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The impact of criminalisation on abortion-related outcomes: a synthesis of legal and health evidence

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ABSTRACT

Abortion is criminalised to at least some degree in most countries. International human rights bodies have recognised that criminalisation results in the provision of poor-quality healthcare goods and services, is associated with lack of registration and unavailability of essential medicines including mifepristone and misoprostol, obstructs the provision of abortion information, obstructs training for abortion provision, is associated with delayed and unsafe abortion, and does not achieve its apparent aims of ether protecting abortion seekers from unsafe abortion or preventing abortion. Human rights bodies recommend decriminalisation, which is generally associated with reduced stigma, improved quality of care, and improved access to safe abortion. Drawing on insights from reproductive health, law, policy, and human rights, this review addresses knowledge gaps related to the health and non-health outcomes of criminalisation of abortion. This review identified evidence of the impacts of criminalisation of people seeking to access abortion and on abortion providers and considered whether, and if so how, this demonstrates the incompatibility of criminalisation with substantive requirements of international human rights law. Our analysis shows that criminalisation is associated with negative implications for health outcomes, health systems, and human rights enjoyment. It provides a further underpinning from empirical evidence of the harms of criminalisation that have already been identified by human rights bodies. It also provides additional evidence to support the WHO's recommendation for full decriminalisation of abortion.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Existing studies establish the impacts on abortion care, abortion seekers and abortion providers when abortion is criminalised. Meanwhile, doctrinal studies in international human rights law show increased awareness of the incompatibility of criminalisation with a range of rights including the right to privacy and the right to health.

WHAT THIS STUDY ADDS

⇒ Using an innovative methodology that integrates international human rights law and public health research, this study substantiates the material ways in which criminalisation impacts on abortion seekers and health workers and thus concretises human rights implications. It shows the impact of criminalisation not only of pregnant people who seek abortion, but across the spectrum of availing of, providing, and assisting with abortion care.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ This paper provides evidence of the incompatibility of criminalisation with aspirations for the maximisation of health outcomes and the realisation of human rights. In doing so, it demonstrates health and human rights imperatives for decriminalisation as a matter of legal and policy change.

INTRODUCTION

Criminalisation can be understood as the application of criminal law to some or all persons who seek, access, provide (including medication), assist with, are aware of, or believe someone to have accessed abortion (UN Special Rapporteur, paras. 21–36).[1] Where abortion is criminalised, the criminal law is used to regulate abortion, and those who have, provide, or support with availing of consensual abortion may be arrested, investigated and/or prosecuted (although in some settings the law is not actively applied). Abortion is criminalised in most countries.[2] In some settings general offences (such as manslaughter or murder) are applied to people who avail of, provide or assist with accessing abortion either in addition to offences specific to abortion or as a way of criminalising abortion in practice. In some settings having an abortion is a crime, while in others the pregnant person does not commit a crime but those who assist her or provide abortion to her do. Even in jurisdictions where abortion is available on broad grounds, abortion may still be criminalised or criminal sanctions may apply to other synonyms for abortion including 'termination of pregnancy', 'destruction of unborn human

life', 'procurement of a miscarriage' or 'menstrual regulation'.[2]

In many settings criminalisation of abortion is a legacy of 19th century regulatory approaches, often residual from colonial-era laws.[3] Criminalisation does not align with either the human rights of abortion seekers or providers, or the realities of contemporary abortion care, which is safe, effective and not harmful.[4] Key human rights institutions have stated that criminalisation results in the provision of poor-quality healthcare goods and services (UN Special Rapporteur, para. 32),[1] is associated with lack of registration and unavailability of essential medicines including mifepristone and misoprostol, obstructs the provision of abortion information (UN Special Rapporteur, paras. 21–36; Human Rights Committee),[1 5] obstructs training for abortion provision (UN Special Rapporteur, paras. 21–36),[1] is associated with delayed and unsafe abortion (UN Special Rapporteur, paras. 21–36; Human Rights Committee, para 20; Human Rights Council, paras. 93–95),[1 6 7] and does not achieve its apparent aims of either protecting abortion seekers from unsafe abortion or preventing abortion.[1 6 7] Meanwhile, public health scholars generally associate decriminalisation with reduced stigma, improved quality of care and improved access to safe abortion.[8]

There is now a consensus in international human rights law that criminal abortion laws jeopardise the health and life of abortion seekers (UN Special Rapporteur; Human Rights Committee, para. 8; CEDAW Committee, para. 31(c)),[1 9 10] are discriminatory (Human Rights Council, paras. 46, 50, 90; Human Rights Council, paras. 49–51),[11 12] and violate human rights protections (Human Rights Council, paras. 93–95).[7] As a result, human rights institutions increasingly take the view that abortion should be decriminalised.[13–15] While these sources do not tend to provide a comprehensive definition of decriminalisation, when we speak of decriminalisation we refer to the full decriminalisation of abortion for women, providers and assistants through the removal of abortion and all abortion-related offences from the criminal law and penal code, and the non-application of other offences (like manslaughter or murder) to those who access, provide, or assist with availing of abortion.

In this review, we aim to address knowledge gaps that relate to health and non-health outcomes associated with the criminalisation of abortion. In particular, we seek to assess whether, how and to what extent evidence from included studies demonstrates empirically the rights violations that are associated with criminalisation. The review was designed in accordance with a methodology for integrating human rights in guideline development that we have described elsewhere.[16] This methodology is appropriate for complex interventions, including laws and policies, which may have have multiple components interacting synergistically, have non-linear effects, or are context dependent.[17] Complex interventions of this kind often interact with one another, meaning that outcomes related to one individual or community may be dependent on others, and that they might be positively or negatively impacted by the arrangements of people, institutions and resources within a larger implementation system.[17] This is one of seven reviews with the same methodological approach that was conducted as part of developing the evidence base for WHO's Abortion Care Guideline.[18]

Throughout this review, we use the terms women, girls, pregnant women (and girls), pregnant people and people interchangeably to include all those with the capacity for pregnancy.

METHODS

Patient and public involvement

The nature of this research did not require or enable the involvement of patients or the public, although criminalisation was identified as a law and policy intervention for consideration within the broader process of guideline development at a scoping meeting that took place in Geneva. The participants in this meeting are listed in the Abortion Care Guideline (WHO, p. 122).[18]

Identification of studies and data extraction

This review examined the impact of criminalisation on two populations: (1) people seeking abortion and (2) healthcare providers. Law, policy, and human rights scholars and practitioners worked together to develop the search strategy and outcomes of interest. We searched in English for a combination of MeSH terms and keywords.

