Experiences and views regarding secondhand smoke exposure prevention in Middle Eastern countries from the perspectives of women, children and professionals: a qualitative systematic review protocol

Objective: This systematic review aims to identify and explore the experiences and views regarding secondhand smoke (SHS) exposure among women and children in the home, workplace, school, personal vehicles, and public places from the perspectives of (i) women, (ii) children and (iii) professionals in Middle Eastern countries.

Introduction: Exposure to SHS is a significant public health problem globally, particularly Middle Eastern countries. Whilst many Middle Eastern countries have implemented tobacco control programs and have legislation that bans smoking in public places, the legislation is not always comprehensively implemented or enforced. Therefore, women and children continue to be exposed to SHS in public and private settings.

Inclusion criteria: This review will consider studies that include the views and experiences of any of the following three groups: (i) women (including pregnant women and mothers), (ii) children (primary and secondary school age), and (iii) professionals (including health professionals and policy makers), regarding the prevention of SHS exposure in women and children in Middle Eastern countries.

Methods: Six databases (MEDLINE, Embase, CINAHL, PsycINFO, Web of Science and Scopus) and three sources of grey literature will be searched for eligible studies. Databases will be searched from their inception dates and no language restrictions will be applied. Two reviewers will independently screen studies, extract data and assess methodological quality of included studies, following JBI systematic review guidelines. The JBI process of meta-aggregation will be used to identify categories and synthesize findings. The ConQual approach will be used to assess confidence in the findings.

Systematic review registration number: PROSPERO CRD42019137006

Keywords: Children; Middle East; Pregnancy; Secondhand smoke; Women

Abstract word count: 247

Total manuscript word count: 2240

29 # Introduction

30 Secondhand smoke (SHS) exposure, also known as environmental tobacco smoke exposure
31 and passive smoking, is the involuntary inhalation of other people's tobacco smoke by non-
32 smokers.[1] SHS consists of mainstream smoke (exhaled by a smoker) and side-stream smoke
33 (emitted from the burning end of a cigarette or Shisha tobacco holder between inhalations).
34 SHS contains over 4,000 chemicals, with more than 70 known to be carcinogenic.[2]

35 The latest report of the US Surgeon General, published in 2014,[3] stated there was sufficient
36 evidence to support causal relationships between SHS and increased risks of stroke,
37 coronary heart diseases and lung cancer among non-smoking adults. The report also stated
38 there was sufficient evidence to support causal relationships between SHS and increased
39 risks of sudden infant death syndrome (SIDS), low infant birth weight, lower respiratory tract
40 infection, asthma and wheezing, and middle ear infections among children.[3] Furthermore, in
41 2010, the Royal College of Physicians reported that SHS exposure increases the risks of
42 invasive meningococcal disease, poor mental health outcomes, and smoking uptake in
43 children.[1]

44 In women of reproductive age (15-49 years) in Middle Eastern countries, the prevalence of
45 active smoking is low (for example, 0.4% in Egypt and 18% in Turkey), in comparison to
46 exposure to SHS (65% in Egypt and 61% in Turkey),[4] and active smoking in men (37.6 % in
47 Egypt and 47.9 % in Turkey).[5] There is evidence of high SHS exposure among women and
48 children both inside and outside of the home. For example, a population-based study using
49 data from the Demographic and Health Survey from Middle Eastern countries in 2019
50 reported that around 50% of pregnant non-smoking women were exposed daily to SHS.[6]
51 Furthermore, another survey reported high level of SHS exposure among children outside
52 home in Middle Eastern countries (63% Egypt, 67% Syria and 55% Turkey).[7]

53 There is no safe level of exposure to SHS,[3] therefore the promotion of smoking cessation and
54 the prevention of smoking uptake among men, women and children are crucial to assist in
55 reducing exposure of SHS to women and children.[4] Whilst many Middle Eastern countries
56 have implemented tobacco control programs and have legislation that bans smoking in public
57 places, the legislation in many countries is not comprehensively implemented or
58 enforced, and does not include banning smoking in personal vehicles in which children are
59 present.[8,9] Thus, the prevalence of SHS exposure among women and children both inside
60 and outside home remains high, for instance, in Egypt SHS exposure in public places is
61 above 70% among adults and 63% among children in spite of banning smoking in public
62 places. Moreover 71% of Egyptian adults and 35% of Egyptian children are exposed to SHS
63 in the home.[10]

