% CI 13.2–25.9, $p < 0.001$) of severe illness in a real world population in which all newborns had breastfeeding initiated within 1 hour of birth. Children who initiated after 48 hours (odds ratio [OR] 4.13, 95% CI 3.48–4.89, $p < 0.001$) and children who never initiated (OR 4.77, 95% CI 3.52–6.47, $p < 0.001$) had the

Competing interests: The authors have declared that no competing interests exist.

Abbreviations: aOR, adjusted odds ratio; CS, caesarean section; IgA, Immunoglobulin A; LBW, low birth weight; MVD, normal vaginal delivery; OR, odds ratio; PAF, population attributable fraction; PAR%, population attributable risk percent; RCT, randomized controlled trial; RD, restricted data; SDG, Sustainable Development Goals; STROBE, Strengthening the Reporting of Observational studies in Epidemiology.

highest odds of having severe illness. The main limitation of this study is the potential for misclassification because of using mothers' report of newborn danger signs. There could be a potential for recall bias for mothers of newborns who died after being born alive.

Conclusions

Breastfeeding initiation within the first hour of birth is significantly associated with severe illness in the early newborn period. Interventions to promote early breastfeeding initiation should be tailored for populations in which newborns are delivered at home by unskilled attendants, the rate of low birth weight (LBW) is high, and postnatal care is limited.

Trial registration

Trial Registration number: anzctr.org.au ID ACTRN12612000588897.

Author summary

Why was this study done?

- Severe illness, including sepsis, is one of the leading causes of newborn deaths in low-and-middle-income countries and is responsible for 42% deaths in the early neonatal period (0–7 days).
- WHO currently stresses the importance of initiating breastfeeding within the first hour of birth.
- We identified studies conducted in Egypt, India, Nepal, Ghana, Tanzania, and Ethiopia in the past 2 decades that specifically examined the role of timing of breastfeeding initiation and neonatal survival.
- We found no direct evidence reporting the mechanism by which initiation within the first hour of birth can reduce early newborn (0–7 days) deaths.

What did the researchers do and find?

- We report the effect of early initiation of breastfeeding on severe illnesses in the early newborn period using data from a large population-based cohort.
- We defined severe illness using newborn danger signs reported in The Young Infants Clinical Signs Study Group.
- Our results show that the earlier the initiation of breastfeeding, the lower the risk of having severe illnesses in the early newborn stage.
- By accounting for possible reverse causality from infants too ill to initiate breastfeeding, we have established that starting breastfeeding beyond the first hour of life can double the likelihood of having severe illness.

What do these findings mean?

- Early initiation of breastfeeding within 1 hour of birth reduces neonatal mortality, and a reduction in the rate of severe illnesses, including suspected sepsis, likely mediates this effect.
- Our work highlights the need to design and evaluate interventions to promote and support early initiation of breastfeeding that engage women who are at the highest risk of delaying initiation of breastfeeding, as well as those assisting them at delivery.
- Policymakers need to prioritize the effective implementation of interventions to support early and sustained exclusive breastfeeding as priorities for global public health.

Introduction

Globally 2.7 million newborns died during the first 28 days of life (0–27 days) in 2015 [1]. More than a third of these neonatal deaths occurred on the first day, and three-quarters in the early neonatal period, i.e., 0 to 6 days [2,3]. In Bangladesh, overall neonatal mortality has decreased from 55 per 1,000 live births in 1990 [4] to 23 per 1,000 live births in 2015 [1], with an average yearly reduction of 1 death per 1,000. However, this reduction is 3 times slower than the reduction of under-5 mortality over the same period, and neonatal deaths now account for 62% of all under-5 deaths [1], whereas early-neonatal deaths (19.3/1,000) contribute to over 65% of all neonatal deaths.