Searches were conducted in PubMed, HeinOnline and JStor and the search engine Google Scholar. As the second edition of the WHO's Safe Abortion: technical and policy guidance for health systems (2012) included data up until 2010, we limited our search to papers published in English after 2010 to 2 December 2019. We undertook an updated search of the same databases in July 2021. We aimed to locate papers that included original data and analysis on the connections (direct and indirect) between criminalisation of abortion and our outcomes of interest. We included a wide range of study types, including (comparative and non-comparative) quantitative studies, qualitative and mixed-methods studies, reports, PhD theses and economic or legal analyses that undertook original data collection or analysis. Following a preliminary assessment of the literature,[19] we identified health and non-health outcomes of interest that could be linked to the effects of criminalisation. The identified outcomes of interest were delayed abortion, opportunity costs (understood widely as including, inter alia, financial and health harms), self-managed abortion, workload implications, system costs, perceived imposition on personal ethics or conscience, perceived impact on relationship with patient, referral to another provider, unlawful abortion, continuation of pregnancy, and stigmatisation.

There were six members of the review team (MF, AF, FdL, AC, MIR and AL). Two reviewers (MF and AF)

conducted an initial screening of the literature. Titles and abstracts were first screened for eligibility using the Covidence tool; full texts were then reviewed. A third reviewer (FdL) confirmed that these manuscripts met inclusion criteria. Two reviewers (FdL and AC) extracted data. Any discrepancies were reviewed and discussed with two additional reviewers (AL and MIR). The review team resolved discrepancies through consensus.

Consistent with our methodology for integrating human rights in reviews that underpin evidence bases for guideline development,[16] we analysed international human rights law relevant to reproductive rights to identify applicable (hard and soft) legal standards. These were standards that referred either expressly to the criminalisation of sexual and reproductive healthcare including abortion, or outlined states' general obligations vis-à-vis sexual and reproductive healthcare as they could be applied to the criminalisation of abortion. As described elsewhere,[16] this included a systematic analysis of sources such as treaties, general comments, opinions of treaty monitoring bodies and reports of special procedures. Having undertaken the searches and full-text review, we integrated the evidence from the studies and from international human rights law to develop a full understanding of the law and policy implications for our outcomes of interest of criminalisation of abortion. In applying human rights standards to the data extracted from these manuscripts, we sought to identify which human rights standards are engaged by criminalisation, and whether this evidence suggests that criminalisation has positive or negative effects on the enjoyment of rights. Where the manuscripts did not contain any data relevant to the outcomes of interest, we considered whether human rights law provided evidence that could further explicate the impacts and effects of criminalisation.

Analysis

Using evidence tables described in our methodology,[16] we presented data from the included studies as relevant to our outcomes of interest. In these tables, we presented both the association of each finding with the outcome of interest and an overall conclusion of the identified findings across the body of evidence. Following this, we applied the identified human rights standards to these outcomes thus combining the evidence from human rights law and the included studies to develop an understanding of the effects of criminalisation of abortion. This allowed us to assess whether the evidence from the included studies indicated effects of criminalisation that were incompatible with international human rights law.[16] Across all study designs, we used and applied a visual representation of effect direction to summarise the effect of the intervention, with symbols indicated whether the evidence extracted from a study suggested an increase (▲), decrease (▽), or no change (○) to the outcome of interest, but not indicating magnitude of the effect.[16]

RESULTS

The initial search generated 47 285 citations after duplicates were removed. We screened the titles and abstracts and conducted a full-text screening of 426 manuscripts. We excluded those manuscripts that did not have a clear connection with the intervention and our predefined outcomes, resulting in 28 manuscripts being included in the final analysis (figure 1).

Manuscripts described data from the following 19 settings: Australia,[20–22] Brazil,[23] Chile,[24 25] El Salvador,[26] Ethiopia,[27] Ireland[28–30] Lebanon,[31] Mexico,[32–37] Nepal,[38] Northern Ireland,[28 39] Palestine,[40] Philippines,[41] Rwanda,[42] Senegal,[43] Sri Lanka,[44] Tanzania,[27] Uganda,[45] Uruguay and[46 47] Zambia.[27] The characteristics of included manuscripts are presented in table 1. The included studies contained information relevant for the outcomes: delayed abortion[24 29 39] continuation of pregnancy,[32 36 46 47] opportunity costs,[21 22 24–26 28 29 31 33 37 39–44] self-managed abortion,[24 28 39 41] unlawful abortion,[24 28 31 35 37 39–42 44 45] criminal justice procedures against women[23 24 26 27 37 45] and healthcare professionals,[20 21 24 30 41 45] workload implications,[20 21 42 43] referral to another provider,[29 40] perceived impact on relationship with patient,[22 24 29] antiabortion 'sting' operations,[21 42] availability of trained providers,[21 29 41] reporting of suspected unlawful abortions,[23–27 29 35 41–43] and system cost.[24 29 31 32 34 36 38 40 41 45–47] No evidence was identified linking the intervention to the outcomes harassment of healthcare providers and stigmatisation of healthcare providers. As might be expected in a review of this kind, and as becomes clear in the results described below, some findings are repeated across outcomes of interest.

Impact of criminalisation on abortion seekers

A summary of the impacts of the intervention on abortion seekers and the application to human rights are presented in table 2. Evidence identified per study and outcome is presented in online supplemental table 1.

Evidence from three studies suggests that criminalisation contributes to abortion delay.[24 29 39] Specifically, healthcare professionals may delay provision where women are experiencing complications to be sure that they 'qualify' under limited exceptions to criminal offences.[29] One study also demonstrates that criminalisation complicates the care pathway by forcing women to travel out of country or rely on telemedicine services; care pathways on which medications may be confiscated during transport, delivery may be prolonged, and there may be resultant delays in accessing care.[39] While delay in accessing abortion does not per se constitute a human rights violation, delays associated with criminalisation may engage states' obligations to take steps to reduce maternal mortality and morbidity and to address delayed and unsafe abortion,[1 6 7] not least because of the requirement to ensure abortion regulation is evidence based and proportionate.[1] Evidence from four studies suggests that criminalisation indirectly contributes to increased continuation of pregnancy[32 36 46 47] by identifying the impact of

