

Challenges for Midwives' Healthcare Practice in the Next Decade: COVID-19 – Global Climate Changes – Aging and Pregnancy – Gestational Alcohol Abuse

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Abstract

Midwives are multifaceted healthcare professionals whose competence spectrum includes a large variety of knowledge and skills going from antenatal care to education and research. The aim of this review is to suggest the future challenges midwives are going to face in the upcoming decade of this Century. COVID-19 and other infections will reasonably impact healthcare workers all over the world. Midwives are frontline healthcare professionals who are constantly at risk of contagion as their job implies close contact with women, physical support and hand touch. Also, menstruation waste plays a large role in the pollution of waters, severely impacting hygiene in the developing countries and fueling climate change. Appropriate disposal of used menstrual material is still insufficient in many countries of the world especially because of lack of sanitary education on girls. As educators, midwives will be more involved into preventing inappropriate disposal of menstrual hygiene devices by educating girls around the world about the *green* alternatives to the commercial ones. Despite the evidences about the fertility decrement that occurs with aging, women keep postponing reproduction and increasing their chance being childless or suffering complications related to the advanced maternal age. Teen pregnancies are as well an important issue for midwives who will be called to face more age-related issues and use a tailored case to case approach, enhancing their family planning skills. Another crucial role of midwifery regards the information about the risk of drinking alcohol during gestation. Alcohol assumption during pregnancy is responsible for serious damage to the fetus causing a wide range of pathological conditions related to Fetal Alcoholic Spectrum Disorder, leading cause of mental retardation in children of western countries. On the whole, midwives have demonstrated their willingness to expand their practice through continuing professional development, and through specialist and advanced roles especially in preventive and educational positions. *Clin Ter 2021; 172 (1):e30-36. doi: 10.7417/CT.2021.2277*

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Midwives

Midwives are healthcare professionals who provide care to women during pregnancy, labour, and postpartum, as well as the newborn. Midwifery includes measures aimed at preventing health problems in pregnancy, the detection of abnormal conditions, the procurement of medical assistance when necessary, and the execution of emergency measures in the absence of medical help (1). Midwives are also involved in research, health education, promotion of healthy lifestyles and prevention of smoking, alcohol and drug abuse (2) (Fig. 1).

WHO entitled 2020 as the “International Year of the Nurse and Midwife” (3), acknowledging the importance of their roles for healthcare around the globe. Midwives healthcare activity over girls, women and new families is going to be more demanding in the future, especially considering the new challenges that will affect our World in the upcoming years. Infections, global warming, aged motherhood and alcohol drinking women are only a few of the issues that midwives are going to face in the next decade whose first signs are clearly visible nowadays.

In fact, 2020 is also the year of SARS-CoV-2 (4,5) causing the COVID-19 pandemic which is severely impacting all the healthcare workers both in their professional and private lives, often urging them to self-isolate themselves to protect their loved ones (6–8). All over the world several midwives died because of COVID-19 and several of them got infected while working. Midwives are frontline healthcare professionals who are constantly at risk of contagion. In fact, midwives' job implies close contact with women, physical support and hand touch, which was proved beneficial for pain relieve (9). Midwives' job has been highly impacted by COVID-19, as it implies social distancing, no touch and use of face masks and gloves. New protocols had to be studied by Governors and Healthcare Institutions to allow midwives continue supporting women while keeping themselves safe in such ever-changing context. We highly believe midwives

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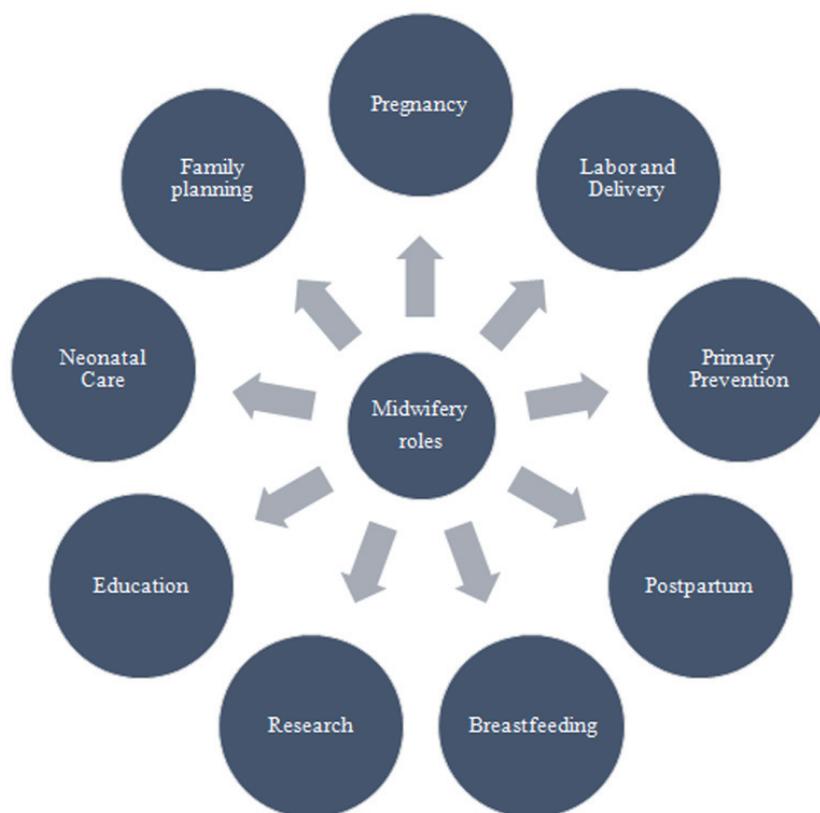