Sepsis is considered the final common pathway to neonatal death due to severe illnesses and various invasive infections [5]. Neonatal sepsis is one of the leading causes of neonatal deaths in developing countries and is responsible for 13% of deaths in the neonatal period and 42% of deaths in the first 7 days of life [6]. A quarter of the neonatal deaths in Bangladesh are a result of severe illnesses, including, sepsis, tetanus, and diarrhea [1,3]. Despite being highly preventable, severe illnesses including sepsis is a predominant cause of death among newborns globally [7,8] and in Bangladesh [9].

WHO recommends early initiation of breastfeeding within 1 hour of birth as the first step toward ensuring optimal breastfeeding [10]. Literature [11,12] suggests that successful early initiation of breastfeeding facilitates sustained optimal breastfeeding practices throughout infancy. Yet only about 2 in every 5 newborns worldwide and 40% of newborns in South Asia begin breastfeeding within the first hour of life [10,12,13]. In Bangladesh, although there have been some improvements in other breastfeeding practices, including exclusivity and duration of breastfeeding, 49% of children are still initiating breastfeeding after the first hour of birth [14,15].

Recent systematic reviews [16,17] and global reports by WHO [13,18] have revealed that the risk of neonatal mortality increases by about 33% with the delay in initiation between 2 to 23 hours compared with those who initiated within the first hour of birth. Studies from Nepal, Ghana, and India [11,19,20] have reported a protective effect of early initiation of breastfeeding with a 44% reduction in the risk of death among babies surviving the first 48 hours and a 42% reduction in the risk of death among low birth weight (LBW) babies. Timely initiation of breastfeeding can be crucial in reducing infection associated with neonatal mortality [16,20] by enhancing the newborns' immune response to infectious pathogens [21,22]. It is still not confirmed whether early initiation of breastfeeding leading to a lower incidence of severe

illnesses leading to suspected sepsis is the most likely pathway to reduce neonatal deaths, especially in the first 7 days of life. There exists a gap in the evidence explaining the mechanism by which delayed initiation of breastfeeding may impact mortality in resource-limited settings of developing countries. Early initiation ensures that the infant receives colostrum, which is rich in several immunoglobulins and nutritional factors protecting the newborn from short- and long-term illnesses and death [20,23].

Although several articles report the importance of exclusive breastfeeding and duration of breastfeeding in infancy [24–26], we found no study that looked at the influence of the time of initiation of breastfeeding on newborn danger signs with an emphasis on severe illnesses in the early newborn period, i.e., in the first 7 days. In this paper, we aim to explore the effect of timing of breastfeeding initiation on severe illnesses and newborn danger signs among newborns in the first 7 days after birth in rural Bangladesh.

Methods

Parent trial and settings

We collected data for this analysis from a large community-based randomized controlled trial of the effect of iron folic-acid supplementation started early (≤ 12 weeks) and sustained throughout pregnancy on neonatal mortality. Details of the methods and design of the trial are published as a study protocol by Huda and colleagues [27]. We conducted the trial between 2013 and 2015 in the rural areas of 5 districts in Bangladesh. All women aged between 15 and 49 years at the time of enrollment are permanent residents of the study area and became pregnant during the enrolment period were recruited as study participants. These women were followed throughout pregnancy until 6 weeks after pregnancy outcome. Pregnant women were identified by study personnel from active pregnancy surveillance conducted by BRAC (an international nongovernment organization) field workers (*Shyastho Sebikas*) to identify women with menses delayed more than 45 days from the first date of their last menstrual cycle. Study personnel then enrolled consenting women following confirmation of pregnancy using a “pregnancy confirmatory dipstick test.” The analysis for this paper was planned at the time the trial was set up, and the questions required for this analysis was designed before the trial was implemented. We registered the trial with the Australia New Zealand Clinical Trials Registry (ANZCTR). The registration ID is ACTRN12612000588897.