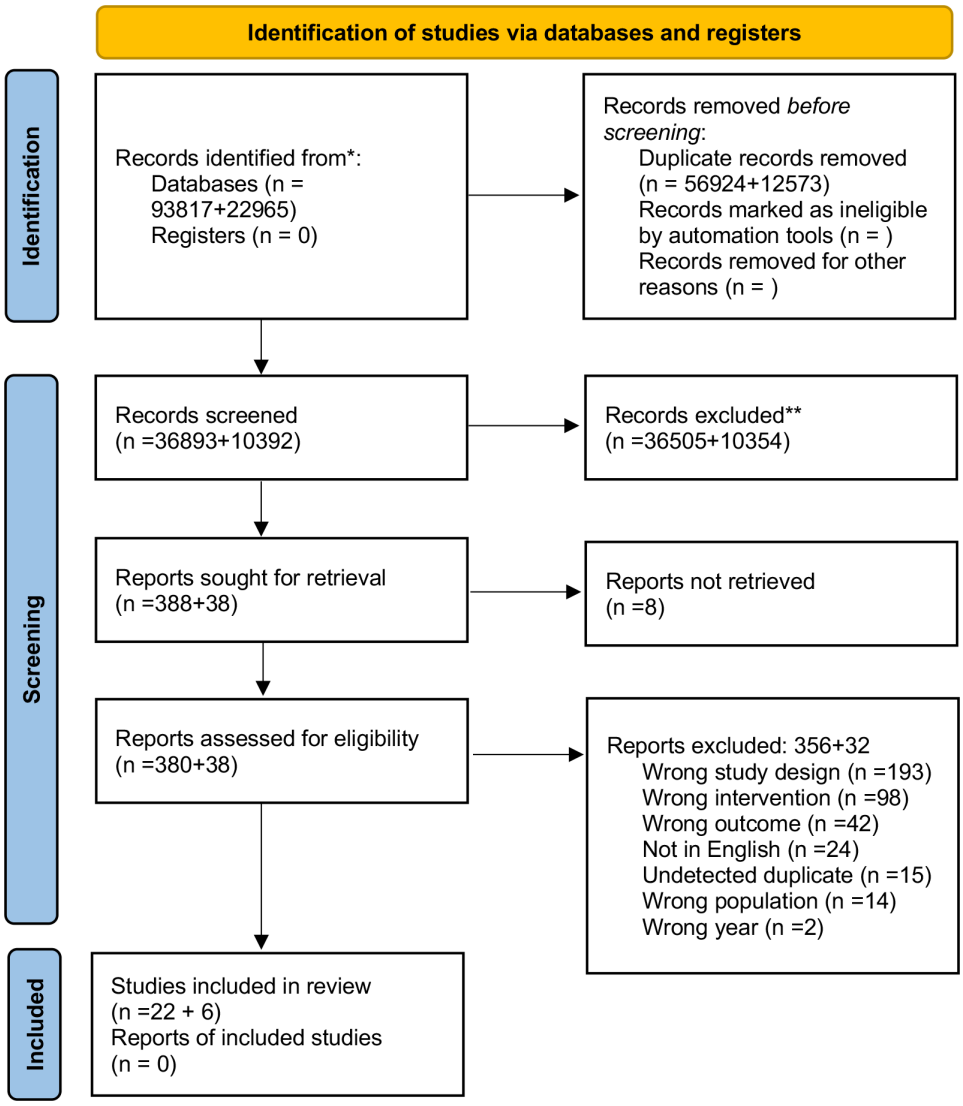

Figure 1 PRISMA flow diagram. *Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers). **If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools. From: Page et al.[62] PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

decriminalisation on birth rates. These studies suggest that decriminalisation is associated with decreased birth rates in women aged between 20 and 29,[36] 20 and 34,[47] and 15 and 44[32] years of age. One study identifies a more marked trend towards reduced fertility among adolescents following decriminalisation,[32] while another found little effect on adolescent birth rates in a setting where parental authorisation requirements continued to apply post-decriminalisation.[36] Evidence from one study suggests that decriminalisation was not associated with a change in adolescent birth rates.[46]

Evidence from 16 studies suggests that criminalisation contributes to opportunity costs. We understand opportunity costs widely as including travel to access abortion, delayed and poor-quality post-abortion care, distress, financial burdens, stigma and exploitation.[21 22 24–26 28 29 31 33 37 39–44] These opportunity costs impact disproportionately on certain populations of women and girls such as single women and women from socioeconomically disadvantaged groups[31] and those accessing care in public rather than private healthcare sectors.[25] Accordingly, the right to equality and non-discrimination in sexual and reproductive healthcare is engaged (Human Rights Council, paras. 46, 50, 90; CEDAW Committee, paras. 49–51),[11 12] and these differential impacts appear not to be proportionate or evidence based.[1] Additionally, two studies suggest that, despite generating fear among some pregnant women, criminalisation does not impact the decision to have an abortion.[37 44] Four studies suggest that criminalisation contributes to self-managed abortion,[24 28 39 41] which is sometimes unsafe[24 41] and sometimes unlawful,[24 28 39] while 11 studies suggest that it contributes to unlawful abortions,[24 28 31 35 37 39–42 44 45] some of which are unsafe and lead to death.[35] In one study, women reported avoiding seeking care from health facilities or trained providers

Table 1 Characteristics of included studies

Author/year	Country	Methods	Participants
Aiken *et al* 2019[39]	Northern Ireland, UK	Qualitative individual in-depth interviews (n=30).	Women in Northern Ireland who had sought an abortion by travelling to a clinic in Great Britain or by using online telemedicine to self-manage an abortion at home.
Aiken *et al* 2017[28]	Ireland and Northern Ireland, UK	Retrospective cohort study (n=5650).	Women living in Ireland and Northern Ireland utilising the online telemedicine services of Women on Web.
Aitken *et al* 2017[29]	Ireland	Cross sectional study (n=184).	Non-consultant hospital doctors training in Obstetrics and Gynaecology.
Antón *et al* 2016[46]	Uruguay	Times series design (n=not reported).	Data from the Perinatal Information System on births among women and girls below 20 years of age.
Antón *et al* 2018[47]	Uruguay	Times series design (n=93 762 births).	Data from the Perinatal Information System on planned and unplanned births.
Arambepola and Rajapaksa 2014[44]	Sri Lanka	Case control study (n=771).	Women admitted to hospitals due to unsafe abortion (cases) and delivery of an unintended term pregnancy (controls)
Blystad *et al* 2019[27]	Ethiopia, Tanzania, Zambia	Qualitative individual interviews (n=79).	Representatives of Ministries, religious organisations, non-governmental organisations, UN agencies, professional organisations, health workers, journalists and others
Casas and Vivaldi 2014[24]	Chile	Legal analysis and qualitative individual interviews (n=61).	Hotline providers, healthcare providers, women with experiences of 'illegal abortions', their friends, partners and relatives.
Casseres 2018[23]	Brazil	Legal analysis/commentary based on a legal analysis of 42 criminal lawsuits.	N/A.
Citizen's Coalition 2014	El Salvador	Legal case series (n=129) in which records from women who were prosecuted for abortion or aggravated homicide when fetal death occurred in the last months of the pregnancy.	N/A.
Centre for Reproductive Rights 2010	Philippines	Legal review/qualitative individual interviews (n=53).	Women with experiences of unsafe abortion, acquaintances of women who had died as a result from unsafe abortion, a range of key stakeholders including healthcare providers, lawyers, activists, counsellors, political leaders and law enforcement agents
Clarke and Mühlrad 2016[32]	Mexico	Times series design. Analysis of vital statistics data covering live births (n=23 151 080) and maternal deaths (n=11 858) among women aged 15–44.	N/A.
De Costa *et al* 2013[20]	Queensland and New South Wales, Australia	Qualitative individual interviews (n=22) .	Physicians providing abortions in the states of Queensland and New South Wales.
Douglas *et al* 2013[21]	Queensland and New South Wales, Australia	Qualitative individual interviews (n=22).	Physicians providing abortions in the states of Queensland and New South Wales
Fathallah *et al* 2019[31]	Lebanon	Qualitative interviews (n=119).	Women who have had an abortion (n=84) and physicians who provide abortion (n=35) in the five provinces of Lebanon between 2003 and 2008.
Friedman *et al* 2019[33]	Mexico City, Mexico	Times series design. Review of the medical records of women (n=35 054) seeking abortion.	N/A.
Henderson *et al* 2013[38]	Nepal	Retrospective cohort study. Review of medical charts (n=23 493) of abortion-related admissions at four public hospitals.	N/A.
Juarez *et al* 2019[37]	Querétaro, Tabasco and the State of Mexico, Mexico	Qualitative individual interviews (n=60).	Women aged 15–44 with experience of abortion in the three states Querétaro, Tabasco and the State of Mexico.