64 Homes are major source of SHS exposure among non-smoking women and children.[11]
65 Supporting smoke-free homes (SFHs) is an effective strategy to protect children and adults
66 from exposure to SHS. A SFH can improve the air quality of the home environment, and can
67 increase quit attempts in parents who smoke.[11]

68 Two previous qualitative systematic reviews have investigated the barriers and motivators to
69 establishing SFHs in developed countries.[12,13] The authors reported the following as barriers
70 to adopting SFHs: (a) presence of many family member smokers living in the same home,
71 especially if they perceived benefits of smoking; (b) lack of confidence among women to ask
72 family members or guests not to smoke in home; (c) women felt powerless to modify their
73 environment; (d) social norms and gender imbalances contributing to a lack of personal
74 agency of women; (e) cultural considerations when socializing and sharing cigarettes; and (f)
75 fear among women of damaging a relationship with family members and guests as a result of
76 adopting a SFH, especially where there were socio-economic issues, such as unemployment
77 and overcrowding.[12,13] The authors also identified the following themes as motivators of
78 adopting SFHs: (a) success stories and positive role model of an elder who had quit smoking;
79 (b) presence of a newborn baby or an elder in the home; (c) wider community norms of SFHs
80 as individuals influence each other to adopt SFH and avoid stigma; (d) sense of guilt; and (e)
81 perceived benefits of having SFHs. Individuals who were aware of the dangers of SHS
82 exposure were motivated to adopt SFHs.[12,13]

83 The above findings cannot be directly translated to developing countries due to cultural and
84 socioeconomic differences between developed and developing countries; the perceived
85 barriers and facilitators for preventing SHS exposure among women and children in home or
86 public places may be different in Middle Eastern countries compared with developed
87 countries.[14,15] Middle Eastern countries generally have conservative cultures, specific social
88 norms and male dominated societies. Moreover, as mentioned above, SHS exposure among
89 non-smoking women and children in these countries is high.[4,6,7] Several qualitative studies
90 and cross-sectional surveys have been conducted in Middle Eastern countries regarding SHS
91 exposure among women and children,[14–19] however, to date this evidence has not been
92 synthesized. For instance, two studies from Turkey and Jordan identified social and cultural
93 norms and traditions as barriers to preventing SHS exposure among children at home[14] and
94 non-smoking women in the work place.[15] A study from Iran found the barriers to pregnant
95 women protecting themselves from SHS were that they didn’t understand the risks of SHS on
96 the fetus and being unaware of how to protect themselves against SHS.[16] There is conflicting
97 evidence regarding level of awareness of the hazards of SHS exposure in Middle Eastern
98 countries: although there have been studies that reported that women were aware of the
99 danger of SHS in Saudi Arabia, Iran, and Jordan,[15,17,19] studies carried out in Iran, Kuwait and
100 Egypt suggested that lack of knowledge was one of the barriers of preventing SHS exposure
101 among women and children.[16,20,21] Interestingly, even in studies reporting a good level of

102 knowledge about health hazards of SHS, women's behavior related to avoidance of SHS
103 exposure was minimal[15] with no restrictions on indoor home smoking of residents and guests
104 in spite of the presence of children.[18,19]

105 A preliminary search of PROSPERO, MEDLINE, the Cochrane Database of Systematic
106 Review and the JBI Evidence Synthesis journal was conducted and no current or underway
107 systematic reviews on the topic were identified. Therefore, the objective of this review is to
108 identify and explore the experiences and views regarding prevention of SHS exposure among
109 women and children in the home, workplace, personal vehicles, and public places from the
110 perspective of (i) women, (ii) children, and (iii) professionals in Middle Eastern countries.

111 Review question

112 This question of this review is: what are the views on, and experiences of, prevention of SHS
113 exposure in women and children in the home, workplace, school, personal vehicles, and
114 public places from the perspectives of (i) women, (ii) children, (iii) professionals in Middle
115 Eastern countries?