Data collection

Enrollment, follow-up, and data collection was identical throughout the study area. We collected follow-up information from each woman until 42 days after pregnancy outcome. Baseline data including demographic and socioeconomic indicators, intake of nutritional supplements (prior to enrollment and during the study period), parental education, birth history, and maternal health condition during pregnancy. Incentives were given to enrolled women for notifying the research team of the births within 24 hours of delivery. Study personnel collected information at 48 hours after birth on essential newborn care practices and at the 7 to 10 day follow-up visit on day-to-day neonatal danger signs from birth until the seventh day after birth.

On the first postbirth visit (at 48 hours of birth), mothers were asked if they had ever breastfed their newborn, and if they did, how much time elapsed between birth and initiation of breastfeeding. In case a live-born infant died before the first postbirth follow-up visit, we still collected information on breastfeeding initiation for the child before their death. We also measured the birth weight of the child at this visit using a portable digital scale and infant weighing pouch (Weiheng WH-A08). At the 7 to 10 day follow-up visit, we asked the mothers

to give a day-by-day account of the onset, continuation, and cessation of each of the danger signs during the first 7 days. For infants who died within 7 days of birth, we collected the danger signs before death and included them in the analysis. We estimated the gestational age of the infants in weeks, from the last menstrual period reported by mother at enrollment until the reported date of birth outcome.

Study definitions

We included in the analysis live-born infants with known breastfeeding initiation status, including those who were never breastfed. Breastfeeding initiation was the time in hours after birth, when the newborn was first put to the mother's breast. To estimate the extent of adherence and nonadherence to WHO recommendation of initiation within an hour of birth, we categorized the variable as within 1 hour, ≥ 1 hour to <24 hours, ≥ 24 hours to <48 hours, ≥ 48 hours, and never breastfed. We excluded women whose breastfeeding status was unknown or missing.

The outcome variable severe illness was defined using newborn danger signs reported in The Young Infants Clinical Signs Study Group [28,29] and the Bangladesh Neonatal Health Strategy [30]. We identified severe illness in newborns if their mother reported the presence of any 1 of the following 6 signs and symptoms: unusually cold/clammy skin, high body temperature, unconscious/no movement or lethargic, caregivers report of convulsions, rapid breathing or difficulty in breathing, and unable to breastfeed. We did not have information on the seventh sign used in previous studies, namely, severe chest indrawing. Use of this definition for severe illness is recommended for studies in low resource settings, in which suspected sepsis cannot be confirmed with the usual clinical parameters and cut-offs [31,32]. We present severe illness as a binary outcome variable indicating presence or absence of the outcome of interest.

Potential confounders were classified as infant, maternal, and household characteristics. Infant characteristics included the sex of the child (male and female); the birth weight ($\geq 2,500$ g, 2000–2499 g (LBW), and ≤ 2000 g (LBW)); the birth outcome (multiple and single); colostrum (given and not given); appropriate care of the umbilical cord; application of material after cutting the umbilical cord; timing of the first bath after birth (within and after 72 hours); and timing of drying after birth (within and after 5 minutes). Maternal characteristics included age (<20 years and ≥ 20 years); gestational age at birth (<28 weeks, 28–33 weeks, 34–36 weeks, and ≥ 37 weeks); education (no education, primary completed, secondary completed, and higher); parity (primiparous and multiparous); stillbirth/miscarriage of previous child; prolonged labor during childbirth; and fever during childbirth. In addition, we constructed a combined variable for type, place, and skilled attendance at delivery (normal vaginal delivery [NVD] at facility by skilled attendant, NVD at home by unskilled attendant, NVD at home by skilled attendant, and caesarean section (CS) at facility by skilled attendant). Household characteristics included the wealth quintiles. We used standard demographic health survey methods to form a list of household assets to construct the wealth index [33]. Most of the selected potential confounders were reported in previous studies that explored the determinants of the timing of initiation of breastfeeding [11,19,20,22,23].