Continued

Table 1 Continued

Author/year	Country	Methods	Participants
Koch *et al* 2015[34]	Mexico	Times series design (n=not reported). Analysis of maternal mortality data from 32 states in Mexico over a 10-year period.	N/A.
LaRoche *et al* 2020[22]	Australia	Qualitative individual interviews (n=22).	Women, transgender and gender non-binary people from across Australia who had obtained a medical abortion while living in Australia. More than half of the participants (n=13) obtained their abortion in a state where procuring a first-trimester termination was subject to criminal law at the time of their procedure.
Nara *et al* 2019[45]	Uganda	Qualitative interviews and focus group discussions (n=69).	Congolese refugees aged 15–49 living in Kampala and the Nakivale Refugee camp (n=58 (interviews n=21; focus groups n=36)), and key informants working with refugees and/or in the sexual and reproductive health field (n=11).
Påfs *et al* 2020[42]	Kigali, Rwanda	Qualitative individual interviews (n=32) and focus group discussions (n=5).	Healthcare providers (physicians, nurses and midwives) involved in post-abortion care (PAC) at three public hospitals
Power *et al* 2021[30]	Ireland	Qualitative interview (n=10).	Fetal medicine specialists.
Ramm *et al* 2020[25]	Chile	Survey instrument (n=313) and qualitative interviews (n=30).	Medical and midwifery students at seven universities (survey). Faculty members at the same universities, all of whom were practicing clinicians (interview).
Shahawy 2019[40]	Palestine	Qualitative individual interviews (n=60).	Patients, female companions of patients, and hospital staff aged from 18 to 70 years, most of whom were Muslim, married and urban dwellers, had a high school education or less, and had at least three children.
Suh 2014[43]	Senegal	Qualitative individual interviews (n=36) and observations of PAC services at three hospitals.	Healthcare professionals
Van Dijk *et al* 2012[35]	Mexico City, Mexico	Review of medical charts (n=12) of maternal mortality occurring over a 3-year period.	N/A.
Gutiérrez Vázquez *et al* 2016[36]	Mexico City, Mexico	Times series design (n=not reported); 10% of public census data at three time points.	N/A.

N/A, not available.

because of the criminalisation of abortion,[44] while another study revealed in criminalised settings that fear of litigation among healthcare providers contributes to denial of abortion and subsequent recourse to unlawful abortion.[42] While some self-managed abortions may be unlawful, not all are, just as not all unlawful abortions are self-managed, however, as both occur outside of the formal health system, they may be less safe. Accordingly, this evidence illustrates that criminalisation of abortion appears incompatible with the human rights obligation to protect the health and life of abortion seekers (UN Special Rapporteur; Human Rights Committee, para. 8; CEDAW Committee, para. 31(c)).[1 9 10]

The evidence outlined in this section indicates clearly that criminalisation is incompatible with states' obligation to take steps to prevent and reduce maternal mortality and morbidity and to protect women from unsafe abortion outlined above. In some cases, the criminalisation of abortion can result in violations of the right to life, and human rights bodies have made it clear that women should not be criminalised for accessing abortion.[1 6 7 9–12] Illustrating that criminalisation can result in women who have abortions coming into contact with the criminal justice system, evidence from three studies shows that criminal justice procedures are initiated against women who seek abortion,[23 24 26] although one further study suggests this is rare,[27] and two further studies show that women who avail of abortion fear criminal justice repercussions.[37 45]

Impact of criminalisation on healthcare providers

A summary of the impacts of the intervention on health professionals and the application of human rights are presented in table 3. Evidence identified per study and outcome is presented in online supplemental table 2.

Evidence from four studies suggests that criminalisation has increased workload implications for healthcare providers associated with complex regulations and ensuring they do not put themselves or their patients at risk of investigation or prosecution.[20 21 42 43] This can involve what physicians considered to be unnecessary referrals to psychiatrists and other physicians for second

