

# Supplement to: Systematic review and meta-analysis of maternal mortality ratio and related factors in the Islamic Republic of Iran

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**Supplementary Table S1 PRISMA checklist**

Section/topic	No.	Checklist item	Reported on page no.
<b>TITLE</b>			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
<b>ABSTRACT</b>			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	1
<b>INTRODUCTION</b>			
Rationale	3	Describe the rationale for the review in the context of what is already known.	2-3
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	3
<b>METHODS</b>			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	3
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	4
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	3
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	Supplement 2
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	4
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	4
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	4
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	4-5
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	4-5
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I <sup>2</sup> ) for each meta-analysis.	4-5

**Supplementary Table S2 Search strategy (adapted for different search engines)**

A: fatalit* OR mortalit* OR death
B: maternal OR pregnancy
C: iran OR iran* OR persia OR persian OR alborz OR karaj OR ardebil OR boushehr OR Chaharmahal OR bakhtiari OR shahrekord OR "east azarbaijan" OR tabriz OR esfahan OR fars OR shiraz OR gilán OR guilan OR rasht OR golestan OR gorgan OR hamadan OR hamedan OR hormozgan OR "bandar abbas" OR ilam OR kerman OR kermanshah OR ahvaz OR khuzestan OR yasuj OR Kohgiluyeh OR "Boyer-Ahmad" OR sanandaj OR kordestan OR kurdestan OR kurdistan OR khorramabad OR lorestan OR arak OR markazi OR sari OR mazandaran OR Babol OR "north khorasan" OR bojnourd OR bojnord OR bejnord OR qazvin OR qom OR "razavi khorasan" OR semnan OR sistán OR baluchestan OR zahedan OR "south khorasan" OR birjand OR tehran OR "west azarbaijan" OR urmia OR yazd OR zanzan OR fasa OR kashan OR jahrom OR Bam OR rafsanjan OR jiroft OR shahroud OR zabol OR iranshahr OR saveh OR gonabad OR maragheh OR "Torbat Heydarieh" OR dezfúl OR neyshabur
D: A AND B AND C

Supplementary Table S3 Characteristics of the studies included in the systematic review

Author, year	Year of study	Study location	Type of study	Source of data	Study duration	Age, years	Maternal mortality ratio	Related factors
Amimi-Rarani, 2021 <sup>1</sup>	2001–2016	Isfahan Province	Case-control	National Maternal Mortality Surveillance System	16 years	NR	NR	Predictors: maternal education (illiterate/primary school), maternal occupation (housewife), planned pregnancies, risky birth interval (<24 months), using public antenatal care, not have proximate medical causes, type of delivery (caesarean section)
Mirahmadzadeh, 2020 <sup>2</sup>	2002–2012	Fars Province	Trend analysis	Death registries in maternal mortality surveillance systems, vital records in rural areas, records of maternal deaths in hospitals and forensics	11 years	29.97 (6.71)	21.28	Predictors: type of delivery (caesarean section vs. vaginal: OR= 1.64), person who performed the delivery (obstetrician vs non-obstetrician: OR = 2.26), pregnancy care appropriate for gestational age (appropriate $\geq$ 6 times vs inappropriate < 6 times: OR = 0.58), type of pregnancy (untended vs intended: OR = 0.426), place of residence (rural vs urban: OR = 2.48)
Hashemi, 2020 <sup>3</sup>	2016	Ahvaz City	Descriptive study	Medical records and interview with healthcare providers	2 months	28.37 (7.03)	0	NR
Mirahmadzadeh, 2020 <sup>4</sup>	2014	Fars Province	Case series	Death registration system, Maternal Mortality Surveillance System, verbal autopsy	1 year	NR	10	Causes of death: haemorrhage (10%), eclampsia/pre-eclampsia (20%), amniotic fluid embolism (10%), infection and disseminated intravascular coagulation (20%), suicide (10%), ectopic pregnancy (10%), thrombotic thrombocytopenic purpura (10%), unknown (10%)
Javaheri, 2020 <sup>5</sup>	2002–2016	Hamadan Province	Descriptive study	Maternal surveillance system data	15 years	NR	2002: 35 2016: 14	Common causes of death: hemorrhage, pre-eclampsia, heart disease, infection, embolism
Banaei, 2020 <sup>6</sup>	2011–2017	Hormozgan Province	Cross-sectional	All records from hospital and health centers, verbal autopsy	7 years	Majority 35–18 (73%)	32.76	Causes of death: haemorrhage (24%), infection (6%), eclampsia (16%), embolism (11%), underlying condition (9%), heart disease (5%), others (26%)
Nostratabadi, 2019 <sup>7</sup>	2001–2016	Isfahan Province	Case-control	Maternal surveillance system's data	16 years	NR	NR	Predictors: maternal education (illiterate/primary school vs university: OR = 1.84), migration status (immigrant vs nonimmigrant: OR = 5.87), using public antenatal care (OR = 0.42), having proximate medical cause (OR = 4.41), type of delivery (vaginal vs caesarean section: OR = 2.28)
Ahmadi, 2019 <sup>8</sup>	2010–2014	National	Capture-recapture method	Maternal surveillance system, National Organization for Civil Registration, National Death Registration System	5 years	NR	25.28	NR