Statistical analysis

We used frequency distributions to describe the baseline characteristics of the study population and summarized all data on household, maternal, and infant characteristics using descriptive statistics of proportions for categorical variables. All descriptive statistics are presented by the early onset of newborn danger signs for severe illnesses in the newborns. The mean time to

initiate breastfeeding is calculated among children for whom we have a record of their breastfeeding initiation time.

To examine the effect of time of initiation of breastfeeding on the primary outcome of severe illnesses in the early neonatal period, we used a multivariable mixed-effects logistic regression model, adjusting for infant, maternal, and household characteristics that showed an independent association ($p < 0.20$) with the outcome in an univariable model. The variance inflation factor was used to assess collinearity between covariates included in the multivariable model. We examined the outcome variable and found it varied by cluster (data not shown) indicating the need to use multilevel mixed-effects models. All regression models were adjusted for clustering of participants from 100 clusters (from a cluster randomized control trial [RCT]) in 5 districts using multilevel random effects, with clusters nested within district [34]. The variable for treatment arms had been included in all regression models in order to account for the effects of the intervention. We present the odds ratios (ORs) and 95% CIs for severe illness for each category of time to initiate breastfeeding.

To examine the probability of potential reverse causality due to maternal infections and complications at childbirth, we performed a sensitivity analysis excluding the infants whose mother reported prolonged labor or fever around the time of childbirth. We then fitted a restricted version of the adjusted model (restricted model 1) for the same covariates. Further, to explore the probability of reverse causality due to the child being too ill to initiate breastfeeding early, we performed another sensitivity analysis, excluding the children who died in the first 48 hours of birth. We fitted this restricted model (restricted model 2), adjusting for the same covariates of the adjusted model. Finally, we compared the adjusted OR (aOR) of all 3 models to identify any possible influence of reverse causality due to maternal complications during the time of delivery or severe illness of the child immediately after birth.

The population attributable fraction (PAF) of severe illnesses among newborns whose breastfeeding was initiated 1 hour, 24 hours, or 48 hours of birth were calculated using the formula below [35,36]:

$$PAF = P_h \left(\frac{OR - 1}{OR} \right).$$

Here, P_h is the proportion of children with breastfeeding initiated after 1 hour, 24 hours, or 48 hours of birth, and OR is the OR of initiating breastfeeding after 1 hour, 24 hours, and 48 hours of birth. For ease of interpretation, we will present the PAF as population attributable risk percent (PAR%) by multiplying PAF by 100. We calculated the crude PAR% using the ORs from the univariable association. To measure the adjusted contribution of delayed initiation of breastfeeding on the total risk of having severe illness, the adjusted PAR% was calculated using the aORs from both the final adjusted model and restricted model. We estimated 95% CI for all PAR%. We performed all statistical analyses using STATA version 15 (Stata Corporation, College Station, TX).

Ethics

The Ethical Review Committee (ERC) of the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr), and the Human Research Ethics Committee (HREC) of the University of Sydney have granted ethics approval for the parent study. We obtained written informed consent from pregnant women during enrollment into the study, which provided full disclosure regarding the study.

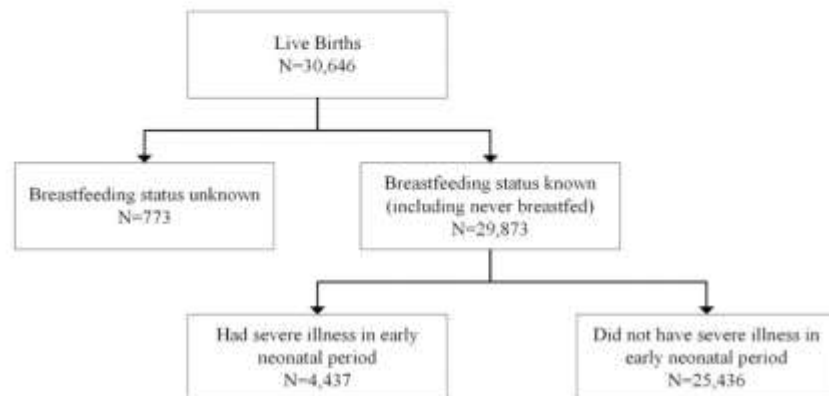


Fig 1. Flowchart of infants with defined breastfeeding initiation time, included in the analysis.