Table 2 Impact of criminalisation on abortion seekers

Outcome	Overall conclusion of evidence (A)	Application of HR standards (B)	Conclusion evidence+HR (C)
Delayed abortion	Overall, evidence from three studies suggests that criminalisation contributes to abortion delay. While evidence from two of these studies suggests that criminalisation leads to healthcare providers delaying care for women who are suffering from severe pregnancy complications, evidence from one study indicates that while criminalisation does not stop women from having an abortion, it complicates women's abortion pathways and thereby delays abortion.	Criminalisation engages states' obligations to protect, respect and fulfil the rights to life and health (by taking steps to reduce maternal mortality and morbidity including addressing unsafe abortion, by protecting people from the risks associated with unsafe abortion, to protect people seeking abortion and by ensuring abortion regulation is evidence-based and proportionate).	Criminalisation can result in delayed access to abortion care. Such delays may be associated with unsafe abortion or increased risks of maternal mortality or morbidity, with negative implications for rights.
Continuation of pregnancy	Overall evidence from four studies suggests that criminalisation indirectly contributes to increased continuation of pregnancy; decriminalisation is associated with reductions in birth rates. While two of these studies suggests that criminalisation affects the birth rates of women 20–29 and 20–34 years in particular, 1 study points to a greater impact among adolescents. Evidence from one study suggests that criminalisation does not impact adolescent birth rates.	Criminalisation engages states' obligations to protect, respect and fulfil the rights to life and health (by ensuring abortion regulation is evidence based and proportionate), to equality and non-discrimination, to decide the number and spacing of children. It can also result in a violation of the state's obligation to ensure abortion is available where the life and health of the pregnant person is at risk, or where carrying a pregnancy to term would cause her substantial pain or suffering, including where the pregnancy is the result of rape or incest or where the pregnancy is not viable.	Criminalisation is associated with continuation of pregnancy. Where that is undesired, this has negative implications for rights.
Opportunity cost	Overall, evidence from 14 studies suggests that criminalisation contributes to opportunity costs including travelling for abortion, delayed abortion and postabortion care, apprehension of legal repercussions, poor quality post abortion care, emotional distress, financial costs, internalised and experienced stigma, confusion about accessing abortion, and sexual and financial exploitation. Evidence from two studies suggests these opportunity costs disproportionately impact some groups of women. Evidence from two studies suggests that although criminalisation may create fear among women it does not impact the decision to have an abortion.	Criminalisation engages states' obligations to protect, respect and fulfil the rights to life and health (by protecting people from the risks associated with unsafe abortion, and ensuring ensure abortion regulation is evidence-based and proportionate).	Criminalisation contributes to opportunity costs for those accessing or seeking abortion, with negative implications for rights.
Unlawful abortion	Overall, evidence from 11 studies suggests that criminalisation contributes to unlawful abortion. These abortions are either self-managed or conducted in healthcare facilities. They are sometimes unsafe and may lead to death.	Criminalisation engages states' obligations to protect, respect and fulfil the rights to life and health (by taking steps to reduce maternal mortality and morbidity including addressing unsafe abortion, by protecting people from the risks associated with unsafe abortion, to protect people seeking abortion, and by ensuring abortion regulation is evidence-based and proportionate). It can also result in a violation of the state's obligation to ensure abortion is available where the life and health of the pregnant person is at risk, or where carrying a pregnancy to term would cause her substantial pain or suffering, including where the pregnancy is the result of rape or incest or where the pregnancy is not viable.	Criminalisation is associated with access to unlawful abortion. Such unlawful abortion may be unsafe and/or increase risks of maternal mortality and morbidity, with negative implications for rights.

Continued

Table 2 Continued

Outcome	Overall conclusion of evidence (A)	Application of HR standards (B)	Conclusion evidence+HR (C)
Self-managed abortion	Overall, evidence from four studies suggests that criminalisation contributes to self-managed abortion. These abortions are sometimes unsafe.	Criminalisation engages states' obligations to protect, respect and fulfil the rights to life and health (by taking steps to reduce maternal mortality and morbidity including addressing unsafe abortion, by protecting people from the risks associated with unsafe abortion).	Criminalisation may be associated with recourse to self-managed abortion. Where such self-managed abortions are unsafe, or increase risks of maternal mortality or morbidity, criminalisation has negative implications for rights.
Criminal justice procedures	Overall, evidence from three studies suggests that criminalisation contributes to criminal justice procedures against women and girls, some of which lead to convictions. Evidence from two studies indicates that criminalisation creates fear of legal repercussions among women undergoing abortions, and evidence from another study suggests that prosecutions and convictions against women are rare.	Criminalisation engages states' obligation to protect, respect and fulfil the right to information (where information provision is criminalised), the rights to life and health (by protecting people seeking abortion and ensuring the availability of postabortion care without criminal sanction), and the right to privacy.	Criminalisation exposes women and girls to criminal proceedings, and to the risks associated with not accessing, support, timely information or timely postabortion care. This has negative implications for rights.

opinions to establish compliance with exceptions to abortion criminalisation,[20] the provision of detailed written statements justifying abortion provision in specific cases to manage risk of prosecution,[21] and the exercise of particular caution when preparing paperwork and case files.[42 43] Two studies suggest that referral pathways and practices are complicated by criminalisation,[29 40] and three studies show that criminalisation negatively impacts the relationship between provider and patient.[22 24 29] Physicians perceived criminalisation to have such negative impacts because they consider they cannot provide optimal care due to criminalisation,[29] must undertake reporting[24] and experience patients being wary and sometimes dishonest in interactions because of their apprehension of the criminal law.[22]

While evidence from only one study indicates that criminal justice proceedings are taken against abortion information providers,[24] evidence from five studies suggests that healthcare providers anticipate criminal justice procedures against them resulting from their clinical practice,[20 21 30 41 45] and two studies indicate that criminalisation leads to hesitancy in providing care.[30 41] Evidence from two studies suggests that criminalisation contributes to healthcare providers' apprehension of being subject to antiabortion sting operations,[21 42] in one case reportedly resulting in health workers providing abortion care clandestinely.[42] Combined with the findings from human rights bodies that criminalisation results in a 'chilling effect' in the provision of healthcare, with negative implications for the rights to life, health and privacy of women who seek abortion care,[5 13] this evidence points clearly to the negative effects of criminalisation.

Overall, evidence from three studies suggests that criminalisation contributes to lower availability of trained providers and a loss of relevant skills.[21 29 41] As a matter of international human rights law states are required to ensure that sexual and reproductive healthcare is available, accessible, acceptable and of good quality to protect, respect and fulfil the right to health.[48] If, as these studies suggest, criminalisation contributes to a reduction in trained and available abortion care providers this has implications for the extent to which the state is fulfilling these obligations. While evidence from two studies indicate that healthcare providers generally do not report women to authorities,[27 43] evidence from eight studies suggests that some healthcare providers report or would report a woman suspected of an induced abortion and consider themselves bound to do so.[23–26 29 35 41 42] This reveals the ways in which criminalisation operates incompatibly with international human rights law, which makes it clear that states may not require healthcare professionals to report people for accessing abortion[1 6] and that postabortion care must always be available regardless of the legal status of abortion.[1 9 11] The combination of the evidence from these studies and applicable international legal standards points clearly to the negative impacts of criminalisation. Overall, evidence from 10 studies suggests that criminalisation contributes to system costs ranging from increased maternal mortality and morbidity, to creating a black market for abortion medication, delaying postabortion care, and distorting record keeping,[24 29 31 32 34 36 38 40 41 45–47] with clear implications for the fulfilment of the right to health.[48]

DISCUSSION

As outlined above, international human rights law requires states to take steps to ensure women do not have to undergo unsafe abortion, to reduce maternal morbidity and mortality, and to effectively protect women and girls from the physical and mental risks associated with unsafe abortion. Yet, the evidence from this review suggests that criminalisation has implications for access to safe abortion, as well as for the experience of seeking