116 Inclusion criteria

117 Types of Participants

118 This review will consider studies that include the views and experiences of any of the
119 following three groups: (i) women (any women, including pregnant women and mothers); (ii)
120 children (primary and secondary school aged children); and (iii) professionals (including
121 health professionals and policy makers).

122 Phenomena of interest

123 The review will consider studies that explore the views, experiences, attitudes,
124 understandings, and perspectives regarding the prevention of SHS exposure in women and
125 children in the home, workplace, school, personal vehicles and public places.

126 Context

127 This review will consider studies of any study settings in any of the 17 Middle Eastern
128 countries: Turkey, Iran, Bahrain, Cyprus, Egypt, Iraq, Jordan, Kuwait, Lebanon, Oman,
129 Palestine, Qatar, Saudi Arabia, Syria, Israel, United Arab Emirates and Yemen.[22]

130 Types of studies

131 This review will consider studies that focus on qualitative data, including, but not limited to,
132 designs such a phenomenology, grounded theory, ethnography, qualitative descriptive and
133 feminist research. Mixed-methods papers will be included only where the qualitative results
134 are reported separately. If there is a paucity of rich qualitative data, the review may be

135 supplemented with free text from cross-sectional surveys however; quantitative finding from
136 these studies will not be included. Studies published in any language will be included. Studies
137 published from database inception dates to the present will be included.

138 Methods

139 The proposed systematic review will be conducted in accordance with the Joanna Briggs
140 Institute methodology for systematic reviews of qualitative evidence.[23] The review protocol is
141 registered on the International Prospective Register of Systematic Reviews (PROSPERO)
142 Database (registration number CRD42019137006). The protocol was guided by the JBI
143 Evidence Synthesis journal Reporting Guide for systematic reviews Protocols.[24]

144 Search strategy

145 The search strategy will aim to locate both published and unpublished studies. An initial
146 limited search of MEDLINE and Embase was undertaken to identify articles on the topic using
147 the initial keywords: ‘‘secondhand smoke’’, ‘‘women’’, ‘‘children’’ and ‘‘Middle East’’. The text
148 words contained in the titles and abstracts of relevant articles, and the index terms used to
149 describe the articles were used to develop a full search strategy for MEDLINE (see appendix
150 I). The search strategy, including all identified keywords and index terms, will be adapted for
151 each included information source. The reference list of all studies selected for inclusion will be
152 screened for additional studies.

153 Information sources

154 The six databases to be searched include: MEDLINE (via Ovid), Embase (via Ovid), CINAHL
155 (via Ovid), PsycINFO, Web of Science and Scopus. These academic databases are
156 considered sufficiently comprehensive to cover the range of topics and disciplines covered in
157 this review. Sources of unpublished studies and grey literature to be searched include EthOS,
158 OpenGrey, ProQuest Dissertations & Theses, relevant websites and conference proceedings.

159 Study selection

160 Following the search, all identified citations will be collated and uploaded into Endnote
161 (Clarivate Analytics, PA, USA) reference management software [25] and duplicates removed.
162 Titles and abstracts will then be screened by two independent reviewers for assessment
163 against the inclusion criteria for the review. Potentially relevant studies will be retrieved in full
164 and their citation details imported into the Joanna Briggs Institute System for the Unified
165 Management, Assessment and Review of Information (JBI SUMARI) 2019 (Joanna Briggs
166 Institute, Adelaide, Australia).[26] The full text of selected citations will be assessed in detail
167 against the inclusion criteria by two independent reviewers. Reasons for exclusion of full text
168 studies that do not meet the inclusion criteria will be recorded and reported in the systematic

169 review. Any disagreements that arise between the two reviewers at each stage of the study
170 selection process will be resolved through discussion, or with a third reviewer. The results of
171 the search will be reported in full in the final systematic review and presented in a Preferred
172 Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) flow diagram.[27]

173 **Assessment of methodological quality**

174 Eligible studies will be critically appraised for methodological quality by two independent
175 reviewers using the standard Joanna Briggs Institute Clinical Appraisal Checklist for
176 Qualitative Research.[28] Authors of papers will be contacted to request missing or additional
177 data for clarification, where required. Any disagreements that arise between the reviewers will
178 be resolved through discussion, or with a third reviewer. The results of critical appraisal will be
179 reported in narrative form and in a table. All studies, regardless of their methodological
180 quality, will undergo data extraction and synthesis (where possible).