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Results

There were 30,646 live-born infants during the study period, and time to initiation of breastfeeding was known for 29,873 (97.5%) infants. The remaining 773 women had no information on their breastfeeding status, and we excluded them from the analysis. Two-thirds of the newborns (66.7%) with known breastfeeding initiation status had initiated breastfeeding within 1 hour of birth. The mean time to initiate breastfeeding, among children with a record of their breastfeeding initiation time was, 3.8 hours (SD 16.6 hours). By the end of 48 hours, all but 5.7% of infants were breastfed. Severe illness in the neonatal period early (0–6 days) was reported for 4,437 (14.9%; Fig 1) infants of whom 338 (7.6%) subsequently died within the first 7 days. Among the severe illness cases, hyperthermia was the most common danger sign reported by 36.6% mothers, followed by respiratory distress reported by 37.4% mothers. Convulsion was the least reported danger sign and was reported by 7.8% mothers. Fig 2 shows the percentages of newborns who had any of the danger signs in the first 7 days after birth. Table 1 summarizes some infant, maternal, and household characteristics of the newborns by their time of breastfeeding initiation.

Table 2 presents the unadjusted ORs and aORs for the association between timing of initiation of breastfeeding and severe illness in early neonatal stage using univariable and multivariable models from the unrestricted and restricted data. There is a dose response of higher likelihood of severe illness with an increased delay in breastfeeding initiation. Infants who initiated breastfeeding between 1 to 23 hours of birth had significantly higher odds (unadjusted OR 1.45, 95% CI 1.33–1.58) of having signs of severe illness compared with children who initiated breastfeeding within 1 hour of birth. This effect was further seen to have increased for children who initiated between 24 to 47 hours (unadjusted OR 2.94, 95% CI 2.42–3.58) and after 48 hours (unadjusted OR 4.96, 95% CI 4.29–5.73).

When compared with newborns with early initiation of breastfeeding, the aORs for severe illness (Table 2) remained significantly higher among all late breastfeeding initiator groups (1–23 hours: aOR 1.37, 95% CI 1.25–1.50; 24–47 hours: aOR 2.85, 95% CI 2.31–3.52; and 48 hours

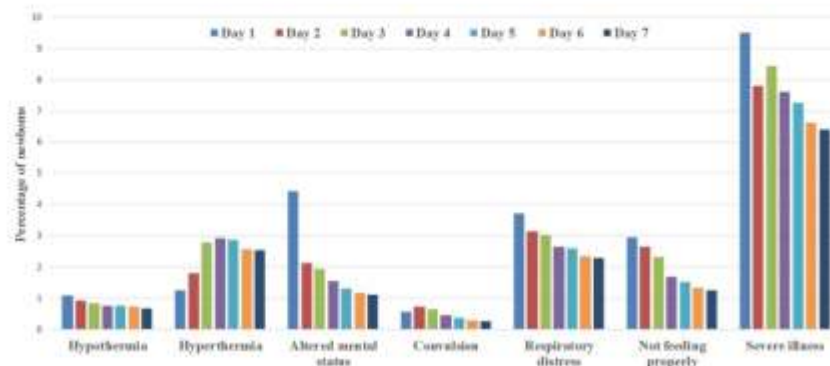


Fig 2. Percentage of newborns ($N = 29,873$) presenting with any danger signs during the first 7 days of birth.

<https://doi.org/10.1371/journal.pmed.1002904.g002>

or more: aOR 4.13, 95% CI 3.48–4.89). The highest risk for severe illness and early newborn danger signs was for those who were unable to initiate breastfeeding (aOR 4.77, 95% CI 3.52–6.47) within the 7 days. The multivariable models were adjusted for confounders that had univariable $p < 0.2$ (S1 Table). All variance inflation factors were < 5 , indicating that collinearity was not an issue for the multivariable models.

