

Appendix Table 1: Data extraction for anemia studies of children under 5 years in Western China

ID (1)	Reference (2)	Language (3)	Study design (4)	Year of data collection (5)	Place in which the study was conducted (6)	Age range (months) (7)	Sample size (8)	Prevalence estimates (9)	Quality score # (10)
a1	Xiao SY et al, 2021	Chinese	cross sectional study	2018.04-2018.07	Liangshan Prefecture, Sichuan Province	6-24	1244	51.90%	7
a2	Luo M et al, 2021	Chinese	cross sectional study	2019	Chengdu, Zigong, Panzihua, Deyang, Luzhou, Leshan, Neijiang, Yibin, Guang'an, Suining, Guangyuan, Aba, Ganzi and Liangshan Prefecture, Sichuan Province	0-59	7534	6.16%	6
a3	Gao Y et al, 2020	Chinese	cross sectional study	2018.03-2018.05	Xinjiang Autonomous Region	6-24	3837	45.00%	7
a4	Xu W et al, 2020	Chinese	cross sectional study	2017.05-2019.07	Mianyang Prefecture, Sichuan Province	0-36	1090	17.06%	6
a5	Li FY et al, 2019	Chinese	cross sectional study	2017.08	Gansu Province	6-24	3188	25.69%	8
a6	Nie JC et al, 2019	Chinese	cohort study	2013-2016	Shaanxi Province	4-42	4722	44.40%	7
a7	Yue L et al, 2019	Chinese	cross sectional study	2018.09-2018.10	Gannan Prefecture, Gansu Province	0-60	1327	—†	7
a8	Zhu XX et al, 2019	Chinese	surveillance	2012-2018	Yunnan Province	0-59	35225	14.58%	7
a9	Zheng YY et al, 2019	Chinese	surveillance	2013.09-2013.12	Guizhou Province	6-59	853	14.90%	8
a10	Sun C et al, 2019	Chinese	cross sectional study	2014.10-2014.11	Liangshan Prefecture, Sichuan Province and Gannan Prefecture, Gansu Province	2-24	1065	52.68%	7
a11	Chen Y et al, 2019	Chinese	cohort study	2017.08-2018.08	Zunyi Prefecture, Guizhou Province	0-11	672	37.50%	8
a12	Li XQ et al, 2018	Chinese	cross sectional study	—	Ningxia Autonomous Region	6-24	2047	26.40%	8
a13	Yu CY et al, 2018	Chinese	cross sectional study	2017.02-2018.01	Qiannan Prefecture, Guizhou Province	6-23	19498	47.59%	8
a14	Li ZC, 2018	Chinese	cross sectional study	2018.01-2018.12	Panzihua Prefecture, Sichuan Province	0-36	1500	16.73%	6
a15	Shang GMJ, 2018	Chinese	cross sectional study	2013.04-2013.10	Shangluo, Ankang, Hanzhong Prefecture, Shaanxi Province	8-10	650	50.61%	-

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a16	Liu GM et al, 2018	Chinese	surveillance	2012-2016	Korla and Shanshan County, Xinjiang Autonomous Region	0-59	19394	9.81%	7
a17	Zhan CX et al, 2017	Chinese	cross sectional study	2013.07-2013.09	Guizhou Province	6-23	779	57.60%	7
a18	Chen LQ et al, 2017	Chinese	cross sectional study	2014.10-2014.11	Jianchuan, Yiliang, Mojiang and Lushui County, Yunnan Province	6-23	1226	47.15%	7
a19	Jiang QJ et al, 2017	Chinese	cross sectional study	2013.07	Chongqing Municipality	6-24	706	51.70%	7
a20	Tang YB et al, 2016	Chinese	cross sectional study	2012.12	Lanping and Heqing County, Yunnan Province	6-23	642	35.20%	6
a21	Zhang YF et al, 2016	Chinese	cross sectional study	2012.08	Huzhu, Minhe and Guinan County, Qinghai Province	6-23	4394	67.80%	6
a22	Eysa ZRH et al, 2016	Chinese	cross sectional study	2014.06-2015.06	Altay Prefecture, Xinjiang Autonomous Region	0-36	793	67.30%	7
a23	Luo RF et al, 2016	Chinese	cross sectional study	2013.04-2013.10	Shaanxi Province	6-12	1770	48.87%	8
a24	Jiang QJ et al, 2016	Chinese	cohort study	2013.07-2014.07	Chongqing Municipality	6-24	706	—†	7
a25	Sun L et al, 2015	Chinese	cross sectional study	—	Shaanxi Province	6-11	951	54.26%	8
a26	Xu YY et al, 2015	Chinese	cross sectional study	2012.07	Yushu, Chenduo, Zhiduo, Nangqian, Zado and Qumalai County, Qinghai Province	0-35	978	64.70%	6
a27	Hong M et al, 2015	Chinese	cross sectional study	2014	Hulunbuir Prefecture, Inner Mongolia Autonomous Region	0-59	338	5.33%	7
a28	Yang MZ et al, 2014	Chinese	cross sectional study	2011.03-2011.07	Yunnan, Guizhou, and Sichuan Province	6-24	3410	22.40%	7
a29	Tang SW et al, 2014	Chinese	cross sectional study	2012.09-2012.11	Urumqi and Urumqi County, Xinjiang Autonomous Region	0-36	2138	29.98%	8
a30	Chen R et al, 2014	Chinese	randomized controlled trial	2009-2010	Gansu Province	0-60	1218	3.69%	6
a31	Dong CX et al, 2013	Chinese	cross sectional study	—	Yuzhong and Yongjing County, Gansu Province	6-23	837	58.20%	7
a32	Yuan YY et al, 2013	Chinese	cross sectional study	—	Shaanxi Province	0-18	336	35.12%	6

