

Supplementary Table 1. Quality assessment of cross-sectional studies using JBI tool

JBI items: J1 inclusion criteria; J2 participants and setting; J3 exposure measurement; J4 objective criteria for the condition; J5 confounders identified; J6 strategies for confounding; J7 outcome measurement; J8 statistical analysis. Y = yes; N = no; U = unclear; NA = not applicable. Overall rating: low risk 7–8, moderate risk 5–6, high risk 0–4.

Sr. No.	Study	Design	J 1	J 2	J 3	J 4	J 5	J 6	J 7	J 8	Score (out of 8)	Risk of bias	Remarks
1	Soni et al., 2016 [9]	Cross-sectional survey	Y	Y	Y	Y	Y	Y	Y	Y	8/8	Low	None identified
2	Weaver & Madhu, 2015 [11]	Cross-sectional exploratory study	Y	Y	Y	Y	Y	U	Y	Y	7/8	Low	Control of confounding incompletely reported
3	Ranasinghe et al., 2016 [12]	Cross-sectional multi-country survey	Y	Y	Y	Y	Y	U	Y	Y	7/8	Low	Control of confounding incompletely reported
4	Nyamathi et al., 2011 [13]	Cross-sectional correlational study	Y	Y	Y	Y	U	U	Y	Y	6/8	Moderate	Confounder identification and control incompletely reported
5	Heylen et al., 2015 [14]	Cross-sectional secondary analysis	Y	Y	Y	Y	Y	Y	Y	Y	8/8	Low	None identified
6	Bishwajit et al., 2017 [15]	Cross-sectional secondary analysis	Y	Y	Y	Y	Y	Y	Y	Y	8/8	Low	None identified
7	Fahey et al., 2016 [16]	Cross-sectional survey	Y	Y	Y	Y	Y	U	Y	Y	7/8	Low	Control of confounding incompletely reported
8	Shivalli & Gururaj, 2015 [17]	Analytical cross-sectional study	Y	Y	Y	Y	Y	Y	Y	Y	8/8	Low	None identified
9	Nagpal et al., 2008 [19]	Cross-sectional community survey	Y	Y	Y	Y	U	U	Y	Y	6/8	Moderate	Confounder identification and control incompletely reported
10	Jonas et al., 2014 [20]	Population-based cross-sectional study	Y	Y	Y	Y	Y	Y	Y	Y	8/8	Low	None identified
11	Sinha et al., 2013 [21]	Descriptive cross-sectional study	Y	Y	U	Y	U	U	Y	Y	5/8	Moderate	Exposure measurement and confounding procedures incompletely reported
12	Shidhaye & Patel, 2010 [22]	Population-based cross-sectional analysis	Y	Y	Y	Y	Y	Y	Y	Y	8/8	Low	None identified
13	Chandra et al., 2009 [23]	Cross-sectional study	Y	Y	Y	Y	Y	U	Y	Y	7/8	Low	Control of confounding incompletely reported

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14	Nayak et al., 2010 [24]	Population-based cross-sectional survey	Y	Y	Y	Y	Y	Y	Y	Y	8/8	Low	None identified
15	Kamimura et al., 2017 [25]	Cross-sectional service-based study	Y	Y	Y	Y	U	U	Y	Y	6/8	Moderate	Confounder identification and control incompletely reported
16	Madhavanprabhakaran, D'Souza & Nairy, 2015 [26]	Cross-sectional antenatal survey	Y	Y	Y	Y	Y	U	Y	Y	7/8	Low	Control of confounding incompletely reported
17	Indu et al., 2018 [27]	Cross-sectional study	Y	Y	Y	Y	U	U	Y	Y	6/8	Moderate	Confounder identification and control incompletely reported
18	Vijayalakshmi, 2016 [28]	Cross-sectional study	Y	Y	U	U	U	U	Y	Y	4/8	High	Measurement and confounding procedures insufficiently reported
19	Kumar et al., 2016 [29]	Hospital-based cross-sectional study	Y	Y	Y	Y	U	U	Y	Y	6/8	Moderate	Confounder identification and control incompletely reported
20	Shah et al., 2017 [30]	Controlled cross-sectional study	Y	Y	U	Y	U	U	Y	Y	5/8	Moderate	Exposure measurement and confounding procedures incompletely reported
21	Christian, Kathad, & Bhavsar, 2012 [31]	Cross-sectional study	Y	Y	U	Y	U	U	Y	Y	5/8	Moderate	Exposure measurement and confounding procedures incompletely reported
22	Singh, & Pradhan, 2014 [32]	Cross-sectional study	Y	Y	Y	Y	U	U	Y	Y	6/8	Moderate	Confounder identification and control incompletely reported
23	NMHS, 2016 [33]	National cross-sectional household survey	Y	Y	Y	Y	Y	Y	Y	Y	8/8	Low	None identified
24	Kamboj et al, 2023 [35]	Hospital-based cross-sectional study	Y	Y	Y	Y	Y	Y	Y	Y	8/8	Low	None identified
25	Chaudhari, Mazumdar, & Mehta, 2018 [36]	Hospital-based cross-sectional study	Y	Y	Y	Y	Y	U	Y	Y	7/8	Low	Control of confounding incompletely reported
26	Sathe et al., 2024 [37]	Community-based cross-sectional study	Y	Y	Y	Y	Y	Y	Y	Y	8/8	Low	None identified
27	Sharma et. al, 2022 [38]	Comparative cross-sectional study	Y	Y	Y	Y	U	U	Y	Y	6/8	Moderate	Confounder identification and control incompletely reported