181 **Data extraction**

182 Data will be extracted from studies included in the review by two independent reviewers using
183 the standardized Joanna Briggs Institute data extraction tool. [23] The data extracted will
184 include specific details about the population, context, culture, geographical location, study
185 methods and the phenomena of interest relevant to the review objective. Findings, and their
186 illustrations, will be extracted and assigned a level of credibility. Any disagreements that arise
187 between the reviewers will be resolved through discussion, or with a third reviewer. Authors of
188 papers will be contacted to request missing or additional data, where required.

189 **Data synthesis**

190 Qualitative research findings will, where possible, be pooled using JBI SUMARI with the
191 meta-aggregation approach.[29] This will involve the aggregation or synthesis of findings to
192 generate a set of statements that represent that aggregation, through assembling the findings
193 and categorizing these findings on the basis of similarity in meaning. These categories will
194 then be subjected to a synthesis in order to produce a single comprehensive set of
195 synthesized findings that can be used as a basis for evidence-based practice. Where textual
196 pooling is not possible the findings will be presented in narrative form. We will synthesize all
197 the studies together, irrespective of which group the views and experiences are derived from
198 (women, children and professionals), but will report any group-specific differences.

199 **Assessing certainty in the findings**

200 The final synthesized findings will be graded according to the ConQual approach for
201 establishing confidence in the output of qualitative research synthesis and presented in a
202 Summary of Findings table.[30] The Summary of Findings includes the major elements of the

203 review and details how the ConQual score is developed. Included in the Summary of Findings
204 will be the title, population, phenomena of interest and context for the specific review. Each
205 synthesized finding from the review will then be presented along with the type of research
206 informing it, score for dependability and credibility, and the overall ConQual score.
207

208 **Acknowledgments**

209 The authors thank Elizabeth Doney, a senior research librarian at the University of
210 Nottingham (UK), for her contribution to the search strategy.
211

212 **Funding**

213 ZH is a PhD student, funded by the Ministry of Higher Education in Egypt. This systematic
214 review is a part of her PhD project.

215 **Conflicts of interest**

216 Jo Leonardi-Bee is a Senior Associate Editor of the JBI Evidence Synthesis journal and was
217 not involved in the management or decision-making processes associated with the
218 manuscript. The other authors have no conflicts of interest to declare.
219

220 ## References

221 1. Royal College of Physicians. Passive smoking and children. A report by the Tobacco
222 Advisory Group. London: RCP; 2010.

223 2. Schramm S, Carré V, Scheffler J-L, Aubriet F. Analysis of mainstream and sidestream
224 cigarette smoke particulate matter by laser desorption mass spectrometry. Anal Chem.
225 2010;83(1):133–42.

226 3. US Surgeon General. The health consequences of smoking—50 years of progress: a
227 report of the surgeon general. In: US Department of Health and Human Services.
228 Citeseer; 2014.

229 4. Centers for Disease Control and Prevention. Current tobacco use and secondhand
230 smoke exposure among women of reproductive age--14 countries, 2008-2010. Morb
231 Mortal Wkly Rep. 2012;61(43):877.

232 5. Giovino GA, Mirza SA, Samet JM, Gupta PC, Jarvis MJ, Bhala N, et al. Tobacco use
233 in 3 billion individuals from 16 countries: an analysis of nationally representative cross-
234 sectional household surveys. Lancet [Internet]. 2012;380(9842):668–79. Available
235 from: http://www.sciencedirect.com/science/article/pii/S014067361261085X

236 6. Reece S, Morgan C, Parascandola M, Siddiqi K. Secondhand smoke exposure during
237 pregnancy: a cross-sectional analysis of data from Demographic and Health Survey
238 from 30 low-income and middle-income countries. Tob Control. 2019;28(4):420–6.