Table 3 Impact of criminalisation on abortion providers

Outcome	Overall conclusion of evidence (A)	Application of HR standards (B)	Conclusion evidence+HR (C)
Workload implications	Overall, evidence from four studies suggests that criminalisation has increased workload implications for healthcare providers who, in order to comply with regulations and avoid criminal investigations, have to refer women to other health professionals, provide detailed written statements and ensure documentation does not put themselves or their patients at risk.	Criminalisation engages states' obligations to protect, respect and fulfil the rights to life and health (by protecting healthcare professionals providing abortion care, and by ensuring abortion regulation is evidence based and proportionate).	Workload implications arising from criminalisation place significant burdens on healthcare professionals providing abortion care, with negative implications for both their rights and the rights of persons seeking to access comprehensive abortion care.
Referral to another provider	Overall, evidence from two studies suggests that criminalisation of abortion, including abortion referrals, will complicate women's pathways to a safe and legal abortion.	Criminalisation engages states' obligations to protect, respect and fulfil the rights to life and health (by taking steps to reduce maternal mortality and morbidity including addressing unsafe abortion, by protecting people from the risks associated with unsafe abortion, to protect people seeking abortion, and by ensuring abortion regulation is evidence-based and proportionate).	Criminalisation can result in complications in accessing safe abortion care. Where such complications increase risks of maternal mortality or morbidity, they have negative implications for rights. Criminalisation may deter people seeking abortion or for those who have availed of abortion from accessing comprehensive abortion care, including referral within the formal medical system, with negative implications for rights.
Perceived impact on provider–patient relationship	Evidence from three studies suggests that criminalisation negatively impacts the provider patient relationship.	Criminalisation engages states' obligations to protect, respect and fulfil the rights to life and health (by protecting people seeking abortion, and by ensuring abortion regulation is evidence based and proportionate).	Criminalisation can impact negatively on the doctor–patient relationship, with negative implications for women and girls' right to health.
Antiabortion sting operations	Overall, evidence from two studies suggests that criminalisation contributes to apprehension of anti-abortion sting operations.	Criminalisation engages states' obligations to protect, respect and fulfil the rights to life and health (by protecting healthcare professionals providing abortion care).	Where criminalisation is associated with antiabortion sting operations, this may put healthcare professionals who conscientiously provide comprehensive abortion care and information at risk of legal or professional sanction, with negative implications for their rights and the rights of abortion seekers or those who have had abortions.
Criminal justice procedures against healthcare providers	Overall, evidence from one study indicates that criminalisation leads to criminal justice procedures against abortion information providers and evidence from five studies suggests that healthcare providers anticipate criminal justice procedures against them resulting from their clinical practice. In addition, evidence from two of these studies indicates that fear of criminal justice procedures leads to hesitancy to provide abortion care, including in cases of non-viable pregnancies.	Criminalisation engages states' obligations to protect, respect and fulfil the rights to life and health (by protecting healthcare professionals providing abortion care, and by ensuring abortion regulation is evidence-based and proportionate).	Actual or apprehended criminal justice procedures against healthcare providers associated with criminalisation may result in reduced or hindered access to comprehensive abortion care. Where this is the case, criminalisation interferes disproportionately with rights to health and to physical and mental integrity.
Availability of trained providers	Overall, evidence from three studies suggests that criminalisation contributes to lower availability of trained providers and a loss of relevant skills.	Criminalisation engages states' obligations to protect, respect and fulfil the rights to life and health (by taking steps to reduce maternal mortality and morbidity including addressing unsafe abortion, by protecting people from the risks associated with unsafe abortion, to protect people seeking abortion, by ensuring that where it is lawful abortion is safe and accessible, and by ensuring abortion regulation is evidence-based and proportionate).	Criminalisation is associated with reduced availability of trained providers and a loss of relevant skills, with implications for the availability of competent providers for exceptions to criminalisation, for the reduction of maternal mortality and morbidity and, thus, for human rights.

Continued

Table 3 Continued

Outcome	Overall conclusion of evidence (A)	Application of HR standards (B)	Conclusion evidence+HR (C)
Reporting of suspected unlawful abortion	Overall, evidence from eight studies suggests that some healthcare providers report or would report a woman suspected of an induced abortion, while evidence from two studies indicate that healthcare providers generally do not report women to authorities. Where abortion is criminalised, there is not always a consensus among healthcare providers about whether and when one should report. While some never report in order to avoid being dragged into an investigation, others report to protect themselves from any legal repercussions.	Criminalisation engages states' obligation to protect, respect and fulfil the right to information (where information provision is criminalised), the rights to life and health (by protecting people seeking abortion, by protecting healthcare professionals providing abortion care, by ensuring abortion regulation is evidence-based and proportionate, and by ensuring the availability of post-abortion care without criminal sanction), and the right to privacy.	Where criminalisation requires or results in healthcare professionals reporting suspected unlawful abortion, this may deter women and girls from seeking or safely accessing abortion information with negative implications for rights. Where criminalisation requires or results in healthcare professionals reporting suspected unlawful abortion, this may put healthcare professionals who conscientiously provide comprehensive abortion care and information at risk of legal or professional sanction, with negative implications for their rights and the rights of abortion seekers or those who have had abortions.
System costs	Overall, evidence from 12 studies suggests that criminalisation contributes to system costs. Four of these studies suggest that criminalisation, indirectly, contributes to system costs by showing how decriminalisation impacts birth weight positively, decreases unplanned pregnancies and fertility, and increases maternal mortality and severe abortion morbidity. Evidence from four studies shows that criminalisation contributes to system costs by creating a black market for abortion medication, by delaying abortion and post-abortion care until women are severely ill, by contributing to poor quality of postabortion care, and by preventing women from accessing evidence based, safe and effective treatment. Evidence from one study indicates that criminalisation does not contribute to any system costs related to adolescent birth rates and finally, evidence from one study suggests that factors related to maternal healthcare and health status impact maternal mortality and not abortion legislation itself.	Criminalisation engages states' obligations to protect, respect and fulfil the rights to life and health (by taking steps to reduce maternal mortality and morbidity including addressing unsafe abortion, by protecting people from the risks associated with unsafe abortion, by ensuring abortion regulation is evidence based and proportionate).	Criminalisation is associated with system costs, including those related to access to unlawful abortion, unsafe abortion, and increased maternal morbidity and mortality. Thus, criminalisation has negative implications for rights.
Harassment	No evidence identified.	Criminalisation engages states' obligations to protect, respect and fulfil the right to health (by protecting healthcare professionals providing abortion care).	Criminalisation of abortion may expose healthcare professionals to risks of harassment, criminal prosecution, or sting operations. The implications for healthcare professionals of criminalisation may reduce the no of willing providers of lawful abortion, abortion information or postabortion care with implications for the health and rights of abortion seekers or persons who have accessed abortion including unsafe abortion.
Stigmatisation	No evidence identified.	Criminalisation engages states' obligations to protect, respect and fulfil the right to health (by protecting healthcare professionals providing abortion care).	Criminalisation of abortion may lead to stigmatisation of abortion care provision with implications for the professional life, health and well-being of healthcare professionals.