Fig. 1. Roles of Midwives in stand-alone positions or in multidisciplinary teams

to be resilient and tireless healthcare professionals, capable to efficiently support women even in difficult circumstances but their job is going to be extremely modified by the new challenges that the World is going to face ahead.

The aim of this short review is to hypothesize what would be the future challenges for midwives' job in the upcoming decade of this Century.

COVID-19

SARS-CoV-2, firstly isolated in Wuhan, Hubei Region, China at the end of 2019 (4,5) causes COVID-19 respiratory illness that predominantly affects the lungs. Based on current evidence, the COVID-19 virus is transmitted between people through droplets, fomites and close contact, with possible spread through feces and it is not airborne (10). SARS-CoV-2 refers to the viral causative agent responsible for SARS, also known as 2019 Wuhan novel coronavirus. The term SARS is the acronym for "Severe Acute Respiratory Syndrome" (11).

Although COVID-19's pandemic spread curves are showing a decreasing tendency in Europe (12), it is highly probable that humans will be living together with SARS-CoV-2 for some more time in the near future and midwives should be properly trained to deal with COVID-19 positive women and continue supporting them effectively.

Midwives should be aware that main COVID-19 signs and symptoms, such as fever, cough, sore throat, dyspnea might be mild during pregnancy and atypical symptoms like abdominal pain could be displayed (13). Midwives who works in emergency rooms, triage stations or first welcoming services should complete a fast pre-triage anamnesis for COVID-19, check body temperature, oxygen saturation and blood pressure (14). Use of disposable personal protection equipment (PPE), such as face masks and gloves, is highly recommended even with pre-triage negative patients to reduce the risk of contagion (15). The International Federation of Gynaecology and Obstetrics (FIGO) recently published a guidance on COVID-19 infection in pregnancy and puerperium (16). The contents of this guide refer to what is recommended by the main international health agencies that deal with SARS-CoV-2 epidemic in pregnancy. The document presents organizational and care modalities in the outpatient setting, in obstetric triage, during intrapartum care of women with confirmed or suspected COVID-19 infection and during assistance to the puerperium and the newborn.

COVID-19 and Delivery

A review conducted on 13 articles and 37 pregnancies (17) showed that over the 37 women included, 29 underwent a caesarean section and 8 had a vaginal delivery.

According to the Royal College of Obstetrics and Gynaecology (RCOG), it is suggested for midwives to wear head-to-toe protections. The recommended PPE include face masks, disposable coats, gloves and protective glasses (18).

WHO and RCOG do not recommend elective caesarean section in women suspected to be infected with SARS-CoV-2 or COVID-19 positive (19). In fact, at the best of our knowledge, no sample of vaginal swab proved positive to SARS-CoV-2 (20). An effort should be made to reduce to the minimum the number of professionals who attend the birth and to allow the mother to have a person of trust near her during labor and delivery (19). Extra caution has to be paid to the fetal wellbeing using cardiotocography (CTG) (19).

Midwives are called to provide women with assistance, respect and privacy, trying to keep birth a safe and positive experience (21). Pain relief strategies, mobility during labor and choice of the birth position whenever possible should be guaranteed to women amidst COVID-19 condition.

COVID-19, Postpartum and Breastfeeding

Midwives should encourage breastfeeding after the birth. Breastfeeding is indeed highly beneficial for both mother and child and it is recommended starting as early as possible after the birth (22). Based on current scientific knowledge, breast milk of COVID-19 positive mothers proved safe and it should be administered to the baby. If maternal general conditions do not allow breastfeeding, she should be encouraged and supported to express breast milk and feed it to her child (23). If it is not possible, a donor's milk could be a good option (24). Midwives should support COVID-19 positive mothers in early breastfeeding their nurslings. In order to reduce the risk of transmission to the child, the Italian National Institute of Health (2020) advises preventive procedures, such as hand cleaning and the use of a face mask during feeds. Moreover, the RCOG suggests to keep mother and baby together, unless the mother is critically ill (25).

