

34 (Betran et al., 2016; Sandall et al., 2018). The increasing concern for medicalization of
35 childbirth that threatens public health (e.g., increased cesarean rates and obstetric interventions)
36 and changing individual demands and national and international healthcare policies have
37 highlighted the importance of quality and sustainable labor and birth education (Carr and
38 Riesco, 2007; Betran et al., 2016; Gonçalves et al., 2018). Although there is limited research
39 on how the quality of labor and birth education translates into perinatal outcomes, health
40 professionals who have received quality training have been found to make a positive difference
41 (Renfrew et al., 2014; Luyben et al., 2018). Although international standardization is important
42 to improve the quality of the curricula, the content will inevitably be shaped in line with the
43 needs, policies, and targeted health outcomes of individual countries (International
44 Confederation of Midwives ICM, 2019). Research shows that countries have some common
45 problems, such as the inability of educators to adapt to updated curricula in terms of content or
46 time, insufficient number and quality of academic and clinical educators, lack of infrastructure,
47 and inter-professional conflict and competition (Barger et al., 2019; Moller et al., 2022). The
48 World Health Organization (WHO, 2016) emphasized that low-quality education and
49 inadequate clinical practice constitute barriers to reaching desirable outcomes; therefore, the
50 WHO started a 15-year action plan to improve the quality of education offered to midwives,
51 who play a primary role in minimizing risk at birth. Further, midwifery models in which the
52 mother is at the center of childbirth, preserving natural processes of childbirth and focusing on
53 increasing the mother's well-being, are being promoted. Moreover, some key areas have been
54 identified, such as clearly defining the roles of professionals in the childbirth team and
55 expanding the roles of midwives in both childbirth and other maternal health services (Barger
56 et al., 2019). Innovative curricula have been designed in recent years, integrating personalized
57 care and digital culture, for training midwives to provide the best possible care to women and
58 their families (Hall & Way, 2018; Hundley et al., 2018). Recently, Turkey has ranked first
59 among Organisation for Economic Co-operation and Development (OECD) members in
60 caesarean section rates (OECD, 2019). Healthcare policies have been established to improve
61 physiological birth, maternity hospitals' amenities have been improved, adjustments have been
62 made to enable professionals in the childbirth team to fulfill their roles during labor and birth,
63 and action plans have been developed. However, integrating these developments into
64 curriculums remains a challenge (Barger et al., 2019).

65 Since 1997, midwifery students in Turkey have been enrolling in four-year, full-time,
66 direct-entry midwifery programs after high school based on a national examination. The

67 midwifery education program is for all universities across the country (a total of 61 midwifery
68 departments); it is conducted by the Council of Higher Education (YÖK), based on the
69 guidelines of international organizations like the WHO and ICM, as well as the European
70 Union's 80/155/EEC, designed in line with council directives. To graduate, students are
71 expected to acquire the midwifery skills listed in these directives. Because of the lack of the
72 number of midwifery scholars required for clinical education, clinician midwives are assigned
73 as preceptors who participate in the clinical education, supervision, and evaluation processes of
74 midwifery students. The limited clinical training areas and the fact that students from other
75 departments (e.g., medical students in university hospitals and nursing students in other
76 hospitals) receive clinical training in these areas are among the challenges for midwifery
77 students for gaining skills. The midwifery students' labor and birth training is crucial because
78 it directly affects the quality of care provided to women in labor. We aimed to bridge the gap
79 in this area by exploring educators' experiences of delivering labor and birth education to
80 midwifery students and evaluating the circumstances that affect the quality of labor and birth
81 education in Turkey.

82

83 **METHODS**

84 **Design and Participants**

85 This was a qualitative study. Purposive sampling was used to recruit educators who taught
86 midwifery classes at midwifery departments at universities in Turkey. Sixty-one universities in
87 Turkey offer midwifery education through 4-year undergraduate programs, and a labor and
88 birth course is offered in the third year. In Turkey, through the YÖK Program Atlas (2020)
89 system, the contact addresses of midwifery educators are registered; their email addresses can
90 be accessed from this system. Further, every midwifery educator has a publicly available
91 institutional email address on the university website. In our research, using both systems, emails
92 were sent to educators who give birth lessons in the midwifery departments of universities in
93 seven regions of Turkey to achieve data diversity. A sample pool was created with the educators
94 who accepted our request, and interviews were conducted until data saturation was reached.
95 Sixteen educators belonging to 16 universities from seven regions of Turkey voluntarily agreed
96 to participate in the research. Educators who were not interviewed were informed. (Streubert
97 and Carpenter, 2014; Yıldırım and Simsek, 2011).

98 **Data Collection**

99 Those who agreed to participate in the study were interviewed using the Google Meet platform
100 between October 2020 and December 2020, with audio and video recordings. The interviews

101 were conducted by the first author (GGI), who was a midwifery educator, using a semi-
102 structured interview. The interviews collected sociodemographic characteristics and asked
103 questions such as ‘What are your experiences in labor and birth education?’, ‘What are the
104 opportunities and obstacles facing quality labor and birth education?’ and ‘What are your
105 recommendations to improve practices in this area?’ The data were transcribed within one week
106 after the interviews, and each transcript was numbered to protect the anonymity of the
107 participant. The average duration of the interviews was 31.51 ± 13.3 (16.23–63.52) min.

108 **Data Analysis**

109 Data from in-depth interviews were transcribed verbatim and analyzed by inductive thematic
110 analysis. Thematic analysis is a qualitative descriptive approach and is used to identify, analyze,
111 and report themes from categories (Vaismoradi, Turunen, and Bondas, 2013). In the present
112 study, voice recordings of the interviews were transcribed verbatim on the day the interviews
113 were conducted.