In the adjusted model using unrestricted data (S1 Table), the odds of having severe illness was lower for mothers who delivered their child by unskilled birth attendants at home (aOR 0.75, 95% CI 0.67–0.84), compared with women who delivered at a facility with skilled attendants. Performing CS at a facility by skilled attendants was associated with a reduced risk of early newborn danger signs (aOR 0.60, 95% CI 0.52–0.68). Infants born with a birthweight of $\geq 2,500$ g and who received appropriate thermal and cord care at birth had significantly ($p < 0.0001$) lower odds of having severe illnesses than those who had LBW and inappropriate postbirth care. Infants who were first born, whose mother's preceding pregnancy ended in stillbirth or miscarriage, and whose mother has prolonged labor during childbirth had significantly higher odds of having severe illnesses in the first 7 days after birth.

Sensitivity analysis of the adjusted association after excluding the children whose mother had prolonged labor or fever at childbirth (Table 2) resulted in slightly higher odds of severe illness among all the breastfeeding initiation categories. The aORs of having early newborn danger signs and severe illness among late initiators slightly increased for children of women who did not have prolonged labor or fever during childbirth. About one-fifth (18.5%) of the 19,914 women who initiated within the first hour had prolonged labor. The increased likelihood of early newborn danger signs in the reference group leads to an overall increase in odds of severe illnesses among all late initiators. Excluding children who died in the first 48 hours (Table 2) had little to no effect on the adjusted risk of early newborn danger signs and severe illnesses among late initiators compared with the final adjusted model. The unadjusted and adjusted associations between severe illnesses in the early neonatal stage and a range of confounders used to generate the models using unrestricted and restricted data are shown in S1 Table. The association between breastfeeding initiation time and severe illness were similar when the regression model was adjusted for all covariates as continuous variables (S2 Table).

Table 1. Distribution of infant, maternal, and household characteristics of study participants by time when breastfeeding was initiated.

Characteristics	Breastfeeding initiated	
	Within 1 hour (n = 19,914)	After 1 hour (n = 9,939)
Infant characteristics		
Sex of child		
Female	9,461 (47.3)	4,740 (47.6)
Male	10,453 (52.5)	5,219 (52.4)
Birth weight		
≥2,500 g	13,917 (70.7)	7,025 (70.4)
2,000–2,499 g	3,571 (19.7)	1,495 (16.7)
<2,000 g	660 (3.6)	418 (4.9)
Birth outcome		
Single	19,773 (99.3)	9,732 (97.7)
Multiple	141 (0.7)	227 (2.3)
Colostrum		
Given	19,757 (99.2)	8,826 (88.6)
Not given	157 (0.8)	1,133 (11.4)
Instrument boiled before the cord was cut		
Boiled	16,366 (82.3)	7,719 (77.5)
Not boiled	3,528 (17.7)	2,240 (22.5)
Application of material after cutting cord		
Applied nothing	17,298 (86.9)	7,919 (79.5)
Material applied to cord	2,616 (13.1)	2,040 (20.5)
Time of first bath		
After 72 hours	11,452 (57.5)	6,204 (62.3)
Within 72 hours	8,462 (42.5)	3,755 (37.7)
Timing of drying		
Within 5 minutes	11,730 (58.9)	6,552 (65.7)
After 5 minutes/not dried	8,184 (41.1)	3,407 (34.3)
Maternal Characteristics		
Mother's age		
≥30 years	15,817 (79.4)	7,617 (76.5)
<30 years	4,097 (20.6)	2,342 (23.5)
Gestational age at birth		
≥37 weeks	14,647 (73.6)	7,177 (72.1)
34–36 weeks	3,163 (15.9)	1,650 (16.6)
28–33 weeks	1,858 (9.3)	997 (10.0)
<28 weeks	246 (1.2)	135 (1.4)
Maternal education		
Higher	1,026 (5.2)	606 (6.1)
Secondary	7,827 (39.3)	4,560 (45.8)
Primary	6,195 (31.1)	2,937 (29.5)
No education	4,866 (24.4)	2,056 (20.6)
Parity		
Multiparous	13,070 (65.6)	6,118 (61.4)
Primiparous	6,844 (34.4)	3,841 (38.6)
Type, place, and skilled attendance at delivery		
NVD facility skilled	2,357 (11.8)	1,334 (13.4)

