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Exploring attitudes towards smoking behaviour and cessation among hospitalised smokers via a socio-ecological framework: A scoping review

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1 **Exploring patient attitudes towards smoking cessation in smoke-free healthcare settings**
2 **using a socio-ecological framework: A scoping review**

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Abstract

Objectives: Cigarette smoking is a leading cause of preventable mortality and disability. Smoke-free policies in healthcare settings have been implemented as a public health measure. This scoping review aims to explore attitudes on smokers' cessation in smoke-free healthcare settings using a socio-ecological framework

Methods: Four databases were searched for terms: smoking cessation, patient attitudes, and smoke-free policy. Of 420 studies, 17 met full inclusion criteria.

Results: The review identified four socio-ecological aspects of smoking cessation in smoke-free healthcare settings: Intrapersonal factors (health literacy, health conditions, and self-efficacy), interpersonal factors (social support, peer pressure, and social responsibility), healthcare factors (perceived mixed messages, clinical, psychosocial and health promotion supports), and societal factors (restrictions on smoking in a public place and social acceptability of smoking). Willpower, cold turkey, and nicotine replacement therapy were stated as the most common smoking cessation strategies. Smoke-free policies effectively encouraged cessation in some patients but were ineffective in those that felt a loss of autonomy. Provision of smoke breaks within smoke-free policies was considered a mixed message.

Conclusions: Holistic strategies are required to interconnect the four socio-ecological dimensions for successful smoking cessation.

Keywords – Smoking behaviour, cessation, hospitalised smokers

53 **Exploring patient attitudes towards smoking cessation in smoke-free healthcare settings**
54 **using a socio-ecological framework: A scoping review**

55 According to the World Health Organisation (WHO; World Health Organization, 2017),
56 tobacco use is one of the leading global health risk factors and a leading cause of preventable death
57 and disability. The WHO reports that tobacco use accounts for seven million deaths each year.
58 Smoking addiction causes significant health problems, including cardiovascular disease,
59 pulmonary disease, cancer, reproductive health issues, and increased susceptibility to infectious
60 diseases (United States Department of Health and Human Services, 2014). Cigarette smoking is
61 the most common form of tobacco use worldwide (World Health Organization, 2017), with nearly
62 one in seven adults indulging in daily cigarette smoking (Peacock et al., 2018). In 2017 the WHO
63 reported smoking prevalence rates in adults across the globe: Australia 16.2%; Brazil 16.5%;
64 Canada 17.5%; the United Kingdom 19.2%; China 24.7%; the United States 25.1%; Poland 26%;
65 and Spain 27.9% (World Health Organization, 2017).

66 The many triggers relating to smoking continuation and cessation fit into a socio-ecological
67 framework of prevention based on Bronfenbrenner's (1977) ecology of human development theory
68 (Ennett et al., 2010). The socio-ecological framework suggests that human development sits within
69 nested environmental levels, and the interactions between these levels shape human behaviour.
70 The first level (interpersonal level) includes an individual's biological and psychological
71 developmental history. Concerning smoking cessation, can involve stress reduction (Chezhian et
72 al., 2015) and positive attitudes toward smoking (Martinasek et al., 2017). The genetic makeup of
73 an individual is also influenced by their physical environment (intrapersonal level), such as having
74 parents or peers who smoke (Scherrer et al., 2012). Other social, economic and political factors
75 influence the individuals interpersonal and intrapersonal levels. In this context healthcare-related

76 and societal factors such as targeted tobacco advertising (Mays et al., 2014) and healthcare facility
77 policies influence the socio-ecological system. Finally, the individuals' beliefs about the social,
78 economic and political factors further influence the socio-ecological system, such as low health
79 literacy placing low socioeconomic groups at greater risk of smoking continuation (Schjøtz et al.,
80 2017).