114 The inductive analysis was made as follows: first, comparisons of words, phrases, and sentences
115 were made and meaningful units displaying patterns were detected. Second, by utilizing open
116 coding, concepts were determined, and subthemes were created and defined. Third, subthemes
117 were examined to determine whether there were relationships between them by means of tables
118 and diagrams to reveal conceptual patterns. Fourth, the researchers discussed their findings.
119 Finally, they agreed on abstractions of meaningful units and subthemes into themes.
120 Conclusions drawn by the researchers by using main concepts and themes are based on
121 preceptor midwives’ descriptions (Hsieh and Shannon, 2005; Elo and Kyngas, 2008).

122 **Ethical Considerations**

123 The study was carried out in accordance with the Code of Ethics of the World Medical
124 Association (Declaration of Helsinki). Ethical approval was obtained from the ethical
125 committee of the lead author’s university (University of Mersin Ethics Committee-30/09/2020-
126 20-668). The purpose of the study, the data collection technique, video recording, and security
127 were explained to the participants both verbally and in writing. Verbal consent was obtained
128 from the volunteers who accepted the study at the beginning of the video interview.

129 **Trustworthiness**

130 The trustworthiness of the qualitative data was based on credibility, dependability,
131 confirmability, and transferability (Houghton et al., 2015). For the credibility of the data, the
132 transcription of the audio recordings was made within 1 week of the interviews. To enhance
133 dependability, two authors performed the coding separately, and when their codes differed, they

134 sought the suggestion of a third author in creating the codes, categories, and themes. To achieve
135 confirmability of the data, transcriptions and findings were reviewed and endorsed by a third-
136 party researcher who was experienced in qualitative research. To enhance the transferability of
137 the results, statements of the participants were given in appropriate quantity and quality.

138

139 **FINDINGS**

140 The mean age of the midwifery educators was 44 ± 5.77 (37–58) years, and all had a doctorate
141 degree in midwifery or obstetric nursing. The mean length of midwifery educator career was
142 12.87 ± 7.81 (3–28) years. The average clinical experience of the educators in the maternity
143 unit was 3.56 ± 4.73 (0–15) years.

144 Three themes were developed: 1) impacts of global changes on labor and birth education, 2)
145 opportunities/obstacles in labor and birth education and 3) recommendations for quality labor
146 and birth education.

147 **1. Impacts of global changes on labor and birth education**

148 The main theme ‘impacts of global changes on labor and birth education’ comprises three sub-
149 themes: changing policies and philosophies, changing cultures, and changing individuals.

150 **1.1.Changing policies and philosophies**

151 Educators stated that global or national policies influenced labor and birth education, leading
152 to changes in the philosophy of practice. However, it took time for the changing philosophies
153 to be adopted by educators and practice sites and to be translated into labor and birth education.

154 *‘For the last 20 years, Turkey has been pursuing a pro-natalist policy. This has had a*
155 *profound impact on labor and birth education and changed it’. (Participant 4)*

156 *‘The world is changing, so are the practices of childbirth, but if we base our education on*
157 *a philosophy of respect for the woman, baby and birth, practices might continue to change,*
158 *but there would always be respect at its core’. (Participant 15)*

159 *‘The philosophy of the educator around birth matters when it comes to teaching philosophy.*
160 *Can educators internalize philosophies around birth? It is almost impossible to teach*
161 *philosophy without internalizing it. Can an educator who advocates caesarean section*
162 *convince a student of the naturalness of birth’? (Participant 16)*

163 **1.2.Changing cultures**

164 Educators stated that the perceptions and attitudes of both teachers and students towards birth
165 were primarily affected by their cultural background, and this affected individuals’ teaching
166 and learning processes.

167 *'Students' standards of judgement and culture affect the extent to which they benefit from*
168 *the labor and birth education we provide, because if they fail to go beyond these factors,*
169 *they shut themselves off and do not receive the education. I try to understand the perception*
170 *of birth in students' cultures. I emphasize the importance of culture-based care rather than*
171 *standard care. It is important for them to gain flexibility'. (Participant 12)*

172 **1.3.Changing individuals**

173 Educators stated that the styles of individual learning and skill acquisition has changed across
174 generations. This meant that there was a need for training that would strengthen not only
175 obstetrical knowledge and skills but also social and intellectual attributes.

176 *'The new generation has poor fine motor skills. When we try to teach episiotomy repair, we*
177 *discover that students have never sewed and thus lack hand skill. That's why they take a*
178 *handicraft class before taking the midwifery class'. (Participant 10)*

179 *'Even social courses affect labor and birth education. The acquisition of psychomotor skills*
180 *alone is not enough to provide quality midwifery care; students' perception of birth,*
181 *communication skills, empathy skills, keenness to help, socialization skills... the new*
182 *generation needs these more than ever...'* (Participant 4)

183 **2. Opportunities/ barriers in labor and birth education**

184 In these themes we report three sub-themes to discuss informational, systemic and individual
185 barriers in relation to labor and birth education.

186 **2.1. Informational opportunities/barriers**

187 A number of the participants felt that they provided up-to-date knowledge that was
188 acknowledged by others:

189 *'I believe that the theoretical transfer of labor and birth education in Turkey is very good.*
190 *It is constantly updated with evidence; students graduate with up-to-date knowledge and*
191 *skills. For instance, we learn from our students working abroad, that hospital*
192 *administrators their express satisfaction about up-to-date information and practices*
193 *possessed by midwives from Turkey'. (Participant 11)*

194 Some considered that as information resources have become more varied and accessible, this
195 had enabled students' easy access to different resources in their native language, promoting
196 opportunities for learning and practice.