Supplementary Table S3 Characteristics of the studies included in the systematic review (continued)

Author, year	Year of study	Study location	Type of study	Source of data	Study duration	Age, years	Maternal mortality ratio	Related factors
Mosadeghrad, 2019 <sup>9</sup>	2005–2016	National	Case-control	Iran Statistics Center, World Health Organization, United Nations Development Program	12 years	NR	27.9	Predictors: HDI: adjusted B = ?0.973
Barzegar, 2019 <sup>10</sup>	2017–2019	Tehran City	Descriptive study	Legal Medicine Organization, verbal autopsy	3 years	NR	NR	Direct causes of death: haemorrhage (22.6%), eclampsia/pre-eclampsia (13.2%), ectopic pregnancy (5.7%) Indirect causes of death: cardiac diseases (20.7%), nervous system diseases (7.5%), infectious diseases (7.5%) Common causes of death: haemorrhage: B = ?0.28 hypertension: B = ?0.17 abortion and ectopic pregnancies: B = ?0.15 delays: B = ?0.02 infections: B = ?0.16 obstructed labour and uterine rupture: B = ?0.13 indirect causes: B = ?0.26
Tajvar, 2019 <sup>11</sup>	1990–2016	National	Cross-sectional	Global Burden of Disease website	27 years	NR	1990: 40 1996: 45 2016: 14	
Farzollahpour, 2019 <sup>12</sup>	2001–2011	Ardabil Province	Cross-sectional	Maternal surveillance system	11 years	Majority (72%) 18–35	20	Predictors: pre-pregnancy care: OR = 3.2, interval between pregnancies: OR = 2.2, underlying disease: OR = 2.5, infant status: OR = 0.77 Common causes of death: haemorrhage (28%), pre-eclampsia/ eclampsia (16%), thromboembolic disorders (16%), infection (8%), brain haemorrhage (4%), seizure (4%)
Rahimi, 2019 <sup>13</sup>	2006–2016	Ardabil Province	Cross-sectional	Maternal surveillance system	11 years	30 (8.1)	18.7	Predictors: Type of delivery (caesarean section vs vaginal), parity (first and second pregnancy), risk factors during pregnancy Common causes of death: haemorrhage (37.9%), pre-eclampsia (24.1%), infection (10.3%), embolism (10.3%), underlying disease (13.8%)
Damady, 2019 <sup>14</sup>	2012–2016	Kerman Province	Cross-sectional	Documentation of health centres	5 years	31.5 (6.3)	15.1	Predictors: age (20–30 years), place of residence (urban area), maternal education (illiterate), maternal occupation (housewife), number of pregnancies (1 and > 4), interval between pregnancies (> 1 year), type of delivery (caesarean section), place of delivery (hospital), underlying disease, using public antenatal care, unintended pregnancy Causes of death: haemorrhage (56.7%), heart disease and influenza (43.3%)

Supplementary Table S3 Characteristics of the studies included in the systematic review (continued)