81 Since the late 1980s, smoke-free policies in healthcare settings have been implemented as
82 a public health measure (Riseley, 1988). It is suggested that the period of hospitalisation in a
83 smoke-free healthcare setting may serve as an excellent opportunity to educate hospitalised
84 smokers about the health consequences of smoking and provide individualistic support for
85 smoking cessation (Wilson et al., 2016). However, barriers at the different socio-ecological levels
86 (individual, healthcare and societal levels) can prevent smoke-free healthcare settings from
87 achieving these goals. Although evidence suggests a positive association between smoking, poor
88 health outcomes, and mortality rates in chronic diseases (pulmonary diseases, cardiovascular
89 diseases, diabetes, and HIV/AIDS) (Siddiqi et al., 2013), there is a lack of research in smoking
90 cessation in hospitalised smokers, including negative views regarding smoking cessation services,
91 and continued smoking among patients in smoke-free healthcare settings (Wells et al., 2017). In
92 their study on smoking cessation in cancer patients, Wells et al. (2017) found that just under half
93 of the 15 cancer patients who identified as current smokers showed no interest in smoking
94 cessation treatment, believing willpower as the only way to stop smoking. Some of these patients
95 believed it was inappropriate to offer generic cessation advice to someone who already has a cancer

96 diagnosis and cited time constraints, particularly during cancer treatment periods, as a barrier for
97 cessation. Willpower refers to a psychological method of quitting smoking that involves self-
98 talk/self-reflection strategies (e.g., motivation for smoking) to generate or enhance mental strength
99 and determination to quit smoking (Hughes & Naud, 2016). It differs from quitting smoking “cold
100 turkey”, which refers to abrupt cessation without an aid. In their study of 60 Brazilian adults with
101 mental illness, Cruvinel et al. (2020) reported that 52% of smokers made a quit attempt in the past
102 year. Only 11% sought cessation support, and 4% reported receiving cessation treatment from
103 healthcare professionals.

104 Also impacting the extent of utilising smoking cessation treatments are healthcare
105 professionals’ poor attitudes and distrust regarding the effectiveness of cessation treatments. A
106 meta-analysis of 38 mixed methods studies reported that 40% of 16,369 mental health
107 professionals held negative attitudes and misconceptions regarding smoking that undermined
108 smoking cessation programs in care settings (Sheals et al., 2016). Similarly, a multinational
109 qualitative study by van Eerd et al. (2017) explored why physicians do not routinely offer
110 evidence-based cessation treatments to their patients. They found three underlying themes, (i)
111 physicians’ frustrations and negative feelings in supporting reluctant patients to quit, (ii)
112 organisational factors such as financial compensation, and (iii) a lack of trust in nicotine
113 replacement therapy, which some physicians believed would not provide a lasting treatment to
114 smokers.

134 therapy” OR "behavi*ral counselling" OR bupropion OR cystine OR varenicline “smoking
135 cessation” AND attitude OR perception OR belief AND smok* OR patient* AND “smok* polic*”
136 OR “smok* ban” OR “smoke-free” OR “tobacco-free” OR “ban on smok*”. Delimiters were
137 applied to filter results by title, abstract and keywords, scholarly journals and English language.
138 Secondary and grey sources of literature were excluded. Reference lists of included articles were
139 screened. The literature search was limited to articles published from 2009 onwards to include
140 studies conducted following the World Health Organisation report on the global tobacco epidemic
141 and a call for implementing policies of smoke-free environments (World Health Organization,
142 2009).

143 **Study selection**

144 All papers were reviewed by title and abstract by two independent reviewers (OO, ML).
145 Papers that met the following inclusion criteria were included in the final search: (i) qualitative,
146 quantitative or mixed methods research design, (ii) primary research, (iii) smokers or former
147 smokers currently in a smoke-free healthcare setting, (iv) 18 years or older, (v) described attitudes
148 of smoking interventions.

149 The literature search method yielded 420 articles. Two further articles were identified using
150 citation chaining. Once duplicates (n = 212) were removed, the titles and abstracts of 210 articles
151 were screened for inclusion in this review. After reviewing the title and abstract, the full text of 26
152 articles was read, and inclusion and exclusion criteria were applied. Most of the rejected articles
153 were excluded for one or more of the following reasons: the study did not address key search terms,
154 non-smoker populations, and addressed attitudes of care staff rather than patient attitudes,
155 secondary evidence, outcomes not related to smokers’ attitudes. The full process can be seen in
156 Figure 1.