and availing of abortion care. Under international human rights law, states are required to revise their laws to ensure that in practice, the regulation of abortion does not jeopardise women's lives, subject women or girls to physical or mental pain or suffering constituting torture or cruel, inhuman or degrading treatment or punishment, discriminate against women or girls, or interfere arbitrarily with their privacy.[9] Thus, the evidence from this review reinforces the human rights imperative for full decriminalisation of abortion in all settings.

Reflecting the recognition across legal and health scholarship and domestic and international human rights law that criminalisation is not a sound regulatory approach to abortion, full or partial decriminalisation is beginning to occur. In some countries, parliaments have recently made legislative changes to remove criminal offences for women who access or avail of abortion, although providing abortion outside of the circumstances laid down in the law remains an offence.[49] In others, parliaments have fully decriminalised abortion, although that is rare,[50–52] and several superior courts have found that criminalisation of accessing or availing of abortion is unconstitutional.[53] However, partial decriminalisation or practices of depenalisation or non-application of the law are insufficient as the open, informed and positive provision of abortion care remains hindered (Erdman and Cook, p. 13),[54] and there are continuing impacts on health workers and healthcare facilities where provision of abortion remains criminalised. Health professionals increasingly express support for either full or partial decriminalisation, regardless of personal religious or ethical stance vis-à-vis abortion per se,[55] and there is growing acknowledgement of the harms that are produced by abortion criminalisation (Erdman, p. 249).[56] Formal decriminalisation does not necessarily create clarity in the community about the permissibility of abortion,[57] suggesting that formal decriminalisation ought to be accompanied by government facilitating the provision of accurate and accessible information about the availability of abortion in a variety of formats and languages and in-keeping with the right to receive accurate and unbiased information on sexual and reproductive healthcare as reflected in, for example, Article 19 of the International Covenant on Civil and Political Rights.[5 58 59]

It is important to recall that in many jurisdictions criminalisation interacts with other abortion law and policy that may compound its effects, including the existence of grounds (which usually operate as exceptions or 'defenses' to general abortion-related offences). 'Grounds-based' access to abortion emerged to mitigate the effects of criminalisation, permitting abortion in limited circumstances. However, such restrictions, laws and policies not only themselves produce negative human rights effects including those resulting from delay, disproportionate impact on marginalised groups and denial of abortion even in circumstances where international human rights law makes clear it must be available, but also complicate abortion provision and health system organisation, create burdens within the criminal justice system, and contribute to the exceptionalisation and stigmatisation of abortion for both pregnant people and health workers.[60] These broader effects combine with the human rights and public health impact of criminalisation outlined in this review to establish the significant burdens produced by criminalisation.

Limitations

This review has limitations. While its geographical scope is wide, with manuscripts reflecting 19 country contexts, the review only contains manuscripts published in English. Further research on the impact of criminalisation in a wider range of settings would be welcome. Furthermore, research on the impact of criminalisation of particular subpopulations of abortion seekers including people with diminished capacity and minors would benefit the overall evidence base. As a general matter, randomised controlled trials or comparative observational studies are not readily applicable to questions relating to the realisation of human rights applicable to abortion-related interventions, and studies do not always contain comparisons. Although this may be considered a limitation from a standard methodological perspective for systematic reviews, it does not impact on our ability to identify human rights law implications of law and policy interventions and thus is not a limitation for a review of this kind. Relatedly, standard tools for assessing risk of bias or quality, including GRADE,[61] were unsuitable for this review which aimed to ensure effective integration of human rights into our understanding of the effects of criminalisation as a regulatory intervention in abortion law and policy. Thus, as explained in the published methodology,[16] a wide variety of sources is engaged with.

CONCLUSION

This review identified evidence of the impacts of criminalisation on people seeking to access abortion and on abortion providers, and considered whether, and if so how, this demonstrates the incompatibility of criminalisation with substantive requirements of international human rights law. This review clearly points to impacts that have negative implications for health outcomes, health systems and human rights. It provides empirical evidence of the scale, complexity and severity of human rights violations associated with criminalisation and which have already been identified by human rights bodies. It also provides additional evidence to support the WHO's recommendation for full decriminalisation of abortion, understood as 'the complete decriminalisation of abortion for all relevant actors: removing abortion from all penal/criminal laws, not applying other criminal offences (eg, murder, manslaughter) to abortion, and ensuring there are no criminal penalties for having, assisting with, providing information about or providing abortion'.[18] Given this, the need for states to fully decriminalise of abortion as a

necessary step towards ensuring that abortion is available, accessible and of good quality is now firmly established.

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Supplementary Table 1. **Evidence table: Impact of criminalization on abortion seekers**

OUTCOME: DELAYED ABORTION			
Studies	**Direction of the evidence**	**What does this mean?**	**Overall conclusion**
Aiken 2019[1]	▲	Criminalization contributes to delayed abortion, as women in need of an abortion travel out of the country to access an abortion, or use telemedicine services (where the shipment of medications can sometimes take several weeks, and some packages may be confiscated).	Overall, evidence from 3 studies suggests that criminalization contributes to abortion delay. While evidence from 2 of these studies suggests that criminalization leads to healthcare providers delaying care for women who are suffering from severe pregnancy complications, evidence from 1 study indicates that while criminalization does not stop women from having an abortion, it complicates women's abortion pathways, and thereby delays abortion.
Aitken 2017[2]	▲	Criminalization contributes to delayed abortion when healthcare providers must delay treating women with pregnancy complications until their lives are considered to be in danger. Among 33 OB-Gyn trainees who were involved in the care of women with life threatening pregnancy complications, 27% (n=9) felt they had delayed abortion until a woman's health had deteriorated and "the pregnancy was deemed a severe risk to life/health."	
Casas 2014[1]	▲	Criminalization contributes to delayed abortion by creating and fueling an unregulated market for abortion medications. Some women are sold counterfeit drugs or poor-quality medications, which leads to a delay in abortion. Criminalization further contributes to delayed abortion, by requiring healthcare providers to delay treating women with pregnancy complications until their lives are considered to be in danger.	
OUTCOME: CONTINUATION OF PREGNANCY			
Antón 2016	○	Decriminalization of abortion was not associated with a change in adolescent birth rates or birth outcomes (birthweight, prematurity, adequacy of prenatal care).	Overall evidence from 4 studies suggests that criminalization indirectly contributes to increased continuation of pregnancy; decriminalization is associated with reductions in birth rates. While 2 of these studies suggests that criminalization affects the birth rates of women 20-29 and 20-34 years in particular, 1 study points
Antón 2018	▲	Decriminalization of abortion is associated with an 8% decrease in births due to unplanned pregnancies. This decline is driven by a fall in fertility among women 20-34 years old with secondary education.	