197 *'Today's students are very lucky. The number of resources in our own language has*
198 *increased, and with increased technological opportunities, access to information has*
199 *become very fast and easy. Even in clinical settings, students can quickly access information*

200 *and find the opportunity to apply it, so that they do not miss out on learning opportunities’.*
201 *(Participant 10)*

202 However, from a negative perspective, a few considered that the lack of knowledge in the
203 literature on ‘how to deliver labor and birth education’ was a challenge:

204 *‘I have never researched how to deliver labor and birth education, now I realize it because*
205 *you have asked me, but I think there is very little information around it, because I have*
206 *never come across it’.* (Participant 14)

207 *‘Every year, when I plan the course, I search ‘How to deliver labor and birth education?’*
208 *and I find nothing. I keep doing as I know, right or wrong’.* (Participant 16)

209 Concerns were also expressed about some of the information (including visuals) being shared
210 on social media platforms, leads to undesirable effects in labor and birth education.

211 *‘Students are influenced a lot by social media. Although we provide them with the best*
212 *evidence, they are also exposed to plenty of images and content about birth on social media,*
213 *and I realize that they try to apply what they have seen rather than relying on evidence.*
214 *However, unfortunately, they have no idea and awareness of its accuracy’.* (Participant 7)

215 **2.2. Systemic opportunities/ barriers**

216 As opportunities or barriers for quality labor and birth education;

217 Educators mentioned the number of students, infrastructural opportunities, opportunities in
218 schools and practice sites.

219 *‘Availability of positive childbirth environments in recently opened hospitals enabled us to*
220 *reach the goals of the course, because we have become able to get students to apply what*
221 *we teach and acquire skills. However, unfortunately, such opportunity is not available in*
222 *all provinces yet’* (Participant 2)

223 *‘Increased number of students per teacher has unfortunately damaged the quality of our*
224 *education... Simulation laboratories are insufficient. Students learn directly on the patient’.*
225 *(Participant 15)*

226 In addition, educators mentioned school-hospital cooperation and legal regulations as
227 opportunities or obstacles for quality labor and birth education.

228
229 *‘We give students an ideal education, but in placements, they find themselves in a whole*
230 *different world. They retain what they see in placement rather than what they learn in*
231 *theoretical education’.* (Participant 10)

232 *'There are criteria for standardization in labor and birth education, but it is not*
233 *accompanied by legal regulation. Midwives/doctors do not want the student to assist with*
234 *birth because they are rightfully afraid of malpractice lawsuits.'* (Participant 6)

235 **2.3. Individual opportunities/ barriers**

236 Individually, many different opportunities or barriers were mentioned.

237 The personal characteristics of the educator, their lack of experience and skills in midwifery
238 and teaching midwifery;

239 *'The instructor needs to be patient, interested, enjoy teaching midwifery and not give up.'*
240 *(Participant 1).*

241 *'The instructor definitely needs to have experience and skills in birth. Birth cannot be taught*
242 *by educators who just quote what the book says.'* (Participant 2)

243 *'Educators know about birth but cannot teach it. Because the experience and education of*
244 *birth is very special. It takes experience to be able to convey emotion and intuition'*
245 *(Participant 4)*

246 Clinical instructors not being good role models;

247 *'The greatest obstacle to labor and birth education is midwives in the clinic not being able*
248 *to perform their independent roles in birth and the student not seeing the role model in the*
249 *birth room.'* (Participant 10)

250 The individual characteristics of the student and their perceptions and attitudes towards birth;

251 *'Do the student's personal ethics and professional ethics overlap? This affects the*
252 *perception of birth.'* (Participant 6)

253 *'The student's personality, perception, affection, being active and curious positively affect*
254 *the achievement of the goals.'* (Participant 6)

255 *'Students are told about the mechanism of birth and taken to a hospital after mechanical*
256 *simulations on a model in the laboratory. Are such students mentally and emotionally*
257 *ready? If they are not ready, they are traumatized from the very beginning. How aware are*
258 *the educators of this? Have they ever thought of preventing this? Do they know the effects?*
259 *What are they doing'?* (Participant 10)

260 **3. Recommendations for quality labor and birth education**

261 The main theme 'recommendations for quality labor and birth education' comprises three sub-
262 themes: enhancing multi-faceted individual outcomes, ensuring integration and using support
263 resources.

264 **3.1. Enhancing multi-faceted individual outcomes**

265 Educators mentioned several factors involved in improving the quality of labor and birth
266 education including students' being mentally and emotionally prepared for assisting with birth,
267 acquiring self-confidence, awareness, empathy, and a sense of professional belonging.

268 *'It is very important to teach empathy in labor and birth education. But empathy cannot be*
269 *not taught theoretically. You need to exercise empathy yourself to teach it to students'*
270 *(Participant 8)*

271 They also stated it was important for educators to receive periodical training around the quality
272 labor and birth education and to increase their motivation to teach birth.

273 *'I think it is necessary to train the trainers first. This would also ensure standardization.*
274 *There is need for a platform where midwifery educators would gather periodically and can*
275 *share their materials and methods'. (Participant 10)*

276 They also emphasized that the students are educated by an idealist educator who has adopted
277 professional ethical values and that being role model is the important.

278 *'It is important for students to be educated by an idealist instructor so that they can apply*
279 *in practice what they have learned in labor and birth education. Loving your job, being*
280 *idealistic, being committed and sense of belonging...'* (Participant 2)

281 *'There are challenges around acquiring the roles of the midwife in birth. Sense of belonging*
282 *is developed by conveying it clearly in the class and integrating it into the student's*
283 *individual roles, but of course it takes time. Educators being a role model is the most*
284 *important facilitator of the process'* (Participant 7)

285 **3.2. Ensuring integration**

286 Educators stated that the quality of labor and birth education could be improved by integrating
287 different teaching techniques into labor and birth education. These could include role plays,
288 animations, or material resources such as a cervical dilation ring:

289 *'Sometimes, if we are working with models, I scream like a simulator, I push, they enjoy it*
290 *enormously, it's like role playing... they feel at ease, and thus they learn better'.
291 (Participant 9)*