157 **Insert Figure 1 here**

158 **Data extraction, charting and analysing the data**

159 Data extraction was conducted by two authors (OO, ML) using a predefined format
160 (Aromataris et al., 2015) and checked by a third author for accuracy (NS). The data extracted in
161 Table 1 included author, year, country, study aims, study setting, study design, participant
162 characteristics, data collection and analysis, findings, and strengths and limitations. Data were
163 analysed by three authors (OO, ML, NS) independently using thematic analysis to identify key
164 codes, resulting in categories and themes regarding smoking cessation. There were multiple
165 sessions to discuss the key themes for making a consensus. As the key themes included a diverse
166 range of variables at different levels, the authors made a consensus to code the data, integrate the
167 codes into categories, create overarching themes and apply to a socio-ecological framework
168 (Ivankova and Plano Clark, 2018). This thematic analysis resulted in a more holistic approach to
169 covering all the possible attitudes in smoking cessation.

170 **Insert Table 1 here**

171 **Results**

172 **Characteristics of the included studies**

173 Seventeen papers met the inclusion criteria: eight qualitative studies, five quantitative
174 studies and four mixed-methods studies. The key characteristics and findings of all included
175 studies are shown in Table 1. The studies' geographical distribution included England, the United
176 States, Australia, Poland, China, Spain, Brazil, and Canada. Ten of the included studies were
177 conducted in more than one facility. Most of the studies involved both males and females. Five
178 studies involved only current smokers, while others also included former smokers and non-

179 smokers. Although most of the settings were related to residential substance use disorder treatment
180 or drug and alcohol treatment settings, there was a diverse range of other settings, including
181 medical and surgical wards, psychiatric wards, mental health facilities, diabetes outpatient clinics,
182 HIV clinics, and general practice clinics.

183 Among studies that reported patients' daily cigarette consumption, the mean number of
184 cigarettes smoked per day varied from seven (Gubner et al., 2019) to 30 cigarettes per day (Hehir
185 et al., 2012). The mean age smoking was initiated ranged between 15 (Hehir et al., 2012; Kelly et
186 al., 2018; Wilson et al., 2016) and 18 (Li et al., 2019). Mean smoking duration ranged between 15
187 (Kelly et al., 2018) and 30 years (Ratschen et al., 2010). The most common smoking cessation
188 strategies utilised were willpower (57 %), cold turkey (55%), and nicotine replacement therapy
189 (45%). Nicotine replacement therapy was reported to be the most common therapy to treat tobacco
190 dependence among inpatients (Shopik et al., 2012).

191 Four key interconnected themes related to attitudes on smoking cessation in smoke-free
192 healthcare settings were synthesised and categorised via a socio-ecological framework, including
193 (i) intrapersonal factors, (ii) interpersonal factors, (iii) healthcare factors and (iv) societal factors.
194 These different levels of influence reflect varied motives to quit smoking across all studies.

195 *Intrapersonal factors*

196 Intrapersonal factors influencing smoking cessation included beliefs about smoking,
197 perceived benefits of smoking, self-efficacy, attitudes towards smoking therapies, health
198 awareness, current history of health conditions, fear of nicotine withdrawal symptoms, and prior
199 knowledge of the facility's smoke-free policies.

200 The perception around smoking, smoking cessation methods, and the experiences
201 surrounding available care services influenced individuals' decision making around cessation.