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a33	Yao LQ et al, 2013	Chinese	cross sectional study	—	Xishuangbanna, Yuxi and Dehong Prefecture, Yunnan Province	0-59	2355	29.55%	7
a34	Zhao SH et al, 2013	Chinese	cross sectional study	—	Danzhai, Huishui and Longli County, Guizhou Province	0-59	884	35.27%	6
a35	Yao LQ et al, 2013	Chinese	cross sectional study	2009.06-2011.09	Yunnan Province	0-59	9850	13.22%	8
a36	Sun LH et al, 2012	Chinese	cross sectional study	2010	Pucheng, Chunhua, Yuyang, Jia and Xixiang County, Shaanxi Province	3-60	1951	32.00%	7
a37	Zhao WL et al, 2012	Chinese	cross sectional study	2009.08-2009.09	Longxi and Kangle County, Gansu Province	0-59	1398	11.70%	8
a38	Ma YY, 2012	Chinese	randomized controlled trial	2009.04-2009.08	Moridawa Banner, Oroqen Banner, Arong Banner and Zhalantun, Inner Mongolia Autonomous Region	6-24	1364	45.00%	-
a39	Zhao WL et al, 2012	Chinese	randomized controlled trial	—	Longxi and Kangle County, Gansu Province	0-59	1212	—†	8
a40	Kang YY et al, 2012	Chinese	cross sectional study	2010.07-2010.08	Lhasa Prefecture, Tibet Autonomous Region	6-35	540	41.70%	8
a41	Zhang JG et al, 2011	Chinese	cross sectional study	2009	Sichuan, Gansu and Guizhou Province, Inner Mongolia, Guangxi and Xinjiang Autonomous Region	0-59	8141	24.10%	8
a42	Li ML, 2011	Chinese	cross sectional study	2008.10	Guangxi Autonomous Region	0-24	663	25.90%	-
a43	Zhao XF et al, 2011	Chinese	cross sectional study	2009.04	Pengzhou County, Sichuan Province, Kang County, Gansu Province, Ningqiang County, Shaanxi Province	0-59	466	31.07%	6
a44	Huo JS et al, 2015	English	cohort study	2010.05-2011.11	Sichuan, Shaanxi and Gansu Provinces	6-23	4590	52.80%	9
a45	Yang WF et al, 2012	English	cross sectional study	2010.03-2010.10	Shaanxi Province	0-18	336	35.12%	8
a46	Huang YW et al, 2019	English	cross sectional study	2018.07	Huzhu County, Qinghai Province	6-23	754	59.10%	9
a47	Luo RF et al, 2017	English	quasi-experiment	2013.04-2015.04	Shaanxi Province	6-11	1802	48.00%	9
a48	Zhang YF et al, 2016	English	quasi-experiment	2012.08-2014.08	Huzhu and Guinan County in Qinghai Province	6-23	2593	75.74%	8
a49	Yang F et al, 2015	English	cohort study	2009.06	Shifang Prefecture, Sichuan Province	0-59	2165	12.40%	8