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28	Dadhwal et al., 2022 [39]	Hospital-based cross-sectional study	Y	Y	Y	Y	Y	U	Y	Y	7/8	Low	Control of confounding incompletely reported
29	Prabhu et. al, 2022 [40]	Hospital-based cross-sectional study	Y	Y	Y	Y	Y	U	Y	Y	7/8	Low	Control of confounding incompletely reported
30	Dubey et. al., 2012 [41]	Hospital-based cross-sectional study	Y	Y	Y	Y	Y	U	Y	Y	7/8	Low	Control of confounding incompletely reported
31	Solanki & Kulkarni, 2017 [43]	Community-based cross-sectional survey	Y	Y	Y	Y	U	U	Y	Y	6/8	Moderate	Confounder identification and control incompletely reported
32	Dadhwal et al., 2023 [44]	Community-based cross-sectional study	Y	Y	Y	Y	Y	Y	Y	Y	8/8	Low	None identified
33	Sharma et al., 2019 [45]	Community-based cross-sectional mixed-method study	Y	Y	Y	Y	Y	Y	Y	Y	8/8	Low	None identified
34	Sheeba et al., 2019 [46]	Hospital-based cross-sectional study	Y	Y	Y	Y	Y	Y	Y	Y	8/8	Low	None identified
35	Hudge et al., 2022 [47]	Cross-sectional clinical study	Y	Y	Y	Y	Y	U	Y	Y	7/8	Low	Control of confounding incompletely reported
36	Basu et, al., 2024 [48]	Cross-sectional secondary analysis	Y	Y	Y	Y	Y	Y	Y	Y	8/8	Low	None identified
37	Beattie et al., 2019 [49]	Cross-sectional study	Y	Y	Y	Y	Y	Y	Y	Y	8/8	Low	None identified
38	Johnson et al., 2018 [50]	Cross-sectional screening study	Y	Y	Y	Y	Y	U	Y	Y	7/8	Low	Control of confounding incompletely reported
39	Meena et al., 2016 [52]	Comparative cross-sectional study	Y	Y	Y	Y	U	U	Y	Y	6/8	Moderate	Confounder identification and control incompletely reported
40	Nath et al., 2019 [53]	Hospital-based cross-sectional study	Y	Y	Y	Y	Y	Y	Y	Y	8/8	Low	None identified
41	Hulland et al., 2015 [54]	Cross-sectional systematic data-collection study	Y	Y	Y	Y	Y	U	Y	Y	7/8	Low	Control of confounding incompletely reported
42	Sinha et al., 2012 [56]	Community-based cross-sectional study	Y	Y	Y	Y	Y	U	Y	Y	7/8	Low	Control of confounding incompletely reported

Supplementary Table 2. Quality assessment of case-control and cohort studies using Newcastle Ottawa scale

NOS scoring: Selection, maximum 4 stars; comparability, maximum 2 stars; exposure (case-control) or outcome (cohort), maximum 3 stars. Total maximum 9 stars. Overall rating: low risk 7–9, moderate risk 5–6, high risk 0–4. The cohort form was used for prospective, quasi-experimental and retrospective longitudinal studies.

Sr. No.	Study	Design and NOS form	Selection /4	Comparability /2	Exposure or outcome /3	Total /9	Risk of bias	Appraisal note
1	Hussain et al., 2015 [10]	Case-control	★★★☆☆ (3/4)	★☆☆ (1/2)	★★★☆☆ (2/3)	6/9	Moderate	Cases were clinically defined; representativeness, comparability and non-response reporting limited.
2	Powell-Jackson et al., 2016 [18]	Quasi-experimental cohort	★★★☆☆ (3/4)	★★★ (2/2)	★★★★ (3/3)	8/9	Low	Strong adjusted comparison and outcome ascertainment; non-random programme exposure limits selection score.
3	Singh et al., 2023 [34]	Prospective cohort	★★★☆☆ (3/4)	★☆☆ (1/2)	★★★☆☆ (2/3)	6/9	Moderate	Hospital cohort with repeated assessment; comparability and follow-up completeness were limited.
4	Fatima et al., 2024 [42]	Prospective observational cohort	★★★☆☆ (2/4)	★☆☆ (1/2)	★★★☆☆ (2/3)	5/9	Moderate	Hospital sampling and limited reporting of adjustment and follow-up reduced certainty.
5	Iyengar et al., 2012 [51]	Prospective cohort	★★★★★ (4/4)	★★★ (2/2)	★★★★ (3/3)	9/9	Low	Representative recruitment, adjusted analyses and adequate first-year follow-up.
6	Banerjee et al., 2009 [55]	Retrospective record-based cohort	★★★☆☆ (3/4)	☆☆ (0/2)	★★★☆☆ (2/3)	5/9	Moderate	Clinical records supported case ascertainment, but there was no adjusted comparison group.