202 Some patients residing in mental health facilities had perceptions that cigarette smoking was a
203 “lesser evil” compared to their primary psychiatric diagnosis, such as substance use (Bhuiyan et
204 al., 2017), and felt smoking was dissimilar to their other addictions (Wilson et al., 2016).
205 Participants’ perceptions about benefits of smoking included socialisation (Fallin-Bennett et al.,
206 2018; Shopik et al., 2012), enticing effects of tobacco taste and inhalation process (Ghazaleh et
207 al., 2018), habit (Ratschen et al., 2010; Wilson et al., 2016), and emotional support during stress
208 (Ghazaleh et al., 2018; Li et al., 2019; Shopik et al., 2012). The fear of nicotine withdrawal or
209 cravings was associated with continued smoking (Ghazaleh et al., 2018; Li et al., 2019). Moreover,
210 some participants expressed their concerns that healthcare professionals may misinterpret nicotine
211 withdrawal symptoms as signs or symptoms of their mental illness (Hehir et al., 2012). Some
212 patients believed that nicotine replacement therapy was just as harmful as smoking and unhelpful
213 for smoking cessation (Kelly et al., 2018; McQueen et al., 2014). Others believed that therapy
214 increased cigarette consumption and caused allergic skin reactions from nicotine patches
215 (Ghazaleh et al., 2018; Ratschen et al., 2010). Although, McQueen et al. (2014) found that many
216 patients perceived nicotine replacement therapy as less harmful than cigarettes, and they believed
217 it could increase cessation.

218 Intrapersonal factors also suggested that individuals may be aware of smoking risks but
219 lack the self-efficacy to stop smoking, and the comorbid health conditions either motivated or
220 hindered smoking cessation. Most patients were aware of smoking's health risks, and some stopped
221 or reduced cigarette consumption whilst in a smoke-free healthcare setting (Bhuiyan et al., 2017;
222 Buczkowski et al., 2014; Ghazaleh et al., 2018; Li et al., 2019; Wilson et al., 2016). Others
223 continued smoking behaviours and expressed doubts regarding improvements in their quality of
224 life if they stopped smoking (Ratschen et al., 2010). McQueen et al. (2014) reported that most

225 patients did not plan to quit smoking in the next twelve months as many of them were in a pre-
226 contemplation or contemplation stage of change.. Having prior knowledge of a facility's smoke-
227 free policies helped patients prepare for their stay at the facility and enhanced patients' self-
228 efficacy regarding smoking cessation (Hehir et al., 2012). Many individuals were aware of the
229 risks of smoking for themselves and their family and believed in the advantages of cessation.
230 However, they believed they did not have the control and self-efficacy to commit and make it
231 happen (Bhuiyan et al., 2017; Buczkowski et al., 2014; Ghazaleh et al., 2018; Li et al., 2019;
232 Wilson et al., 2016). Ghazaleh et al. (2018) found that diabetic patients stopped or reduced the
233 number of cigarettes consumed daily after diagnosis

234 *Interpersonal factors*

235 Interpersonal factors related to smoking cessation include family-related motivation to
236 quit, peer support and peer pressure, people's views about smoking, urge to smoke when others
237 smoke, and consideration of the impact of smoking on others.

238 Social support was found to be a key driver of cessation. Wilson et al. (2016) and Ghazaleh
239 et al. (2018) reported that most patients intended to quit due to the support and encouragement
240 from their families and friends. Findings from the focus group discussions conducted by Wilson
241 et al. (2016) indicated that anti-smoking television advertisements empowered family members to
242 challenge a smoker to stop smoking. Watching advertisements that portrayed smoking-related
243 health problems prompted individuals to encourage family members to quit smoking to improve
244 their quality of life. Similarly, peer support, such as engaging in extra-curricular activities with
245 friends, served as external cues to support smoking cessation (Ghazaleh et al., 2018). Some
246 patients felt a social responsibility for the health of loved ones, including understanding the effects
247 of second-hand smoke exposure on others, including children and women and being the only

248 family support for others (Fallin-Bennet et al., 2018). This social responsibility had a positive
249 influence on their motivation to quit smoking. Wilson et al. (2016) reported that guilt regarding
250 continued smoking was common among patients who expressed a desire to quit smoking. Also,
251 having a family member suffering from a smoking-related health condition such as cancer served
252 as a motivating factor to stop smoking (Hehir et al., 2012). Buczkowski et al. (2014) found that
253 some patients received signals about the unpleasant smell of cigarette smoke from their family
254 members, which motivated them to quit smoking. Among both current and former smokers,
255 pregnancy and breastfeeding were strong motivators for abstinence to protect the baby, but many
256 women returned to smoking when the gestation periods was over (Buczkowski et al., 2014). Some
257 patients reported that they initiated cigarette smoking following peer pressure from fellow smokers
258 (Ghazaleh et al., 2018). Being in an environment that induced the urge for smoking, witnessing
259 others smoke, and specific social settings were implicated in smoking relapse (Buczkowski et al.,
260 2014; de Oliveira et al., 2014; Ghazaleh et al., 2018).