(Continued)

Table 1. (Continued)

Characteristics	Breastfeeding initiated	
	Within 1 hour (n = 19,914)	After 1 hour (n = 9,939)
NVD home unskilled	14,096 (70.8)	5,594 (54.2)
NVD home skilled	1,250 (6.2)	457 (4.6)
CS facility skilled	2,231 (11.2)	2,774 (27.9)
Stillbirth/miscarriage of previous child		
No	19,012 (95.5)	9,478 (95.2)
Yes	902 (4.5)	461 (4.8)
Prolonged labor during childbirth		
No	16,221 (81.3)	7,602 (76.3)
Yes	3,693 (18.5)	2,337 (23.7)
Fever (mother) at childbirth		
No	19,636 (98.6)	9,733 (97.8)
Yes	278 (1.4)	224 (2.2)
Household characteristics		
Asset		
First (Lowest)	4,101 (20.6)	1,904 (19.1)
Second	4,157 (20.9)	1,794 (18.0)
Middle	4,270 (21.5)	1,722 (17.3)
Fourth	4,007 (20.1)	2,109 (21.1)
Fifth (Highest)	3,373 (16.9)	2,439 (24.5)

Abbreviations: CS, caesarean section; NVD, normal vaginal delivery

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Table 2. Unadjusted OR and aOR of presenting with any one early newborn danger sign (severe illness) among newborns (0–6 days) by breastfeeding initiation time categories (N = 29,873).

Breastfeeding initiation time	Breastfeeding initiated n (%)	Severe illness n (%)	Unadjusted OR (95% CI)	aOR ^a (95% CI)	aOR ^a (95% CI) using RD1 ^b	aOR ^a (95% CI) using RD2 ^b
<1 hour	19,914 (66.7)	2,382 (12.0)	1.00	1.00	1.00	1.00
1 to <24 hours	7,644 (25.6)	1,200 (15.7)	1.45 (1.33–1.58)*	1.37 (1.25–1.50)*	1.41 (1.29–1.55)*	1.36 (1.24–1.49)*
24 to <48 hours	599 (2.0)	166 (27.7)	2.94 (2.42–3.58)*	2.85 (2.31–3.52)*	2.87 (2.32–3.53)*	2.87 (2.32–3.54)*
≥48 hours	1,016 (3.4)	373 (36.7)	4.96 (4.29–5.73)*	4.13 (3.48–4.89)*	4.26 (3.59–5.04)*	4.15 (3.49–4.92)*
Never breastfed	700 (2.3)	316 (45.1)	7.05 (5.99–8.31)*	4.77 (3.52–6.47)*	5.06 (3.74–6.85)*	5.96 (4.29–8.20)*

^aAdjusted for sex of child; birth weight; instrument boiled before the cord was cut; application of material after cutting cord; time of first bath; timing of drying; colostrum; gestational age at birth; parity; type, place, and skilled attendance at delivery; stillbirth/miscarriage of previous child; prolonged labour during childbirth; fever (mother) at childbirth; assets; and the treatment arms. Also adjusted for clustering of participants from 100 clusters in 5 districts using multilevel random effects (clusters nested within district).

^bAdjusted for all the above mentioned variables except prolonged labor during childbirth and fever (mother) at childbirth. Also adjusted for clustering effect.