Author, year	Year of study	Study location	Type of study	Source of data	Study duration	Age, years	Maternal mortality ratio	Related factors
Emami, 2018 <sup>15</sup>	2009–2013	Rasht City	Cross-sectional	NR	5 years	18.79 (1.27) < 20	0	NR
Gholampoor, 2018 <sup>16</sup>	2009–2013	National	Cross-sectional	Maternal surveillance system, Statistics and Information Technology Centre of Ministry of Health	5 years	NR	9.8	Predictors: fertility rate: B = 0.00004 income: B = ?0.000157
Talebi, 2018 <sup>17</sup>	2010–2014	Khorasan Razavi Province	Cross-sectional	Reports of Maternal Mortality Committee of Mashhad University of Medical Sciences	5 years	Majority (71.3%) 19–34	17.68	Predictors: type of delivery (caesarean section vs vaginal): RR = 1.3 Causes of death: haemorrhage (24.5%), hypertensive disorders, severe pre-eclampsia, HELLP, and eclampsia (11.7%), amniotic fluid embolism (6.4%), fatty liver of pregnancy (6.4%), cardiovascular disease (12.8%), central nervous system disorders (9.6%), others (13.8%)
Farzianpour, 2017 <sup>18</sup>	2011–2015	Tehran Province	Cross-sectional	Prenatal care records, hospital admission files, verbal reports, pathological autopsies	5 years	Majority (70.6%) 27–35	15.8	Common causes of death: wrong treatment (70.6%), delays in treatment (55.1%), pre-eclampsia/eclampsia (23.6%)
Samani, 2017 <sup>19</sup>	2008–2013	Tehran Province	Descriptive study	Legal Medicine Organization	6 years	30.3 (5.76)	NR	Common causes of death: heart disease (20.6%), obstetric complications (13.3%), respiratory disorders (14.5%), neurological disorders (11.5%), pregnancy-related hypertension (11.5%)
Rahimian, 2017 <sup>20</sup>	2006–2012	Golestan Province	Cross-sectional	NR	7 years	NR	NR	Predictors: ethnic groups
Changizi, 2017 <sup>21</sup>	2009–2012	National	Descriptive study	National Maternal Mortality Surveillance System	4 years	Majority (73.3%) 18–34	NR	Common causes of death: factors related to health systems (80%), factors outside the organization (10.4%), patient/family factors (9.6%)
Zarei, 2017 <sup>22</sup>	1988–2014	National	Descriptive study	World report from UN on maternal mortality trends, World Bank database, WHO, UNICEF reports, Maternal Mortality Surveillance System, Demographic and Health Surveys 2000 and 2010, yearbooks of National Organization for Civil Registration, Statistical Center of Iran	27 years	NR	1988: 91 2014: 19	Common causes of death: caesarean section (60.9%), haemorrhage (24%), delay (60%), pre-eclampsia (10.1%), cardiovascular (8.2%), hypertensive disorders (2.6%)

Supplementary Table S3 Characteristics of the studies included in the systematic review (continued)

Author, year	Year of study	Study location	Type of study	Source of data	Study duration	Age, years	Maternal mortality ratio	Related factors
Shahidi, 2017 <sup>23</sup>	2003–2013	Sabzevar	Cross-sectional	Committee of Maternal Mortality	11 years	31.1 (5.9)	NR	Predictors: place of residence (urban area) Common causes of death: haemorrhage (30%), hypertension (15%), infection (5%), underlying disease (30%)
Jabbari, 2017 <sup>24</sup>	2007–2012	West Azerbaijan Province	Descriptive study	Health Vice Chancellor of West Azerbaijan database	6 years	Majority (75%) 18–35	22.38	Common causes of death: haemorrhage (26.8%), eclampsia (17.1%), thromboembolism (12.2%), anaesthesia and surgery complications (6.1%)
Karimzadei, 2016 <sup>25</sup>	2009–2013	Iranshahr County	Descriptive study	Hospital records, health records	5 years	30 (6.4)	NR	Common causes of death: haemorrhage (38.2%), eclampsia/pre-eclampsia (26.5%), underlying disease (26.5%)
Karimi-Zarchi, 2016 <sup>26</sup>	2002–2011	Yazd Province	Cross-sectional	NI	10 years	29.17 (5.6)	20.94	Common causes of death: haemorrhage (6.4%), amniotic fluid embolism (2.1%), eclampsia/pre-eclampsia (1.6%), heart disease (4.2%), malignancy (2.6%), pulmonary diseases (2.1%)
Vahiddastjerdy, 2016 <sup>27</sup>	2009–2012	National	Descriptive study	National Maternal Mortality Surveillance System	3 years	29.84 (6.64)	18.5	Common causes of death: haemorrhage (24.2), pre-eclampsia (7.7%), eclampsia (5.9%), cardiovascular disease (10.0%), thromboembolism (4.0%), after delivery sepsis (3.5%), amniotic fluid emboli (3.2%), chronic hypertension (1.8%)
Mohammadi, 2016 <sup>28</sup>	2012–2014	University hospitals affiliated with Shahid Beheshti University of Medical Sciences, Tehran	Case-control	Medical records	26 months	Majority (71%) 20–34	92.56	Predictors: Uninsured Iranian vs insured Iranian (OR = 3.4), uninsured Afghan vs insured Iranian (OR = 4.7), mode of delivery (antepartum caesarean section vs vaginal birth, OR = 1.8)
Jamshidi, 2016 <sup>29</sup>	2009–2013	Khuzestan province	Descriptive study	Maternal Mortality Registration System	4 years	29.88 (6.46)	NR	Common causes of death: haemorrhage (31.4%), HELLP syndrome (4.3%), infection after delivery (4.3%), heart disease (11.4%), adult respiratory distress syndrome (4.2%)
Safizadeh, 2015 <sup>30</sup>	2010–2012	Population Covered by Kerman University of Medical Sciences	Cross-sectional	Hospital records, health records, verbal autopsy	3 years	28.25 (7.03)	23.57	Common causes of death: haemorrhage (17.7%), pre-eclampsia/eclampsia (35.3%), infection (23.5%), embolism (23.5%), Cardiovascular disease (50%)