261 *Healthcare factors*

262 Factors at the healthcare service level that influence smoking behaviours include perceived
263 mixed messages related to policies and practices around smoking and sensation, the impact of
264 hospitalisation on smoking behaviours, clinical and psychosocial supports, role modelling, health
265 promotion to improve health and wellbeing, and an individualistic approach to the provision of
266 cessation treatments.

267 . Regarding the impact of hospitalisation on smoking behaviours, many patients, including
268 those who had never attempted to stop smoking, felt there was an opportunity to consider smoking
269 cessation during their current stay in the smoke-free facility (Li et al., 2019; Martinez et al., 2020).
270 Despite recognising the hospitalisation period or staying in a smoke-free facility as a good time to

271 reduce or stop smoking, some patients mentioned they would consider quitting after their current
272 admission (de Oliveira et al., 2014; Fallin-Bennett et al., 2018; Ratschen et al., 2010; Wilson et
273 al., 2016). These patients suggested this was due to challenges that discouraged changes in their
274 smoking behaviours, including boredom, lack of activities to indulge in during hospitalisation,
275 stress, unsuitability of the environment to address smoking and a need for a substitution for illicit
276 substances during their treatment.

277 Challenges facing adherence to smoke-free policies in healthcare facilities were identified.
278 These included the concealment of smoking materials on the ward (Huddleston et al., 2018),
279 secret smoking during the healthcare stay (Li et al., 2019), smoking on and off the facility property
280 (Shopik et al., 2012) and covert facilitation of smoking by staff (Huddleston et al., 2018). To
281 increase adherence to smoke-free policies in healthcare settings, some patients suggested a fine for
282 violating the policy (Shopik et al., 2012). Bhuiyan et al. (2017) reported that some participants
283 expressed strong opinions about staff allowing smokers to utilise “smoke breaks”, which they
284 thought promoted continued smoking habits

285 Regarding clinical and psychosocial supports for smoking cessation, many patients
286 claimed that they received limited support from healthcare providers and demonstrated a
287 willingness to accept smoke-free policies if they were provided with information about the health
288 risks of smoking (Bhuiyan et al., 2017; Li et al., 2019; McQueen et al., 2014) or link between
289 smoking and their diagnosis (Ghazaleh et al., 2018). Patients expressed a need for healthcare
290 providers to be role models for smoking cessation (Bhuiyan et al., 2017; Martinez et al., 2020),
291 and provide adequate smoking cessation support (Hehir et al., 2012; Li et al., 2019; Martinez et
292 al., 2020; Wilson et al., 2016). There were reports that staff smoked in the facility (Shopik et al.,
293 2012) or had smoked together with patients, making it difficult to view them as role models for

294 smoking cessation (Wilson et al., 2016). The most common therapy offered for tobacco
295 dependence treatment was nicotine replacement therapy (Shopik et al., 2012). Telephone support
296 services were not favoured as some found them unhelpful, while others found it difficult to receive
297 counselling via the telephone (Wilson et al., 2016). Patients receiving alcohol and drug
298 rehabilitation suggested modifying the sessions into a group-like format similar to recovery-based
299 groups already being offered at the facility (Bhuiyan et al., 2017).