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a50	Dong CX et al, 2013	English	quasi-experiment	2010.05-2011.10	Kang County, Gansu Province	6-24	1019	74.30%	6
a51	Gao WL et al, 2013	English	cross sectional study	2005.06-2005.08	Xinjiang, Qinghai, Ningxia, Sichuan, Guangxi, Guizhou, Gansu Province, Inner Mongolia Autonomous Region, and Chongqing Municipality	0-35	6711	52.47%	7
a52	Sun J et al, 2013	English	cross sectional study	2010.04-2010.05	Sichuan, Shaanxi and Gansu Provinces	6-23	1254	52.20%	6
a53	Wang L et al, 2019	English	cohort study	2013-2017	The Qinba Mountain Area of China	6-12	1170	51.00%	7
a54	Wang L et al, 2018	English	surveillance	2016-2017	Xinjiang, Tibet, Qinghai, Ningxia, Yunnan, Sichuan, Guangxi, Guizhou, Gansu and Shaanxi Province, Inner Mongolia Autonomous Region, and Chongqing Municipality	6-30	2380	49.00%	7
a55	Wang J et al, 2015	English	cross sectional study	2010.08-2010.09	Zheng'an County, Guizhou Province, Wuding County, Yunnan Province and Zhen'an County, Shaanxi Province	12-35	1379	25.60%	7

Notes: * Master's degree thesis. † Total anemia prevalence was not reported.

One point is assigned to a 'yes' response, and the quality score ranges from 0 to 9, with a higher score indicating a lower risk of bias.

Appendix Table 2: Methodological quality assessments using Joanna Briggs Institute Critical Appraisal Checklist for Studies Reporting Prevalence Data forms

ID	Study	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Score [#]
a1	Xiao SY et al, 2021	Y	Y	N	Y	Y	Y	Y	Y	U	7
a2	Luo M et al, 2021	Y	Y	N	Y	Y	Y	N	Y	U	6
a3	Gao Y et al, 2020	Y	Y	N	Y	Y	Y	Y	Y	U	7
a4	Xu W et al, 2020	Y	N	N	Y	Y	Y	Y	Y	U	6
a5	Li FY et al, 2019	Y	Y	N	Y	Y	Y	Y	Y	Y	8
a6	Nie JC et al, 2019	Y	Y	N	Y	Y	Y	Y	Y	U	7
a7	Yue L et al, 2019	Y	Y	N	Y	Y	Y	Y	Y	U	7
a8	Zhu XX et al, 2019	Y	Y	N	Y	Y	Y	Y	Y	U	7
a9	Zheng YY et al, 2019	Y	Y	N	Y	Y	Y	Y	Y	Y	8
a10	Sun C et al, 2019	Y	Y	N	Y	Y	Y	Y	Y	U	7
a11	Chen Y et al, 2019	Y	Y	N	Y	Y	Y	Y	Y	Y	8
a12	Li XQ et al, 2018	Y	Y	Y	Y	Y	Y	U	Y	Y	8
a13	Yu CY et al, 2018	Y	Y	N	Y	Y	Y	Y	Y	Y	8
a14	Li ZC, 2018	Y	Y	N	Y	Y	N	Y	Y	U	6
a15	Shang GMJ, 2018*	-	-	-	-	-	-	-	-	-	-
a16	Liu GM et al, 2018	Y	Y	N	Y	Y	Y	Y	Y	U	7
a17	Zhan CX et al, 2017	Y	Y	N	Y	Y	Y	Y	Y	U	7
a18	Chen LQ et al, 2017	Y	Y	N	Y	Y	Y	Y	Y	U	7
a19	Jiang QJ et al, 2017	Y	Y	N	Y	Y	Y	Y	Y	U	7
a20	Tang YB et al, 2016	Y	Y	N	N	Y	Y	Y	Y	U	6
a21	Zhang YF et al, 2016	Y	Y	N	N	Y	Y	Y	Y	U	6
a22	Eysa ZRH et al, 2016	Y	Y	N	Y	Y	Y	Y	Y	U	7
a23	Luo RF et al, 2016	Y	Y	N	Y	Y	Y	Y	Y	Y	8
a24	Jiang QJ et al, 2016	Y	N	N	Y	Y	Y	Y	Y	Y	7
a25	Sun L et al, 2015	Y	Y	N	Y	Y	Y	Y	Y	Y	8
a26	Xu YY et al, 2015	Y	Y	N	Y	Y	Y	N	Y	N	6
a27	Hong M et al, 2015	Y	Y	N	Y	Y	Y	Y	Y	U	7
a28	Yang MZ et al, 2014	Y	Y	N	Y	Y	Y	N	Y	Y	7
a29	Tang SW et al, 2014	Y	Y	Y	Y	Y	Y	N	Y	Y	8
a30	Chen R et al, 2014	Y	Y	N	Y	Y	N	Y	Y	U	6
a31	Dong CX et al, 2013	Y	Y	N	Y	Y	Y	Y	Y	U	7
a32	Yuan YY et al, 2013	Y	Y	N	Y	Y	Y	N	Y	U	6
a33	Yao LQ et al, 2013	Y	Y	Y	N	Y	Y	Y	Y	U	7
a34	Zhao SH et al, 2013	Y	Y	N	N	Y	Y	Y	Y	U	6
a35	Yao LQ et al, 2013	Y	Y	Y	Y	Y	Y	Y	Y	U	8
a36	Sun LH et al, 2012	Y	Y	N	Y	Y	Y	Y	Y	U	7
a37	Zhao WL et al, 2012	Y	Y	N	Y	Y	Y	Y	Y	Y	8
a38	Ma YY, 2012*	-	-	-	-	-	-	-	-	-	-