292 *'I have students prepare some of the materials. For example, I get them to make a cervical*
293 *dilation ring from cardboard and they always carry it in their pockets... I allow them to*
294 *choose the material according to their financial means...'* (Participant 1)

295 Some also referred to how the development of skills needed to be gradual over time, from the
296 simple to the complex:

297 *'Midwifery should be taught gradually in the course of the entire education, not in one*
298 *semester only, there should be goals for midwifery teaching at all levels going from simple*

299 *to complex. For example, they should learn communication in the first year, supportive care*
300 *and empathy in the second year, assisted birth in the third year, and integrating all these*
301 *skills in the fourth year to be able to manage the birth process'. (Participant 4)*

302 **3.3. Using support resources**

303 Educators stated that the support of their respective institution's administration, inter-agency
304 cooperation and in-service training aiming to translate current information into practice are
305 crucial in improving the quality of labor and birth education. One participant referred to how
306 support from her institution in terms of clear processes, encouragement and opportunities for
307 personal development would translate into 'better' quality education:

308 *'If the management provides support to clear the path, we move forward more easily*
309 *and faster... The guidance and encouragement of the management increases our*
310 *motivation. This includes supporting the personal development of the educator. Because*
311 *my personal development would translate into better quality of labor and birth*
312 *education'. (Participant 3)*

313 Another emphasized the importance of joint training events with students and professionals
314 from the maternity units to help facilitate cooperation and collaborative practices:

315 *'We train the student, but to ensure integrity, it is equally very important that the*
316 *childbirth team at the institution where the student goes for placement update their*
317 *knowledge, that in-service trainings be conducted in cooperation to ensure mutual*
318 *benefit, and that joint projects be conducted ... The student works with that team in*
319 *placement, so we need to cooperate with them'. (Participant 9)*

320 Some of the participants also underlined the importance of regularly receiving feedback from
321 students, internal and external stakeholders to improve the quality of labor and birth education.

322 *'The most important pillar that is often overlooked when evaluating labor and birth*
323 *education is the student. Therefore, evaluation should include external stakeholders,*
324 *lecturers responsible for the course, clinical guides and students...' (Participant 2)*

325 **DISCUSSION**

326 This study found that changing policies, philosophies, individuals, and cultures affect labor and
327 birth education and that information and sources of information as well as individual and
328 systemic factors create opportunities or obstacles for the quality of labor and birth education.
329 To improve the quality of labor and birth education, the participants in this study suggested that
330 the individual achievements of students should be improved, and the curriculum should be
331 updated effectively.

332 It is known that the perceptions of women, families and health professionals influence childbirth
333 processes and caesarean section rates (Latifnejad-Roudsari et al., 2014; Sercekus et al., 2015;
334 Long et al., 2018). The perceptions, experiences, and feelings of those working in the obstetric
335 environment, including midwifery students, are an important factor in providing the
336 psychosocial support needed by the woman who is at the center of the birth, and in perceiving
337 the birth positively or negatively (Dooris and Rocca-Ihenacho, 2019). In this study, the
338 participants underlined the importance of students preparing themselves mentally and
339 emotionally for birth and gaining self-confidence, awareness, empathy, professional ethics, a
340 sense of professional belonging and commitment in instilling positive childbirth perception into
341 students. Several studies have emphasized that positive perceptions of birth are possible through
342 the adoption of professional and birth-related philosophies and values (e.g., hypnobirthing,
343 Lamaze, etc.) that preserve naturalness and physiology (Regan and Liaschenko, 2007; Homer
344 et al., 2014; Renfrew et al., 2014; ten Hoop-Bender et al., 2014; Van Lerberghe et al., 2014;
345 Betran et al. 2018). While the participants considered that changes in information and policies
346 were integrated into the curriculum, this was insufficient to enact change. They argued how
347 there needed to be associated changes in philosophies and beliefs for the new information to be
348 meaningfully delivered, but as yet there is a lack of guidance as to how this can be achieved.
349 The importance of designing labor and birth education with quality and updated curricula was
350 underlined with a view to increasing positive childbirth experiences in the present and in the
351 future (Renfrew et al., 2014). Basically, it is important for midwifery educators to structure the
352 curriculum in line with updated knowledge and practices (West et al., 2016). In the new training
353 modules, it is important to develop the leadership, empowerment, rhetoric, communication,
354 advocacy, and critical thinking skills of midwifery students and to provide personalized care at
355 birth (Zondag et al. 2022; Thompson et al., 2019). However, the lack of evidence around labor
356 and birth education is the largest obstacle to this process. Therefore, the development of
357 directives and guidelines for labor and birth education and the evaluation of their effectiveness
358 through research would facilitate developing a positive perception of childbirth and improving
359 the quality of labor and birth education.

360 Recently, midwifery educators are making substantial efforts to use different methods to
361 provide Generation Z learners with the necessary competencies to enable them to offer targeted
362 childbirth care and support (Bharj et al., 2016). These are important triggers in the
363 reconsideration of curricula and allow for changes in educational processes (Hundley et al.,
364 2018; McDonald et al., 2018). In line with the wider research, we found that some educators
365 were optimistic about these changes, whereas others were pessimistic about the increased use

366 of technology and its implications for perinatal care (Roundtable Discussion, 2018). In this
367 study, the educators stated that they lacked access to technology-based labor and birth education
368 laboratories, they made efforts to deliver targeted skills with different educational materials
369 they designed themselves, and they added supporting courses for fine motor skills and personal
370 development achievements to the curriculum. It is reported that today's students, who are
371 considered as the internet generation, are more active and self-motivated with the use of
372 technology in online learning environments and face-to-face environments (Evans and Forbes,
373 2012). It is emphasized that new generation of students e-book, web2.0, mobile computing,
374 cloud computing etc. its use has an important place in meeting learning needs (Liebowitz,
375 2013). In addition, it is emphasized that z generation students need a mentor instead of learning
376 through new experiences independently, and it is reported that vocational training given in small
377 groups with mentor and cooperation will provide more benefits (Plochocki, 2019). Previous
378 research found that technology-based laboratories provide nurse and midwife students with
379 reproducible learning opportunities in an accessible and safe environment and enable students
380 to graduate as competent and qualified practitioners (Fealy et al., 2019). However, in midwifery
381 education where the number of students is high, all these equipment require a serious budget.
382 Therefore, allocating a national/international budget for quality labor and birth education,
383 especially in countries with high caesarean rates (OECD, 2019), could provide much-needed
384 support in improving birth-related outcomes. The use of cost-effective innovative alternatives
385 could also facilitate this.