A multi-disciplinary approach, discussion and planning, should be arranged as soon as possible following admission of mothers with COVID-19 infection, involving a consultant physician (infectious disease specialist where available), consultant obstetrician, pediatrician, midwife-in-charge and consultant anesthetist responsible for obstetric care (19).

Global Warming and Water Pollution

The climate changes are one of the greatest threats the World is going to face in the next decades but its repercussions on health and healthcare are often downrated (26,27). The 2019 report of The Lancet Countdown on Health and Climate Change (28), has left no doubt about global warming and the dreadful effects it will have if it continues on its current path. The Lancet report (28) highlights extensive damage to health as a result of global warming, including increased burden of malnutrition, increased rates of infectious diseases, higher rates of respiratory disease because of air pollution, increased traumatic injury and subsequent hardship because of extreme weather events.

Menstruation Waste

Menstruation waste plays a large role in the pollution of waters. Menstruation wastes are defined as "Wastes that are generated by a female in her reproductive years" (29). These wastes are produced during menstruation and differ a lot depending on geographical area, personal preferences, social conformities, economic status, education, social and cultural believes (30). The choice of absorbents varies among rural and urban women and girls. In rural areas, the most preferred absorbents are reusable cloth pads while in urban areas women prefer to use commercial sanitary pads (30). Chlorine-bleached craft or sulphate pulp is used by manufacturers to produce a soft pulp as absorbent and chemicals like organochlorines are used as antibacterial. Due to their chemical composition, these products kill the soil's microflora when buried in the ground and the process of decomposition is delayed (31). Tampons are not easily degradable in nature as well and, hence, not very green.

Appropriate disposal of used menstrual material is still insufficient in many countries of the world. Lack of sanitary education on girls all around the world, especially over menstrual hygiene (32), leads most of the women to dispose of their sanitary pads or other menstrual articles improperly into domestic solid wastes or flushing into the toilets. In urban areas, where modern disposable menstrual products are available, they dispose of them by flushing in toilets (33), but, in rural areas, they are more likely buried, burned or thrown in latrines (30).

Nowadays, most of women prefers commercial sanitary pads and tampons which are made up of super absorbent materials like polyacrylate. These pads and tampons when flushed in the toilets they get saturated with liquid and swell up, thus resulting in leakage backflow causing a serious health hazard. Moreover, adhesive wings and the perforated plastic layers in the commercial sanitary napkins are not easily biodegradable. Deodorized sanitary products used by girls contain chemicals used in bleaching such as organochlorines which when buried in the soil disturb the soil microflora and decomposition takes time (31). People living alongside riverbanks throw menstrual waste into water bodies which contaminate them. These materials soaked with blood were breeding places for germs and pathogenic microbes (34). Incineration is a better technique to dispose of menstrual waste but burning of pads releases harmful gasses that effects health and environment. Burning of inorganic material at low temperature releases dioxins which are poisonous and oncogenic in nature.

As sanitary educators, midwives will be more involved into preventing inappropriate disposal of menstrual hygiene devices by educating girls around the world about the green alternatives to the commercial ones. Use of natural sponges, menstrual cups or washable pads would help reducing the impact every woman has on Earth every month, especially over the pollution of waterflows.

Age, Motherhood and Infertility

After the well-known 'baby boom' era, happened in the Western World between 50s and 60s of the last century, the

fertility rate has constantly dropped down (35). According to Italian CedAP Report (36) the mean age of primiparous mothers is increased to 32.8 years old for Italian citizens and 30.2 for non-Italian citizens. Similar data can be found in the US (37,38) and Canada (39). This rise in the age of the first pregnancy may be related to the augmentation of life expectancy over time, around 80 in Europe between 2020 and 2025 (40) but it might be related also with economic, social issues, personal choices or even social pressure (35).

Despite the evidences about the fertility decrement that occurs with aging, women frequently overestimate the age at which a significant decline in fertility occurs and overestimate the success of assisted reproductive technologies. Postponing reproduction can increase the chance of a woman remaining involuntarily childless, as well as an increase in complications during pregnancy in those that do achieve pregnancy at advanced maternal age (41).

Mothers over 35 years of age are more at risk of developing hypertension, preeclampsia, diabetes, intra-uterine-growth-restriction, placenta previa, placental abruption, operative deliveries and caesarean sections (42–45). Moreover, those mothers are more likely to conceive a fetus with genetic impairments: in fact, aged motherhood is a well-known risk factor of conceiving a baby with Down Syndrome as Trisomy 21 and mosaicism are not inherited, but originate from errors in cell divisions during the development of the egg, sperm or embryo (46).