300 *Societal factors*

301 Factors related to the societal level included restrictions on smoking in public places and
302 home, social acceptability, and health literacy around smoking. The implementation of a ban on
303 smoking in public facilities was associated with mixed reactions. While some patients supported
304 the smoke-free policy because of health and environment-related factors such as a reduction in
305 second-hand smoke exposure (Pagano et al., 2016), others expressed strong disapproval, anger and
306 feelings of powerlessness due to the perceived loss of their rights to smoke (Fallin-Bennett et al.,
307 2018; Hehir et al., 2012; Ratschen et al., 2010). There was evidence of improved smoking
308 behaviours among some patients (Gubner et al., 2019; Ratschen et al., 2010) and increased
309 smoking cessation advice (Huddleston et al., 2018) after the policy's implementation. In a five-
310 year longitudinal study conducted by Pagano et al. (2016), the mean number of cigarettes per day
311 of smokers with substance use addiction decreased from 13.7 (SD = 8.38) before the
312 implementation of a smoke-free policy to 10.2 (SD = 4.44) post-implementation. Patients'
313 smoking prevalence over the same period was unchanged.

314 Formal bans on smoking at the workplace and informal smoking restrictions at home were
315 cited as key motivating factors that helped some patients stop or reduce smoking (Buczowski et
316 al., 2014; Ghazaleh et al., 2018; Wilson et al., 2016). Social acceptability and enculturation of

317 cigarette smoking are reflected in the terms used by some patients to describe smoking in public
318 places following the implementation of a smoke-free policy. Bhuiyan et al. (2017) reported that
319 patients identified smoking as their “last freedom” and an “accepted norm”. Ghazaleh et al. (2018)
320 found that patients referred to cigarettes as their “best friend” and adopted new social behaviours
321 such as smoking outside public places.

322 **Discussion**

323 This scoping review highlights that smoking cessation in smoke-free healthcare settings
324 does not happen in isolation and requires an integrated approach across different levels. Hence,
325 this review utilised a socio-ecological approach to address smoking cessation at four
326 interconnected levels (interpersonal factors, intrapersonal factors, healthcare factors, and societal
327 factors). This review provided insight into possible interactions among the key factors to improve
328 the understanding of smoking behaviours and cessation roles.

329
330 The intrapersonal and interpersonal level's main indicators are beliefs/attitudes, health
331 literacy, self-efficacy, social support perceived and received, and peer pressure. The patients' false
332 beliefs about smoking (Bhuiyan et al., 2017; Wilson et al., 2016), perceived benefits of smoking
333 (Fallin-Bennett et al., 2018; Ghazaleh et al., 2018; Shopik et al., 2012), and fear of nicotine
334 withdrawal symptoms (Ghazaleh et al., 2018; Li et al., 2019) could perpetuate negative attitudes
335 towards smoking cessation. Those who reported positive smoking cessation attitudes reported
336 awareness of smoking's health consequences and negative social implications (Buczowski et al.,
337 2014; Ratschen et al., 2010). Overall, there are paradoxical arguments around smoking cessation
338 across the studies. Some patients harbour fears of cravings or withdrawal from nicotine and would

339 not consider quitting (Ghazaleh et al., 2018; Li et al., 2019), while others believe that nicotine
340 replacement therapy increases the number of cigarettes smoked daily and releases more nicotine
341 resulting in further addiction (Ghazaleh et al., 2018; Ratschen et al., 2010). These findings may
342 explain the reason behind cessation preferences such as willpower and cold turkey over nicotine
343 replacement therapy (Kelly et al., 2018). These factors may explain why most of the patients had
344 no plan to stop smoking or were in a pre-contemplation or contemplation stage of behavioural
345 change (McQueen et al., 2014). These findings highlight the importance of health literacy and
346 social support as key factors that impact interpersonal and intrapersonal levels (belief and self-
347 efficacy). If individuals receive the right information at the right time, such as the burden or impact
348 of smoking on themselves, their families, and society, they may be better positioned to make the
349 right decision around smoking cessation. In some cases, individuals may have the knowledge or
350 awareness of the consequences of smoking, but they may not have the self-efficacy and the right
351 support to motivate them to quit.