ID	Study	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Score [#]
a39	Zhao WL et al, 2012	Y	Y	N	Y	Y	Y	Y	Y	Y	8
a40	Kang YY et al, 2012	Y	Y	N	Y	Y	Y	Y	Y	Y	8
a41	Zhang JG et al, 2011	Y	Y	N	Y	Y	Y	Y	Y	Y	8
a42	Li ML, 2011*	-	-	-	-	-	-	-	-	-	-
a43	Zhao XF et al, 2011	Y	Y	N	Y	Y	N	Y	Y	U	6
a44	Huo JS et al, 2015	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
a45	Yang WF et al, 2012	Y	Y	Y	Y	Y	Y	N	Y	Y	8
a46	Huang YW et al, 2019	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
a47	Luo RF et al, 2017	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
a48	Zhang YF et al, 2016	Y	N	Y	Y	Y	Y	Y	Y	Y	8
a49	Yang F et al, 2015	Y	Y	N	Y	Y	Y	Y	Y	Y	8
a50	Dong CX et al, 2013	Y	Y	N	Y	Y	Y	N	Y	N	6
a51	Gao WL et al, 2013	Y	Y	N	Y	Y	Y	U	Y	Y	7
a52	Sun J et al, 2013	Y	Y	N	Y	Y	Y	N	Y	N	6
a53	Wang L et al, 2019	Y	Y	N	Y	Y	Y	Y	Y	N	7
a54	Wang L et al, 2018	Y	Y	N	Y	Y	Y	Y	Y	U	7
a55	Wang J et al, 2015	Y	Y	N	Y	Y	Y	Y	Y	U	7
56	Liu HX et al, 2019	N	N	N	Y	Y	Y	Y	Y	U	5
57	Dai SJ, 2019	N	N	N	Y	Y	Y	Y	Y	U	5
58	Wang XR et al, 2017	Y	Y	N	Y	Y	Y	N	N	U	5
59	Chen R et al, 2013	Y	Y	N	Y	Y	N	N	Y	U	5
60	Zhang RF et al, 2018	Y	Y	N	Y	Y	Y	U	N	U	5
61	Cui JS et al, 2018	Y	Y	N	Y	Y	Y	U	N	U	5
62	Zhu F et al, 2017	Y	N	N	Y	Y	Y	U	Y	U	5
63	Li X et al, 2017	N	Y	N	U	U	Y	Y	Y	Y	5
64	Xu YQ et al, 2011	N	Y	N	Y	Y	Y	N	Y	U	5
65	Wei P et al, 2016	Y	N	N	Y	Y	Y	U	Y	U	5
66	Gi LPL et al, 2015	Y	Y	N	Y	Y	N	U	Y	U	5
67	Shen QL et al, 2019	N	N	N	Y	Y	Y	U	Y	U	4
68	Zhao B et al, 2019	Y	N	N	Y	Y	Y	N	N	U	4
69	Jing S et al, 2016	N	U	N	Y	Y	Y	U	Y	U	4
70	Wu XH et al, 2016	N	N	N	Y	Y	Y	U	Y	U	4
71	Lu ZH et al, 2015	N	N	U	Y	Y	Y	U	Y	U	4
72	Guan LL et al, 2014	U	U	N	Y	Y	Y	U	Y	U	4
73	Yang YY et al, 2014	N	Y	N	N	Y	Y	U	Y	U	4
74	Ma JF et al, 2014	N	N	N	Y	Y	Y	U	Y	U	4
75	Sun J et al, 2014	N	N	N	Y	Y	Y	U	Y	U	4
76	Ma Y et al, 2014	N	N	N	Y	Y	Y	U	Y	U	4
77	He M et al, 2013	N	N	N	Y	Y	N	Y	Y	U	4
78	Hong M et al, 2012	Y	N	N	Y	Y	N	Y	N	U	4