386 In this study, some participants considered that the achievement of targeted competencies in
387 labor and birth education is challenged due to the large number of students, the absence of
388 regulations about the status of students in practice, the lack of sufficient equipment and skills
389 for midwifery educators, limited self-development opportunities for educators and inadequate
390 infrastructure in learning settings. In particular, the large number of students and lack of
391 regulations regarding the status of the student limit potential benefits from labor and birth
392 education. Malpractice lawsuits are becoming increasingly common in Turkey, and measures
393 are being taken to prevent malpractices (Türkmen and Ekti Genç, 2017). For this reason,
394 obstetricians are cautious about having students practice. The absence of a basis for student
395 status also hinders midwifery educators and students in gaining personal experience and
396 negatively affects their qualifications. Students receiving quality labor and birth education
397 directly affect maternal–infant health after graduation, and this could only be possible through
398 training provided by qualified educators (Renfrew et al., 2014).

399 Researchs has emphasized that for the teaching of quality perinatal care in midwifery, there
400 should be a sufficient number of midwifery educators, and the educator should be
401 knowledgeable about evidence, midwifery science and philosophy (Hundley et al., 2018;
402 Thompson et al.,2019). The lack of qualified educators threatens the sustainability of the
403 improvement in perinatal outcomes (Nyoni and Botma, 2018). However, many educators state
404 that they have difficulties in achieving individual competencies and improving their
405 qualifications (Barger et al., 2019). To remedy these deficiencies, it is emphasized that
406 healthcare institutions, healthcare providers, policymakers and researchers should make
407 concerted efforts in developing policy and management interventions related to midwifery
408 (Shorey et al., 2021). In addition, this goal can be achieved by the presence of educators who
409 train qualified birth team members in decision-making mechanisms (Hundley et al., 2018).
410 Therefore, investment in midwifery educators would be one of the cost-effective approaches to
411 improving the outcomes for the health of women and newborns. Another pillar that affects the
412 quality of labor and birth education is the quality and support of clinical learning settings. In
413 this study, it was emphasized that theoretical education provided in Turkey is of good quality,
414 but the supportive factors of the clinical learning setting remain insufficient. Collaborative
415 approaches of institutional leaders in school-hospital cooperation and interdisciplinary
416 cooperation in learning settings are opportunities that could improve the quality of labor and
417 birth education (Saxell at al., 2009; Bogren et al., 2021). Childbirth requires teamwork,
418 therefore multidisciplinary interaction in education plays a role in raising awareness around
419 childbirth management and prevents confusion of roles (Shaw-Battista et al., 2015). Clearly
420 defined roles within the childbirth team in clinical learning settings, interactions in inter-
421 professional perceptions and paradigms of childbirth and the application of midwifery models
422 instead of medicalization positively affect labor and birth education (Barger et al., 2019).
423 Therefore, investing in clinical learning environments in improving the quality and
424 sustainability of labor and birth education is not only an educational priority, but also a necessity
425 in meeting the increasing demands for birth services. It is also known that exchange programs
426 developed to benefit from different clinical settings are important opportunities for students to
427 graduate with required qualifications (Marshall, 2017). Institutions with limited opportunities
428 could also cooperate with other universities and thus support their students to meet achievement
429 goals. In addition, it can be suggested that midwifery educators benefit from exchange
430 programs so that they can look at birth education from a different perspective and gain different
431 experiences.

432

433 Suggestions for improving the quality of education include efforts for accreditation to ensure
434 standardization in education (Nove et al., 2018), reorganization of the educational environment
435 in a way that facilitates learning (Toosi et al., 2021), stronger collaboration with clinical settings
436 and governmental systems to solve current challenges (Barger et. al., 2019). Suggestions
437 derived from this research include efforts for increasing multi-faceted individual achievements
438 of students, integration between disciplines, institutions and courses and correct use of the
439 infrastructure and human resources. However, what is striking is that although respondents
440 provided data with varying degrees on the problems and threats in labor and birth education,
441 they provided very limited suggestions for solutions on barriers related to educators. It was also
442 stated that there should be training for trainers on issues related to midwifery. Previous research
443 emphasizes that educators should go through periodical training in order to improve the quality
444 of education and update themselves on how to translate changing teaching techniques and
445 knowledge into practice (West et al., 2016; Barger et al., 2019; Bogren et al., 2021; Toosi et al.,
446 2021). Most universities in Turkey provide training updates for the development of educational
447 skills. The authors of this study observed that educators experience obstacles in integrating their
448 educational skills into midwifery knowledge and skill acquisition process but have limited
449 awareness of this obstacle.

450 Therefore, applied update trainings should be held periodically with all educators who deliver
451 labor and birth education. Maintaining the sustainability of education after graduation is likely
452 to positively affect not only labor and birth education, but also all contexts and systems related
453 to childbirth.