Supplementary Table S3 Characteristics of the studies included in the systematic review (continued)

Author, year	Year of study	Study location	Type of study	Source of data	Study duration	Age, years	Maternal mortality ratio	Related factors
Kamiabi, 2015 <sup>31</sup>	2007–2012	National	Ecologic study	Registered deaths in Iranian Ministry of Health and Medical Education, National Organization for Civil Registration	6 years	NR	22.3	Predictors: net attendance of girls in secondary schools (B = ?0.279), literacy (male vs female, B = ?0.930), access to improved water and sanitation (B = ?0.861), antenatal and delivery care (> 6, B = ?0.812), births in the house assisted by unskilled health personnel (B = 1.147)
Tirkesh, 2015 <sup>32</sup>	2007–2011	Dezful, Shush, Gotvand	Cross-sectional	Maternal Surveillance System, Vice Chancellor for Health, Dezful University of Medical Sciences	5 years	28.2 (6.7)	34.9	Causes of death: previous medical diseases (40.9%), haemorrhage (32.8%), embolism (9.1%), pre-eclampsia (4.5%), unknown (13%)
Zokaei, 2015 <sup>33</sup>	2001–2014	Kurdistan Province	Cross-sectional	Maternal Surveillance System, maternal deaths in hospitals, verbal autopsy, forensic autopsy	12 years	35.1 (6.4)	NR	Causes of death: haemorrhage (34.2%), eclampsia (22.8%), cardiovascular disease (7.6%), embolism (22.8%), respiratory disorder (3.8%), infection (2.5%), unknown (10%)
Moradi, 2015 <sup>34</sup>	2007–2011	Hormozgan Province	Cross-sectional	Prenatal care files, hospital records, Maternal surveillance system, autopsy report	5 years	Majority (76.1%) 18–35	39.81	Causes of death: haemorrhage (25.37%), embolism (14.92%), eclampsia/pre-eclampsia (10.44%), heart disease (7.46%), unknown (7.46%), infection (2.98%), other (31.34%)
Jamshidpour, 2015 <sup>35</sup>	2001–2013	Kermanshah Province	Cross-sectional	Family health unit records, provincial health centre	13 years	31.3 (7.3)	25.9	Predictors: literacy Causes of death: placental abruption and haemorrhage (28.3%), complications of obstetric interventions (20.2%), indirect cause (17.2%), pre-eclampsia (14.2%), infectious disease (9.1%), placental disorders (3%), unknown (3%)
Farziampour, 2015 <sup>36</sup>	2008–2011	Tehran Province	Case-control	Records of family health department in medical sciences universities of Tehran	4 years	Majority (71.6%) 18–34	15.85	Predictors: pregnancy age (OR = 3.361), spouse education (illiterate, OR = 3.818), infection with underlying disease (yes vs no, OR = 5.032), delivery type (vaginal vs caesarean section (OR = 0.327)
Haseli, 2015 <sup>37</sup>	2002–2010	Ilam Province	Cross-sectional	Healthcare records in hospital and health centres, Medical Council of Iran, verbal autopsy	9 years	31.14 (5.99)	25.51	Predictors: maternal education level, maternal age, requiring to special care, time of death, type of delivery Causes of death: haemorrhage (22.7%), infectious abortion (9.1%), embolism (18.2%), liver disease (13.6%), heart disease (18.2%), others (18.2%)