352 The healthcare levels main indicators include healthcare, social, and community care
353 systems. They are paramount in directing and encouraging individuals to successful smoking
354 cessation. Some patients reported minimal support from staff and could not view staff as role
355 models in smoking cessation because they were aware of staff smoking in the facility (Shopik et
356 al., 2012) and facilitated covert patient smoking (Huddleston et al., 2018). These behaviours may
357 serve as negative factors for health promotion concerning smoking cessation. Hospitalisation in
358 smoke-free hospitals can have negative and positive impacts on smoking behaviours. Many
359 patients recognised that a period of stay in a smoke-free environment offered a good opportunity
360 to seek help with smoking cessation. Yet, some decided they would rather consider quitting after
361 discharge because they believed that smoking helped them cope with boredom and emotional

362 stress during the admission (Ratschen et al., 2010; Wilson et al., 2016). These attitudes are
363 concerning because they indicate re-consideration in the current methods of smoking cessation at
364 the service level, which influence an individual's commitment to quitting and the outcome of
365 future attempts following discharge from hospital. According to Mussulman et al. (2019), smoking
366 during hospitalisation, low confidence in quitting and not setting a quit date are strong predictors
367 for continued smoking, occurring as early as within a day of hospital discharge. Additionally, the
368 commonly held views about smoking among some patients, including being a good coping
369 mechanism for increased stress during hospitalisation (Fallin-Bennett et al., 2018), patient's right
370 to smoke (Hehir et al., 2012), and risks of aggressiveness due to nicotine withdrawal (de Oliveira
371 et al., 2014) may account for sustained smoking habits (Sheals, Tombor, McNeill, & Shahab,
372 2016).

373

374 Societal levels main indicators include implementing smoke-free policies in public areas,
375 the impact of hospitalisation, clinical and psychosocial supports, smoking bans in public places
376 and social acceptability of smoking. Implementation of smoke-free policies encouraged cessation
377 in some patients (Gubner et al., 2019; Ratschen et al., 2010), while others disapproved of the
378 policy, and it did not affect their smoking behaviours (Stockings et al., 2015). This indicates that
379 different policies and practices may be required based on different populations or an individualistic
380 approach to personalise the care provision for smoking cessation. Stockings et al. (2015) found
381 that more than 50% of patients with mood disorders or serious mental illness have high levels of
382 nicotine dependence. This confirms the findings of this review that people with psychological
383 illnesses and higher nicotine dependence may have a lower likelihood to receive help to quit and
384 may require specific approaches and strategies to their cessation (Szatkowski & McNeill, 2013).

385 Furthermore, the concern by some patients that nicotine withdrawal symptoms may be
386 misinterpreted as symptoms of their mental health conditions (Hehir et al., 2012) indicates the
387 importance of providing this group of patients with adequate treatment for nicotine withdrawal, so
388 clinical symptoms of mental health conditions can be assessed accurately. The findings of multiple
389 motivating factors for smoking cessation among patients suggests that smoking cessation strategies
390 and the actual smoking cessation treatments should be individualised to achieve better treatment
391 outcomes.

392 The high cost of cigarettes was highlighted as a motive for quitting (Bhuiyan et al., 2017;
393 Buczkowski et al., 2014; Ratschen et al., 2010). While other patients, who were not motivated by
394 cost, considered reducing smoking because they had a limited amount of accessible funds during
395 their hospital stay (Ratschen et al., 2010). Bader, Boisclair, & Ferrence (2011) support these
396 findings, highlighting that increasing the price of cigarettes effectively reduces smoking in high-
397 risk populations, including youth, young adults, persons of low socioeconomic status. Other
398 studies found that the high cost of cigarettes was viewed as a disincentive for smoking (Bhuiyan
399 et al., 2017; Buczkowski et al., 2014; Ratschen et al., 2010).