454 **Strengths and Limitations of the Research**

455 The most important feature of this study is that it is the first study to find out the views
456 of educators about how labor and birth should be taught to midwifery students, who are an
457 important member of the birth environment in Turkey. The fact that the participants consist of
458 educators from different regions of Turkey, in different age groups, with different opportunities
459 and education-training experience constitutes its other strength. The fact that the interviews in
460 this study were conducted and recorded by a midwifery educator may have been a limitation in
461 terms of data presentation. In addition, if the sample had included educators of different
462 occupational groups involved in the childbirth team, the data could have been more varied. It
463 is striking that the data obtained are systemic facilitators or barriers experienced by educators
464 rather than opinions about evidence-based teaching focusing on the nature of birth. Evidence in
465 the literature on how to teach childbirth, an experience that can be affected by many different

466 variables, is limited, which may have led to the fragmented and limited data obtained from the
467 participants. Although it is a limitation, it contains the message that this is a finding in itself
468 and that the literature should be supported by evidence for birth education.

469

470 **CONCLUSION**

471 Realizing, disseminating and implementing sustainable political, financial and professional
472 investments aiming at improving labor and birth education could provide a protective and cost-
473 effective improvement for the health of women and their families. Our research results
474 underline that labor and birth education should be based on philosophy and delivered with a
475 holistic curriculum, individual and cultural effects should be considered, resources should be
476 allocated for appropriate infrastructural support, knowledge and skills of educators should be
477 updated, and institutions and policies should be reorganized. Changing generational
478 characteristics in a changing world brings along new designs in vocational education.
479 Improvements can be achieved at individual and organizational levels in line with our findings
480 around students, educators and programmatic elements that may affect the quality of labor and
481 birth education. In order to have more technology-based laboratories in education processes, to
482 increase teaching accompanied by mentors, to maintain information up to date among
483 midwifery educators, it is necessary to increase national and international sharing (online or
484 face-to-face), and universities should allocate more resources to midwifery education.
485 Therefore, it is suggested that the awareness of educators should be increased, evidence-based
486 literature knowledge should be created, platforms should be created for knowledge and
487 experience sharing and policy makers and universities should be involved in these platforms to
488 increase resources.

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491 **Conflict of interest**

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496 **References**

497 Barger, M. K., Hackley, B., Bharj, K. K., Luyben, A., Thompson, J. B., 2019. Knowledge
498 and use of the ICM global standards for midwifery education. *Midwifery* 79, 102534.
499 <https://doi.org/10.1016/j.midw.2019.102534>

500 Betran, A. P., Torloni, M. R., Zhang, J. J., Gülmezoglu, A. M., 2016. World Health
501 Organization Working Group on Caesarean Section. WHO statement on caesarean section
502 rates. *BJOG* 123 (5), 667–670. <https://doi.org/10.1111/1471-0528.13526>.

503 Betrán, A.P., Temmerman, M., Kingdon, C., Mohiddin, A., Opiyo, Newton, T., Maria R.,
504 Zhang, J., Musana, O., Wanyonyi, S. Z., Gülmezoğlu, A.M., 2018. Interventions to reduce
505 unnecessary caesarean sections in healthy women and babies. *The Lancet*, 392 (10155). pp.
506 1358-1368. ISSN 0140-6736

507 Bharj, K. K., Luyben, A., Avery, M. D., Johnson, P. G., O'Connell, R., Barger, M. K.,
508 Bick, D., 2016. An agenda for midwifery education: Advancing the state of the world's
509 midwifery. *Midwifery* 33, 3–6. <https://doi.org/10.1016/j.midw.2016.01.004>

510 Bogren, M., Alesö, A., Teklemariam, M., Sjöblom, H., Hammarbäck, L., Erlandsson, K.,
511 2021. Facilitators of and barriers to providing high-quality midwifery education in South-East
512 Asia-An integrative review. *Women and Birth* S1871-5192(21)00109-8.
513 <https://doi.org/10.1016/j.wombi.2021.06.006>

514 Carr, M., Riesco, M. L., 2007. Rekindling of nurse-midwifery in Brazil: public policy and
515 childbirth trends. *Journal of Midwifery & Women's Health* 52 (4), 406–411.
516 <https://doi.org/10.1016/j.jmwh.2007.02.015>;

517 Dooris, M., Rocca-Ihenacho, L. 2020. in *Squaring the Circle: Normal birth research,*
518 *theory and practice in a technological age* ; ISBN: 9781780664408 ; Editors: Soo Downe,
519 Sheena Byrom, Pinter & Martin Limited, England.

520 Elo, S., Kyngäs, H., 2008. The qualitative content analysis process. *Journal of Advanced*
521 *Nursing* 62 (1), 107–115. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>

522 Evans, R. R., Forbes, L., 2012. Mentoring the ‘net generation’: Faculty perspectives in
523 health education. *College Student Journal* 46 (2), 397-402.

524 Fealy, S., Jones, D., Hutton, A., Graham, K., McNeill, L., Sweet, L., Hazelton, M., 2019.
525 The integration of immersive virtual reality in tertiary nursing and midwifery education: A
526 scoping review. *Nurse Education Today* 79, 14–19. <https://doi.org/10.1016/j.nedt.2019.05.002>

527 Gonçalves, R., Brigagão, J., Soares, G., 2018. Study circles in hospitals' obstetrics centers
528 as a teaching-learning strategy in midwifery education. *Midwifery* 61, 42–44.
529 <https://doi.org/10.1016/j.midw.2018.02.011>

530 Hall, D. J., Way, D. S., 2018. A discussion paper: Do national maternity policy reviews
531 take account of the education and training of the future midwifery workforce? An example from
532 England. *Midwifery* 62, 278–280. <https://doi.org/10.1016/j.midw.2018.03.019>

533 Homer, C. S., Friberg, I. K., Dias, M. A., ten Hoop-Bender, P., Sandall, J., Speciale, A.
534 M., Bartlett, L. A., 2014. The projected effect of scaling up midwifery. *Lancet (London,*
535 *England)* 384 (9948), 1146–1157. [https://doi.org/10.1016/S0140-6736\(14\)60790-X](https://doi.org/10.1016/S0140-6736(14)60790-X)