ID	Study	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Score [#]
79	Xu DF et al, 2011	N	N	N	Y	Y	Y	N	Y	U	4
80	Yao SY et al, 2020	Y	U	U	Y	U	N	N	Y	U	3
81	Lin G et al, 2019	N	N	N	Y	Y	Y	N	N	U	3
82	Du XJ et al, 2017	N	N	N	Y	Y	Y	U	N	U	3
83	Yang XD et al, 2017	N	N	N	Y	Y	Y	U	N	U	3
84	Zhang YY et al, 2016	N	N	N	N	Y	Y	U	Y	U	3
85	Luo GQ et al, 2016	Y	U	Y	N	U	Y	U	U	U	3
86	Dong YL et al, 2016	Y	N	N	Y	U	U	U	Y	U	3
87	Li YZ et al, 2015	U	U	U	N	Y	Y	U	Y	U	3
88	Gu LMR et al, 2014	U	U	U	Y	Y	N	U	Y	U	3
89	Lie LZ et al, 2014	Y	N	N	Y	U	N	U	Y	U	3
90	Cui CX et al, 2013	Y	Y	N	N	U	Y	N	N	U	3
91	Huang CX et al, 2012	Y	N	N	Y	N	N	N	Y	U	3
92	Qiu YL et al, 2012	N	N	N	N	Y	Y	U	Y	U	3
93	Su XQ et al, 2011	N	N	N	Y	Y	Y	N	N	U	3
94	Yin MH et al, 2012	N	N	N	N	Y	Y	N	N	U	2
95	Yu WT et al, 2012	Y	N	N	N	N	N	Y	N	U	2
96	Dong YL et al, 2014	Y	N	N	N	Y	N	N	N	U	2
97	Du WW et al, 2011	N	N	N	Y	N	N	N	Y	U	2
98	Wei XX et al, 2011	N	N	N	N	N	Y	N	Y	U	2
99	Wan R et al, 2011	Y	U	N	N	U	N	Y	N	U	2
100	Zhou Q et al, 2017	N	N	N	Y	Y	N	N	U	U	2

Notes: * Master's degree thesis.

[#] Each item has four choices: yes (Y), no (N), unclear (U) or not applicable (-). One point is assigned to a 'yes' response, and the quality score is the sum of the 9 items, ranging from 0 to 9, with a higher score indicating a lower risk of bias.

JBI Critical Appraisal Checklist for Studies Reporting Prevalence Data

Reviewer _____ Date _____.

Author _____ Year _____ Record Number _____.

	Yes	No	Unclear	Not applicable
1. Was the sample frame appropriate to address the target population?	?	?	?	?
2. Were study participants sampled in an appropriate way?	?	?	?	?
3. Was the sample size adequate?	?	?	?	?
4. Were the study subjects and the setting described in detail?	?	?	?	?
5. Was the data analysis conducted with sufficient coverage of the identified sample?	?	?	?	?
6. Were valid methods used for the identification of the iron deficiency anemia (with a general diagnostic criteria)?	?	?	?	?
7. Was the condition measured in a standard, reliable way for all participants?	?	?	?	?
8. Was there appropriate statistical analysis?	?	?	?	?
9. Was the response rate adequate, and if not, was the low response rate managed appropriately (>15% as sufficient)?	?	?	?	?

Medline search term - Ovid interface

1. exp Anemia/
2. anaemia.mp.
3. exp Anemia, Iron-Deficiency/
4. IDA.mp.
5. nutritional anemia.mp.
6. 1 or 2 or 3 or 4 or 5
7. exp Infant/
8. exp Child/
9. exp Child, Preschool/
10. 7 or 8 or 9
11. exp China/
12. Chinese.mp.
13. 11 or 12
14. 6 and 10 and 13
15. limit 14 to yr = "2011-2021"

Appendix reference list:

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13. Chunyan Y, Wenfen B, Li X, et al. Prevalence and influence factors of iron deficiency anemia among 6-23 months old children in Qiannan area of Guizhou province. *Chinese Journal of Public Health* 2018;34(6):812-16.
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16. Guang-ming; L, Fei; G, Ping; F, et al. Surveillance of nutritional status of children under 5 year-old in two counties, Xinjiang. *Endemic Diseases Bulletin (china)* 2018;33(4):65-67,74.
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