By the other hand, teenage mothers in Italy are around 3‰ with prevalence in the Southern regions where they are around 10‰ (47). Although the teen birth rate declined 64% between 1991 and 2015 from 61.8 to 22.3 per 1,000 female adolescents aged 15–19 years (48,49), the United States continues to have one of the highest teen pregnancy rates among developed nations (50), and racial/ethnic and geographic disparities in teen birth rates persist (51). Those mothers and their children often face poorer prospects in life than women who delay motherhood. Early sexual experiences are an important predictor of early fertility, as is poor educational accomplishments. Family background is also powerfully influential on teenage fertility as the most important factor determining the chances of teenage motherhood seems to be the quality of communication about sexual matters. Teenage mothers are more likely to live in social housing, are less likely to be in paid employment and have larger than average sized families. Children of teenage mothers are more likely to experience early parenthood themselves, entering a cycle of social vulnerability. Primary preventive efforts will be needed to reduce the rates at which teenage pregnancy occurs so to reduce the cycle that means the children of young mothers themselves enter parenthood early. Then, efforts must also be made to mitigate the effects of teenage fertility for both mother and children (52).

Midwives will be more and more involved in providing aged mothers with assistance they need. Midwives should be educated to face more age-related issues and use a tailored case to case approach. Moreover, midwives will be called to action as family planning consultants, especially supporting teenage moms and their children.

Alcohol Abuse and Gestation

Alcohol misuse can be considered one of the most relevant challenges in the Western Countries (53–62). Indeed, around 2.3 billion people in the world drink alcoholic beverages (63) that may induce physiological and cognitive disruptions (64,65) and more than 3 million people died as a result of harmful use of alcohol in 2016 (63). It is well known that women are physiologically more vulnerable to the effects of alcohol and drinking alcohol during pregnancy exposes the unborn child to a toxic substance to which the fetus has no tolerance (66). Indeed, alcohol assumption during pregnancy is responsible for serious damage to the fetus causing a wide range of pathological conditions like miscarriage (67–69), stillbirth (69,70), morphology (71) and growth impairments (72), premature birth (69,70) and neonatal sequelae related to Fetal Alcoholic Spectrum Disorder (FASD) (73,74).

Alcohol can also disrupt metabolism of neurotrophins which are a family of proteins influencing the proliferation, differentiation, survival and death of neuronal and non-neuronal cells (75–81) which are also responsible of neuroprotection in mammals (82) as also shown in animal models (79,81,83–88). This condition can result in physical abnormalities and neurodevelopmental impairments such as typical facial deformities (89), behavioral disorders (90), and poor performances at school (91). Fetal Alcohol Syndrome (FAS) is a completely avoidable form of developmental disability (92) resulting from alcohol consumption during pregnancy. Data from different study groups showed that even father's alcohol assumption is relevant in an animal model (88,93). Nowadays, it is not possible to establish a safe threshold of alcohol consumption, therefore, the safest recommendation for pregnant women and couples that are looking for a pregnancy (2,71,94,95) is to totally avoid alcohol use during pregnancy (96) and breastfeeding (97).

Midwives should take responsibility in spreading correct information, detecting signs of vulnerability and support women during pregnancy in order to prevent alcohol assumption. Midwives have demonstrated their willingness to expand their practice through continuing professional development, and through specialist and advanced roles. We do believe midwives could have a crucial function in the prevention of alcohol consumption during pregnancy in order to counteract or reduce the main cause of mental retardation in western countries.

Conclusions

Midwives are going to face new and complex challenges impacting their job during the upcoming decade of the Century. Covid-19 demonstrated that every healthcare professional should be properly trained dealing with infections and their spread.

Statistics showed an increase in aged motherhood and teen pregnancies which might be considered two faces of the same problem, urging midwives to address age-related problems and program interventions tailored on the single patient.

Climate change and its repercussions are too often ignored or downrated, but the effects of pollution on the Planet will inevitably affect health. Pollution of waters will be relevant for health especially in third world countries where water access is limited, and hygiene conditions are poor.

By the other hand, substance abuse during pregnancy is already burdening nowadays and it's a critical issue of our times. Around 2.3 billion people in the world drink alcoholic beverages (63) and more than 3 million people died as a result of harmful use of alcohol in 2016 (63). Midwives could effectively impact on the alcohol drinking mothers, educating them about the negative effects of alcohol assumption during pregnancy and preventing harmful behaviors.

Midwives are highly trained professionals who can efficiently sensitize people and educate women about the upcoming relevant issues of our times. They may have an impact over public health and climate just enhancing their interventions in the antenatal period, especially improving their roles in education and prevention. Although, they will need more political, institutional and financial support.

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