536 Houghton, C., Murphy, K., Shaw, D., Casey, D., 2015. Qualitative case study data
537 analysis: an example from practice. *Nurse Researcher* 22 (5), 8–12.
538 <https://doi.org/10.7748/nr.22.5.8.e1307>

539 Hundley, V., Cadée, F., Jokinen, M., 2018. Editorial midwifery special issue on
540 education: A call to all the world's midwife educators!. *Midwifery* 64, 122–123.
541 <https://doi.org/10.1016/j.midw.2018.06.013>

542 International Confederation of Midwives., 2019. Essential Competencies for Midwifery
543 Practice 2018 UPDATE. Retrieved from:
544 [https://www.internationalmidwives.org/assets/files/general-files/2019/02/icm-](https://www.internationalmidwives.org/assets/files/general-files/2019/02/icm-competencies_english_final_jan-2019-update_final-web_v1.0.pdf)
545 [competencies_english_final_jan-2019-update_final-web_v1.0.pdf](https://www.internationalmidwives.org/assets/files/general-files/2019/02/icm-competencies_english_final_jan-2019-update_final-web_v1.0.pdf)

546 Latifnejad-Roudsari, R., Zakerihamidi, M., Merghati-Khoei, E., Kazemnejad, A., 2014.
547 Cultural perceptions and preferences of Iranian women regarding cesarean delivery. *Iranian*
548 *Journal of Nursing and Midwifery Research* 19 (7 Suppl 1), S28–S36.

549 Liebowitz, J., 2013. A comparative study of emerging technologies for online courses.
550 *Distance Learning*, 10 (3), 1- 11.

551 Long, Q., Kingdon, C., Yang, F., Renecke, M. D., Jahanfar, S., Bohren, M. A., Betran, A.
552 P., 2018. Prevalence of and reasons for women's, family members', and health professionals'
553 preferences for cesarean section in China: A mixed-methods systematic review. *PLoS Medicine*
554 15 (10), e1002672. <https://doi.org/10.1371/journal.pmed.1002672>

555 Luyben, A., Barger, M. K., Avery, M. D., Bick, D., 2018. What is next? Midwifery
556 education building partnerships for tomorrow's maternal and neonatal health care. *Midwifery*
557 64, 132–135. <https://doi.org/10.1016/j.midw.2018.06.014>

558 Marshall, J. E., 2017. Experiences of student midwives learning and working abroad in
559 Europe: The value of an Erasmus undergraduate midwifery education programme. *Midwifery*
560 *44*, 7–13. <https://doi.org/10.1016/j.midw.2016.10.013>

561 McDonald, E. W., Boulton, J. L., Davis, J. L., 2018. E-learning and nursing assessment
562 skills and knowledge - An integrative review. *Nurse Education Today* *66*, 166–174.
563 <https://doi.org/10.1016/j.nedt.2018.03.011>

564 Moller, A.B., Welsh, J., Ayebare, E., Chipeta, E., Gross, M.M., Hounbo, G., et al.,
565 2022. Are midwives ready to provide quality evidence-based care after pre-service training?
566 Curricula assessment in four countries—Benin, Malawi, Tanzania, and Uganda. *PLOS Glob*
567 *Public Health* *2*(9), e0000605. <https://doi.org/10.1371/journal.pgph.0000605>

568 Nove, A., Pairman, S., Bohle, L. F., Garg, S., Moyo, N. T., Michel-Schuldt, M.,
569 Hoffmann, A., Castro, G., 2018. The development of a global Midwifery Education
570 Accreditation Programme. *Global Health Action* *11* (1), 1489604.
571 <https://doi.org/10.1080/16549716.2018.1489604>

572 Nyoni, C. N., Botma, Y. 2018., Sustaining a newly implemented competence-based
573 midwifery programme in Lesotho: Emerging issues. *Midwifery* *59*, 115–117.
574 <https://doi.org/10.1016/j.midw.2018.01.015>

575 Organisation for Economic Co-operation and Development., 2019. Caesarean section
576 rates. In: *Health at a Glance 2019: OECD Indicators*. Retrieved from:
577 https://ec.europa.eu/health/sites/default/files/state/docs/2020_healthatglance_rep_en.pdf

578 Plochocki, J.H., 2019. Several ways generation z may shape the medical school
579 landscape. *Journal of Medical Education and Curricular Development*, *6*, 1–4.

580 Regan, M., Liaschenko, J., 2007. In the mind of the beholder: Hypothesized effect of
581 intrapartum nurses' cognitive frames of childbirth cesarean section rates. *Qualitative Health*
582 *Research* *17* (5), 612–624. <https://doi.org/10.1177/1049732307301610>

583 Renfrew, M. J., McFadden, A., Bastos, M. H., Campbell, J., Channon, A. A., Cheung, N.
584 F., Silva, D. R., Downe, S., Kennedy, H. P., Malata, A., McCormick, F., Wick, L., Declercq,
585 E., 2014. Midwifery and quality care: findings from a new evidence-informed framework for
586 maternal and newborn care. *Lancet (London, England)* *384* (9948), 1129–1145.
587 [https://doi.org/10.1016/S0140-6736\(14\)60789-3](https://doi.org/10.1016/S0140-6736(14)60789-3)

588 Roundtable Discussion., 2018. The future of midwifery education: a global perspective.
589 *Midwifery* *65*, 82. <https://doi.org/10.1016/j.midw.2018.05.011>