239 7. Wipfli H, Avila-Tang E, Navas-Acien A, Kim S, Onicescu G, Yuan J, et al. Secondhand
240 smoke exposure among women and children: evidence from 31 countries. Am J Public
241 Health. 2008;98(4):672–9.

242 8. Banks C, Rawaf S, Hassounah S. Factors influencing the tobacco control policy
243 process in Egypt and Iran: a scoping review. Glob Heal Res Policy. 2017;2(1):19.

244 9. Obeidat NA, Ayub HS, Bader RK, Shtaiwi AS, Shihab RA, Habashneh MA, et al.
245 Public support for smoke-free policies in Jordan, a high tobacco burden country with
246 weak implementation of policies: Status, opportunities, and challenges. Glob Public
247 Health. 2016;11(10):1246–58.

248 10. (WHO) World Health Organization. Global Adult Tobacco Survey (GATS): Egypt
249 Country Report 2009. Geneva: World Health Organization; 2010. In: EGYPT. 2009. p.
250 1–2.

251 11. Borland R, Yong HH, Cummings KM, Hyland A, Anderson S, Fong GT. Determinants
252 and consequences of smoke-free homes: findings from the International Tobacco
253 Control (ITC) Four Country Survey. Tob Control. 2006;15(suppl 3):iii42–50.

254 12. Passey ME, Longman JM, Robinson J, Wiggers J, Jones LL. Smoke-free homes: what
255 are the barriers, motivators and enablers? A qualitative systematic review and
256 thematic synthesis. BMJ Open. 2016;6(3):e010260.

257 13. Stevenson L, Campbell S, Gould G, Robertson J, Clough A. Establishing smoke-free
258 homes in the Indigenous populations of Australia, New Zealand, Canada and the
259 United States: A systematic literature review. Int J Environ Res Public Health.
260 2017;14(11):1382.

261 14. Gursoy ST, Soyer MT, Ocek Z, Ciceklioglu M, Aksu F. Why are Turkish children at risk
262 of exposure to environmental tobacco smoke in their homes?. Asian Pac J Cancer
263 Prev. 2008;9(3):467–72.

264 15. Gharaibeh H, Haddad L, Alzyoud S, El-Shahawy O, Baker NA, Umlauf M. Knowledge,
265 attitudes, and behavior in avoiding secondhand smoke exposure among non-smoking
266 employed women with higher education in Jordan. Int J Environ Res Public Health.
267 2011;8(11):4207–19.

268 16. Mazloomy Mahmoodabad SS, Karimiankakolaki Z, Kazemi A, Fallahzadeh H. Self-
269 efficacy and perceived barriers of pregnant women regarding exposure to second-

270 hand smoke at home. J Educ Health Promot. 2019;8:139.

271 17. Al-Shaikh GK, Alzeidan RA, Mandil AMA, Fayed AA, Marwa B, Wahabi HA.
272 Awareness of an obstetric population about environmental tobacco smoking. J Family
273 Community Med. 2014;21(1):17–22.

274 18. Eggert J, Al-Delaimy WK. Behaviours and attitudes related to smoking among a
275 Bedouin population in rural Jordan. East Mediterr Health J. 2013;19(6):513–9.

276 19. Shiva F, Padyab M. Smoking practices and risk awareness in parents regarding
277 passive smoke exposure of their preschool children: a cross-sectional study in Tehran.
278 Indian J Med Sci. 2008;62(6):228–35.

279 20. Memon A, Moody PM, Sugathan TN, el-Gerges N, al-Bustan M, al-Shatti A, et al.
280 Epidemiology of smoking among Kuwaiti adults: prevalence, characteristics, and
281 attitudes. Bull World Health Organ. 2000;78(11):1306–15.

282 21. el-Ansari W. Passive smoking in children: facts and public health implications. East
283 Mediterr Health J. 2002;8(1):74–87.