400 There is a diverse range of interconnected socio-ecological factors for smoking initiation
401 and cessation. At the individual level, these include stress (Chezhian et al., 2015), having parents
402 or peers who smoke (Scherrer et al., 2012), attitudes toward smoking (Martinasek et al., 2017),
403 health literacy, socioeconomic status (Schjøtz et al., 2017), health concerns, pregnancy and
404 breastfeeding. At the societal level, these include smoking advertising (Mays et al., 2014), smoking
405 bans in the home and at work, cigarette expenses, clinical and psychosocial support from social
406 networks, smoke-free policies, social acceptability of smoking, inadequate support or lack of
407 adherence to smoke-free policies from healthcare professionals. Addressing these modifiable risk

408 factors could delay the uptake of smoking and improve smoking cessation (Chezhian et al., 2015).
409 Understanding the interconnectivity between the levels of smoking-related influences is crucial
410 for providing appropriate individualised and integrated support. Factors such as using smoking to
411 socialise and regulate emotions may increase the likelihood of succumbing to influences such as
412 peer pressure (Ukwayi, Eja, & Unwanede, 2012).

413 Although this review does not specifically explore the various smoking cessation
414 techniques and approaches utilised by the study participants, some patients utilised willpower as
415 their sole cessation method. This finding correlates with previous results showing that most
416 smokers believe willpower is critical and adequate for stopping smoking (Hughes & Naud, 2016).
417 In a systematic review conducted by Smith et al. (2015), willpower was perceived as both a method
418 of quitting and a strategy to curb nicotine cravings. The limited belief in the effectiveness of
419 nicotine replacement therapy reported in this review, and the belief that using cessation aids is a
420 sign of weakness and lack of confidence in one's capabilities (Hughes & Naud, 2016), may
421 contribute to over-reliance on willpower. The belief in willpower may negate health professionals'
422 efforts towards delivering smoking cessation education and treatments. There is a need to target
423 beliefs surrounding willpower to enhance motivation to use evidence-based cessation aids,
424 increasing attempts to quit (Hughes & Naud, 2016).

425 Healthcare professionals can promote non-smoking behaviours by providing clinical,
426 educational and psychological support to increase awareness of health risks associated with
427 cigarette smoking, combat ambivalence regarding quitting and deal with false beliefs about
428 smoking and cessation treatments. According to Dawson et al. (2012), the most effective way to
429 quit smoking is with professional advice and support combined with smoking cessation treatment.

430 But the current smoking status of healthcare workers may impact smokers' perception of them as
431 role models, which could undermine the provided cessation support.

432 With social acceptability and enculturation of smoking, smokers may feel emboldened in
433 their unhealthy habits of cigarette smoking, resulting in more people smoking in public and an
434 increased potential to intensify the urge to smoke, particularly among smokers who lack self-
435 regulation (Wang, Eddy & Fitzhugh, 2000). Strict implementation of smoking bans in public
436 places would impact environmental and social cues to smoking and reduce the chances of smoking
437 because others are smoking (Wilson et al. 2016).

438 This review's strengths include the inclusion of diverse study designs (quantitative,
439 qualitative and mixed-methods), including various care settings which look at the topic from
440 different perspectives. However, some studies included small sample sizes and were often in a
441 single study site, which may impact the generalisation of the results.. Further primary research is
442 needed to understand the predictors of hospitalisation's positive impact on smokers' behaviour and
443 attitudes toward smoking cessation.

444 It is recommended to personalise smoking cessation treatments based on an individual's
445 background and context. It is vital to include social networks such as family and friends' support
446 in cessation programs while creating awareness about relapse risks. Given negative attitudes and
447 misconceptions about smoking cessation and nicotine replacement therapy, it is paramount to
448 enhance health knowledge by highlighting the impact of smoking at the individual and societal
449 levels. The concern regarding misinterpretation of nicotine withdrawal symptoms among clients
450 with mental health conditions as signs of worsening conditions indicates a need for early
451 assessment of smoking status and prompt provision of nicotine withdrawal treatment of smoker's

452 choice. The review findings recommend ongoing staff training on the health benefits of smoking
453 cessation and how to adhere to a smoke-free policy in healthcare settings to enhance their
454 willingness and confidence to enforce policies and advise patients. Furthermore, efforts to build
455 smokers' self-confidence skills to commit to quitting smoking during hospitalisation through
456 behavioural interventions and peer support are deemed crucial as such skills would enhance
457 successful quit rates.

458 **Conflict of interest statement** - The authors declare that they have no conflict of interest.

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