590 Sandall, J., Tribe, R. M., Avery, L., Break, G., Visser, G. H., Homer, C. S., Gibbons, D.,
591 Kelly, N. M., Kennedy, H. P., Kidanto, H., Taylor, P., Temmerman, M., 2018. Short-term and
592 long-term effects of caesarean section on the health of women and children. *Lancet (London,
593 England)* 392 (10155), 1349–1357. [https://doi.org/10.1016/S0140-6736\(18\)31930-5](https://doi.org/10.1016/S0140-6736(18)31930-5);

594 Saxell, L., Harris, S., Elarar, L., 2009. The Collaboration for Maternal and Newborn
595 Health: interprofessional maternity care education for medical, midwifery, and nursing
596 students. *Journal of Midwifery & Women's Health* 54 (4), 314–320.
597 <https://doi.org/10.1016/j.jmwh.2009.03.017>

598 Serçekuş, P., Egelioglu Cetisli, N., İnci, F. H., 2015. Birth preferences by nulliparous
599 women and their partners in Turkey. *Sexual & Reproductive Healthcare* 6 (3), 182–185.
600 <https://doi.org/10.1016/j.srhc.2015.03.002>

601 Shaw-Battista, J., Belew, C., Anderson, D., van Schaik, S., 2015. Successes and
602 challenges of interprofessional physiologic birth and obstetric emergency simulations in a
603 nurse-midwifery education program. *Journal of Midwifery & Women's Health* 60 (6), 735–743.
604 <https://doi.org/10.1111/jmwh.12393>

605 Shorey, S., Ng, E. D., Downe, S., 2021. Cultural competence and experiences of
606 maternity health care providers on care for migrant women: A qualitative meta-synthesis. *Birth*
607 *(Berkeley, Calif.)* 10.1111/birt.12581. Advance online publication.
608 <https://doi.org/10.1111/birt.12581>

609 Streubert, H. J., Carpenter, D. R., 2011. Qualitative research in nursing. 5th ed. Lippincott
610 Williams & Wilkins, China.

611 ten Hoope-Bender, P., de Bernis, L., Campbell, J., Downe, S., Fauveau, V., Fogstad, H.,
612 Homer, C. S., Kennedy, H. P., Matthews, Z., McFadden, A., Renfrew, M. J., Van Lerberghe,
613 W., 2014. Improvement of maternal and newborn health through midwifery. *Lancet (London,
614 England)* 384 (9949), 1226–1235. [https://doi.org/10.1016/S0140-6736\(14\)60930-2](https://doi.org/10.1016/S0140-6736(14)60930-2)

615 Thompson, M.Z., Nieuwenhuijze, M.J., Low, K.L., Vries, R. A., 2019. Powerful
616 midwifery vision: Dutch student midwives' educational needs as advocates of physiological
617 childbirth. *Women and Birth*, 32(6), e576-e583.

618 Toosi, M., Modarres, M., Amini, M., Geranmayeh, M., 2021. A survey of midwifery
619 graduates' opinions about midwifery education in Iran: a cross-sectional study. *BMC Medical
620 Education* 21(1), 340. <https://doi.org/10.1186/s12909-021-02764-y>

621 Türkmen H., Ekti Genç R., 2017. Midwifery and malpractice in the neonatal. *Journal of
622 Anatolia Nursing and Health Sciences* 20, 154–159.

623 Vaismoradi, M., Turunen, H., Bondas, T., 2013. Content analysis and thematic analysis:
624 Implications for conducting a qualitative descriptive study. *Nursing & Health Sciences* 15(3),
625 398–405. <https://doi.org/10.1111/nhs.12048>.

626 Van Lerberghe, W., Matthews, Z., Achadi, E., Ancona, C., Campbell, J., Channon, A., de
627 Bernis, L., De Brouwere, V., Fauveau, V., Fogstad, H., Koblinsky, M., Liljestrand, J., Mechbal,
628 A., Murray, S. F., Rathavay, T., Rehr, H., Richard, F., Hoope-Bender, P., Turkmani, S. 2014.
629 Country experience with strengthening of health systems and deployment of midwives in
630 countries with high maternal mortality. *Lancet* (London, England) 384 (9949), 1215–1225.
631 [https://doi.org/10.1016/S0140-6736\(14\)60919-3](https://doi.org/10.1016/S0140-6736(14)60919-3)

632 West, F., Homer, C., Dawson, A., 2016. Building midwifery educator capacity in teaching
633 in low and lower-middle income countries. A review of the literature. *Midwifery* 33, 12–23.
634 <https://doi.org/10.1016/j.midw.2015.06.011>

635 World Health Organization., 2016. Strengthening quality midwifery education WHO
636 meeting report 25-26 July 2016. World Health Organization, Geneva. Retrieved from:
637 [http://www.who.int/maternal_child_adolescent/documents/strengthening-quality-midwifery-](http://www.who.int/maternal_child_adolescent/documents/strengthening-quality-midwifery-education/en/)
638 [education/en/](http://www.who.int/maternal_child_adolescent/documents/strengthening-quality-midwifery-education/en/)

639 Yıldırım, A., Simsek, H., 2011. Qualitative research methods in social sciences. 8th Ed.
640 Ankara: Seckin Publishing.

641 YÖK Program Atlas. 2020. All Universities with Midwifery Program. Access:
642 <https://yokatlas.yok.gov.tr/lisans-bolum.php?b=10247>

643 YÖK Vocational Atlas. 2021. Higher Education Quota, Preference and Placement
644 Statistics. Access: <https://yokatlas.yok.gov.tr/meslek-lisans.php?b=10247>;
645 <https://istatistik.yok.gov.tr/>

646 Zondag, D.C., Van Haaren-Ten Haken., Offerhaur, P.M., Maas, V.Y.F., Nieuwenhuiize,
647 M.J. 2022. Knowledge and skills used for clinical decision-making on childbirth interventions:
648 A qualitative study among midwives in the Netherlands. *Eur J Midwifery*, 6, 56.