284 22. Wikipidia. Middle East [Internet]. [cited 2019 Nov 18]. Available from:
285 https://en.wikipedia.org/wiki/Middle_East

286 23. Lockwood C, Porrit K, Munn Z, Rittenmeyer L, Salmond S, Bjerrum M, Loveday H,
287 Carrier J SD. Chapter 2: Systematic reviews of qualitative evidence [Internet]. In:
288 Aromataris E, Munn Z (Editors). Joanna Briggs Institute Reviewer's Manual. The
289 Joanna Briggs Institute. 2017. Available from:
290 https://wiki.joannabriggs.org/display/MANUAL/Chapter+2%3A+Systematic+reviews+of
291 +qualitative+evidence

292 24. Joanna Briggs Institute (JBI). JBISRIR Reporting Guide for systematic reviews
293 Protocols [Internet]. 2019. Available from:
294 http://edmgr.ovid.com/jbisrir/accounts/ifauth.htm

295 25. Endnote (Clarivate Analytics, PA, USA) [Internet]. Endnote (Clarivate Analytics, PA,
296 USA); Available from: https://endnote.com/

297 26. The Joanna Briggs Institute. The System for the Unified Management, Assessment
298 and Review of Information (SUMARI). 2019; Available from: https://www.jbisumari.org

299 27. Moher D, Liberati A, Tetzlaff J, Altman DG, Group P. Preferred reporting items for
300 systematic reviews and meta-analyses: the PRISMA statement. PLoS Med.
301 2009;6(7):e1000097.

302 28. Joanna Briggs Institute. JBI QARI Critical Appraisal Checklist for Interpretive and

303 Critical Research [Internet]. [cited 2019 Nov 18]. Available from:
304 https://wiki.joannabriggs.org/display/MANUAL/Joanna+Briggs+Institute+Reviewer%27
305 s+Manual:

306 29. Lockwood C, Munn Z, Porritt K. Qualitative research synthesis: methodological
307 guidance for systematic reviewers utilizing meta-aggregation. Int J Evid Based
308 Healthc. 2015;13(3):179–87.

309 30. Munn Z, Porritt K, Lockwood C, Aromataris E, Pearson A. Establishing confidence in
310 the output of qualitative research synthesis: the ConQual approach. BMC Med Res
311 Methodol. 2014;14(1):108.

312

313 **Appendix1:** Medline Search Strategy

314 Medline (Ovid): Search conducted on July 2019

Search statement	Search terms	Hits
1.	exp Tobacco Smoke Pollution/	13108
2.	exp Smoking/	145045
3.	("tobacco Smoke Pollut*" or "second hand smok*" or "secondhand smok*" or "second-hand smok*" or "involuntary smok*" or "passive cigarette smok*" or "passive tobacco smok*" or "secondhand cigarette smok*" or "secondhand tobacco smok*").mp.	16072
4.	(passive or involuntary or secondhand or " second hand").mp	164071
5.	2 and 4	3998
6.	1 or 3 or 5	16530
7.	exp pregnancy/	883435
8.	exp Pregnant Women/	8000
9.	(pregnan* adj2 (women or woman).mp	113063
10.	("woman" or "women" or "female" or "girl" or "mother" or "widow").mp.	8879192
11.	(child* or infant* or juvenil* or kid? or kids or minors or minors*).	3189909
12.	exp Women/	35935
13.	exp child/	1883255
14.	10 or 11 or 12 or 13	10308005
15.	7 or 8 or 9 or 14	10311968
16.	exp Middle East/	130865
17.	exp Iran/ or exp Turkey/ or exp Bahrain/ or exp Cyprus/ or exp Egypt/ or exp Iraq/ or exp Jordan/ or exp Kuwait/ or exp Lebanon/ or exp Oman/ or exp Israel/ or exp Qatar/ or exp Palestine/ or exp Saudi Arabia/ or exp Syria/ or exp United Arab Emirates/ or exp Yemen/	137386
18.	(middle east* or Iran* or Turkey* or Bahrain* or Cyprus* or Egypt* or Iraq* or Jordan* or Kuwait* or Lebanon* or Oman* or Israel* or Palestine* or Qatar* or Saudi Arabia* or Syria* United Arab Emirates* or Yemen*).mp.	220214
19.	16 or 17 or 18	11059
20.	6 and 15 and 19	223750
21.	exp qualitative research/	345
22.	(interview* or interviews or experience* or qualitative or interview: or experience: or survey* or questionnaire* or "cross sectional stud*").mp.	2582907
23.	21 or 22	2582950
24.	**20 and 23**	258

315