*Excluding children (n = 6,346) whose mother reported maternal complications (prolonged labor or fever) during the time of delivery.

^cExcluding children (n = 470) who died in the first 48 hours.

*p < 0.001

Abbreviations: aOR, adjusted odds ratio; OR, odds ratio; RD, restricted data

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Table 3. Crude and adjusted PAR% of severe illness in all breastfeeding initiation time categories.

Breastfeeding initiation time	Crude PAR% (95% CI)	Adjusted PAR% (95% CI)	Adjusted PAR% (95% CI) RD1 ^a	Adjusted PAR% (95% CI) RD2 ^b
After 1 hour	23.6 (21.1–25.9)	15.9 (13.2–18.5)	16.7 (14.0–19.4)	16.9 (15.2–18.7)
After 24 hours	14.0 (12.7–15.4)	10.6 (9.1–12.0)	10.8 (9.3–12.3)	10.7 (9.1–12.2)
After 48 hours	11.9 (10.6–13.1)	8.5 (7.2–9.8)	8.8 (7.5–10.1)	8.5 (7.1–10.0)

^aExcluding children (*n* = 6,340) whose mother reported maternal complications (prolonged labor or fever) during the time of delivery.

^bExcluding children (*n* = 470) who died in the first 48 hours.

Abbreviations: PAR%, population attributable risk percent; RD, restricted data.

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Table 3 shows that the PAR% decreases with increased delay in breastfeeding initiation. After adjusting for confounders, about 16% of the early newborn danger signs and severe illness could have been reduced if all newborns initiated breastfeeding within the first hour of birth. The PAR% for initiating breastfeeding after 24 hours indicates that 10.6% of the total risk of early newborn danger signs and severe illnesses were attributable to initiating breastfeeding after the first day of birth.

Discussion

We found that early initiation of breastfeeding within an hour of birth was significantly associated with a reduced risk of early newborn (0–6 days) danger signs and severe illnesses in rural Bangladesh. We detected a dose-response relationship of increasing odds of severe illnesses in the early newborn stage with greater delay in initiation of breastfeeding after adjusting for confounders. Our findings indicate that the highest risk of presenting with early newborn danger signs following delayed initiation of breastfeeding beyond the first hour was with newborns who were first born, had very LBW (<2,000 g), did not receive appropriate cord and thermal care, were born through NVD at home with unskilled attendance, had a history of stillbirth/miscarriage of a previous sibling, or whose mother had prolonged labor during childbirth. We also found that one-sixth of the reported danger signs in the early neonatal period could be reduced if children who initiated beyond the first hour could initiate within the recommended time. Excluding children whose mother had maternal complications and those who died within 48 hours had a minimum to no effect on the fraction of severe illness cases that could be prevented. The findings from this study highlight the need to encourage women and caregivers to facilitate early initiation of breastfeeding to reduce early newborn danger signs and severe illnesses, especially among high-risk newborns.

Our study is one of the few studies that specifically explores the effect of delayed breastfeeding initiation on severe illness during the early newborn stage (0–6 days after birth), the most crucial stage of the neonatal period [17]. Most studies on the health effects of early initiation of breastfeeding have examined all-cause neonatal mortality [11,19,20,23] and infectious diseases related to neonatal mortality such as diarrhea and respiratory infections [16,38] during the entire neonatal period. In this study, information on the timing of initiation and danger signs was collected within 7 to 10 days of birth, thus reducing the recall period of reporting both the exposure and outcome. As the study sample originates from a large community-based randomized controlled trial, we were able to collect data from a large number of newborns. Sensitivity analyses excluding infants who died within 48 hours of birth, as done in several previous studies looking at mortality outcomes [11,19,20,23], resulted in no change in the risk of severe illnesses in relation to the time of initiation of breastfeeding. Even though our analysis does not provide direct evidence of the absence of reverse causation, it is very unlikely that the