Supplementary Table S3 Characteristics of the studies included in the systematic review (continued)

Author, year	Year of study	Study location	Type of study	Source of data	Study duration	Age, years	Maternal mortality ratio	Related factors
Yazdizadeh, 2014 <sup>38</sup>	2004–2005	National	Capture-recapture	Maternal Mortality Surveillance System, National Death Registry	2 years	NR	2004: best case scenario:33 2004: worst-case scenario : 86 2005: best case scenario: 25 2005:worst-case scenario:59	NR
Rajaei, 2014 <sup>39</sup>	2005–2012	Hormozgan Province	Cross-sectional	Documents of the University Vice Chancellor for Health, verbal autopsy	7 years	30 (6.4)	39.7	Predictors: delivery type (vaginal delivery), number of pregnancy, risk factors during pregnancy Causes of death: haemorrhage (34.1%), infection (16.5%), pre-eclampsia (14.3%), embolism (11%), underlying condition (7.7%), others (16.5%)
Poorolajal, 2014 <sup>40</sup>	2006–2014	Hamadan Province	Nested case-control study	Primary healthcare records in the rural or urban health centres	8 years	30.19 (6.03)	NR	Predictors: maternal age at delivery (< 34 vs ≥ 35 years, OR = 8.48), body mass index (overweight/obese vs normal weight, OR = 10.99), underlying disease (yes vs no, OR = 17.55)
Sarani, 2014 <sup>41</sup>	2002–2014	Sistan area	Cross-sectional	Healthcare records in hospital and health centers	12 years	33.5 (2.5)	94.22	Causes of death: haemorrhage (19.2%), embolism (14%), accident (8.8%), hypertension (7%), burn (7%), others (44%)
Mobasheri, 2014 <sup>42</sup>	2002–2012	Chaharmahal va Bakhtiari Province	Cross-sectional	All records from hospital and health centres	10 years	31.1 (5.9)	17.2	Causes of death: heart disease (32.1%), embolism (17.9%), thrombotic thrombocytopenic purpura (14.3%), eclampsia (10.7%), others (25.1%)
Heidari, 2014 <sup>43</sup>	2006–2011	Kerman Province	Cross-sectional	Maternal surveillance system	6 years	Majority (62%) < 35	31.4	Predictors: birth attendant (skilled midwife vs physician, IRR = 1.49), birth attendant (unskilled midwife vs physician, IRR = 1.93), delivery type (vaginal vs caesarean section, IRR = 1.41)
Amiresmaili, 2013 <sup>44</sup>	2004–2010	Kerman Province	Cross-sectional	Statistical Unit of Health Deputy of Kerman University of Medical Sciences	7 years	NR	NR	NR

Supplementary Table S3 Characteristics of the studies included in the systematic review (continued)

Author, year	Year of study	Study location	Type of study	Source of data	Study duration	Age, years	Maternal mortality ratio	Related factors
Mohammadinia, 2013 <sup>45</sup>	2002–2010	Sistan and Baluchistan Provinces	Cross-sectional	Records in hospital and Health centres	9 years	28 (7.3)	82.6	Predictors: place of death, number of pregnancies, birth attendant, type of delivery, maternal age Causes of death: haemorrhage (39.5%), infection (11.1%), eclampsia/pre-eclampsia (23.4%), underlying disease (14%), others (12%)
Abdolahpour, 2012 <sup>46</sup>	2001–2011	Ilam Province	Cross-sectional	Maternal Mortality Surveillance System	10 years	NR	28.8	Predictors: quality of care during pregnancy (B = ?2.380), underlying disease (B = 3.035), high-risk pregnancy (B = 1.578)
Zolala, 2012 <sup>47</sup>	2001–2008	National	Ecological study	Census returns, Family Unit at the Ministry of Health, Medical Council of Iran	8 years	NR	25.8	Predictors: literacy (female vs male, B = ?82.77), unemployment (B = 0.90)
Tajik, 2012 <sup>48</sup>	2004–2006	National	Ecologic study	Maternal Mortality Surveillance System, Iran's Statistics Center, Budget and Planning Organization	3 years	NR	24.7	Predictors: HDI (B = ?247.6), difference in illiteracy rate in women and men (B = ?2.1)
Maharlouei, 2012 <sup>49</sup>	2003–2010	Fars Province	Cross-sectional	Maternal Mortality Committee, Perinatal care records, Hospital admission records, verbal reports, pathological autopsy	8 years	Majority (60%) 19–34	22.18	Causes of death: haemorrhage (35.6%), postpartum sepsis (14.9%), eclampsia (10.9%), pulmonary embolism (6.9%)
Moradan, 2012 <sup>50</sup>	2000–2010	University Hospital, Semnan City	Cross-sectional	Medical records in hospital	10 years	NR	53.3	Predictors: age, prior caesarean section, caesarean section, multiparity
Esmailnasab, 2011 <sup>51</sup>	2002–2007	Kurdistan province	Cross-sectional	National Surveillance System documents	6 years	Majority (39.2%) 24–29	NR	Predictors: poor prenatal care, low maternal education, health service shortages in rural areas
Gholami, 2008 <sup>52</sup>	1997–2007	Kohgiluyeh and Boyer-Ahmad	Cross-sectional	Health system data, Maternal Health Department of Iran Health Ministry	10 years	29.3 (0.8)	57.7	Predictors: gravidity > 4, residence in rural and remote area, poor prenatal care, long distance to emergency obstetrician facilities, maternal illiteracy Causes of death: haemorrhage (40.9%), infection (13.6%), eclampsia/pre-eclampsia (16%), embolism (10.6%), heart disease (7.6%), others (19.7%)



Supplementary Table S3 Characteristics of the studies included in the systematic review (concluded)

Author, year	Year of study	Study location	Type of study	Source of data	Study duration	Age, years	Maternal mortality ratio	Related factors
Shahraki, 2007 <sup>53</sup>	2001–2006	Isfahan Province	Cross-sectional	Hospital medical records, health system reports	6 years	Majority (80.3%) 18–35	NR	Causes of death: pre-eclampsia (10.6%), genitourinary disease (13.6%), heart disease (6%), diabetes (4.5%), epilepsy (4.5%), pulmonary disorders (6%), haematological disorders (4.5%), others (19.7%)
Farrok-Eslamlou, 2006 <sup>54</sup>	2001–2005	West Azerbaijan Province	Cross-sectional	Records of hospitals and health centres, death registration system	5 years	31.4 (7.0)	42.4	Predictors: maternal age, literacy level, number of pregnancies ( $\geq 5$ vs 2, relative risk = 2.1), maternal and obstetric care Causes of death: haemorrhage, pre-eclampsia, complications of abortion, infection, embolism
Akhalghi, 2003 <sup>55</sup>	1991–2000	Emamreza Hospital, Mashhad	Cross-sectional	Hospital mortality documentation	10 years	Majority (25.8%) 35–39	88.0	Causes of death: haemorrhage (58%), infection (6.5%), eclampsia (25.8%), amniotic fluid embolism (9.7%)
Borazjani, 1978 <sup>56</sup>	1970–1976	Fars Province	Cross-sectional	Pahlavi University Teaching Hospitals, autopsy	7 years	NR	248.7	Causes of death: infection (26%), haemorrhage (11.5%), pulmonary embolism (8.3%), toxemia (6.3%), choriocarcinoma (5.2%), others (39.6%)
Daneshbod, 1970 <sup>57</sup>	1963–1969	Fars Province	Cross-sectional	Saadi Hospital of Pahlavi University	7 years	NR	NR	Causes of death: infection (24%), haemorrhage (10.4%), eclampsia (4.2%), liver disease (16.8), heart disease (4.2%), peritonitis (4.2%), others (36.2%)

B = regression coefficient; HDI = Human Development Index; HELLIP = haemolysis, elevated liver enzymes and low platelets; IRR = incidence risk ratio; NR = not reported; OR = odds ratio.

## References for Supplementary Table S3

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