Clarke 2016	▲	Decriminalization is associated with reductions in fertility and maternal mortality. Following legal reform that established free of charge, on request, first trimester abortions, maternal mortality and birth rates were reduced. Among women aged 15-44, maternal mortality rates decreased by 8.8 to 16.2% and fertility rates declined by 2.3 to 3.8%. This trend was more marked among younger women aged 15-19. Maternal death rates decreased by 14.9 to 30.3% and fertility rates by 5.1 -7.1% in the first 4 years following legal reform.	to a greater impact among adolescents. Evidence from 1 study suggests that criminalization does not impact adolescent birth rates.
Vázquez 2016	▲	Decriminalization led to a decrease in the number of births in Mexico City by an additional 4% over what was seen in outlying areas, where legal abortion was not available. Little effect was seen on the fertility of adolescents, for whom parental authorisations remained in place. The greatest reduction in childbearing was among women aged 20-29 (decline of 12-18% probability).	
OUTCOME: OPPORTUNITY COSTS			
Aiken 2019[1]	▲	Criminalization results in some women having to travel to access an abortion, which is associated with travel costs, emotional distress, time-off work, and lost wages. For women who choose to self-manage an abortion, this experience is sometimes associated with significant fear and distress.	Overall, evidence from 16 studies suggests that criminalization contributes to opportunity costs including traveling for abortion, delayed abortion and post abortion care, apprehension of legal repercussions, poor quality post abortion care, emotional distress, financial costs, internalised and experienced stigma, disproportionate impact on certain populations, and sexual and financial exploitation. Evidence from 2 studies suggests that although criminalization may create fear among women it does not impact the decision to have an abortion.
Aiken 2017	▲	Where abortion is criminalized, women commonly report serious mental stress caused by their pregnancies and their inability to afford travel abroad to access abortion. The option of telemedicine for abortion services mitigates some of these opportunity costs. The feelings women most commonly report after completing an abortion are “relief” (70%) and “satisfaction]” (36%). Women with financial hardship have twice the risk of lacking emotional support (OR=2.0, p<0.001).	
Aitken 2017[3]	▲	Some healthcare providers perceive that criminalization contributes to isolation, stigma, shame, fear and stress among women in need of an abortion. In addition, some providers report seeing women returning from abroad with preventable infections and that some of these women delayed care seeking when experiencing complications, due to fear of legal repercussions.	

Arambepola 2014	○	Criminalization does not impact the decision to abort. Among women who carry their unintended pregnancies to term, only 4.2% (n=25) mention that the illegal status of abortion influenced their decision to keep the pregnancy.
Casas 2014[1]	▲	Criminalization contributes to opportunity costs including travel costs to access abortion and costs for illegal procedures. Furthermore, criminalization creates and fuels an unregulated market for abortion medications. Some women are sold counterfeit or ineffective drugs and thus experience subsequent abortion delays. In addition, some women seeking abortion care are exposed to sexual and financial exploitation but are unable to report it due to criminalization of abortion. They also do not seek out support or information from friends or relatives because they do not want to implicate them in their activities.
Citizens' Coalition 2014	▲	Women who are prosecuted for criminal abortion are young (85% below 30 years) and have low levels of education (46.3% illiterate or completed 2 years of primary school; 25.6% attended secondary school or higher education). The majority are single (73%) and have no income or little income (80%).
CRR 2010[1]	▲	Criminalization leads to fear of criminal liability among healthcare providers and many hesitate to perform abortion under any circumstances. Criminalization is one factor of many that contributes to internalised stigma and poor quality of post-abortion care - some women are abused, threatened, denied care and harassed by healthcare providers when seeking care for abortion complications. Some women do not seek care for abortion complications as they fear being imprisoned.
Douglas 2013[1]	▲	In order to avoid risk of prosecution, some physicians advise women to travel for abortion, acknowledging that this may incur several opportunity costs for the woman including financial costs, lack of support and distress.
Fathallah 2019	▲	Women seeking abortion experienced cost as an obstacle, with single women, and married women from disadvantaged socioeconomic backgrounds being most marginalised.

Friedman 2019	▲	Living in a municipality where abortion is illegal is associated with less access to safe and legal abortion (reduction in access index = 58.6%; 95% CI 21.5-78.1) compared with living where abortion is legal.	
Juarez 2019[1]	○	Criminalization does not prevent women from having abortions despite awareness of the illegal status of abortion and fear of legal repercussions.	
Påfs 2020[1]	▲	Where abortion is criminalized, except in cases of rape or incest, the process to access legal abortion is so costly, laborious and time consuming, that few women attempt this pathway.	
LaRoche 2020	▲	Criminalization added confusion to the process of seeking abortion, and many experienced a sense of judgement when 'giving reasons' for seeking abortion, and felt laws imposed secrecy, were punitive and stigmatising.	
Ramm 2020	▲	Women accessing healthcare in the public sector were disproportionately likely to be reported for unlawful abortion compared to those in the private sector.	
Shahawy 2019	▲	Even if a woman seeks abortion on legally permitted grounds, criminalization results in more barriers, such as needing to consult with a committee or doctors, getting a letter from a religious court, or getting the husband's permission. Women who access abortion do so through travelling or through paying for a private abortion, and do not access post-abortion care due to having availed of an unlawful abortion.	
Suh 2014[1]	▲	Where abortion is criminalized, some healthcare providers prevent women suspected of induced abortion from leaving the hospital, so they are more easily found in case someone reports her to the police.	
OUTCOME: SELF-MANAGED ABORTION			
Aiken 2019[1]	▲	Where abortion is criminalized, some women self-manage abortions unlawfully.	

Aiken 2017	▲	Where abortion is criminalized, women increasingly self-manage abortions unlawfully with the help of telemedicine services.	Overall, evidence from 4 studies suggests that criminalization contributes to self-managed abortion. These abortions are sometimes unsafe.
Casas 2014[1]	▲	Criminalization contributes to self-managed abortion as some women who do not travel abroad for abortion, self-manage abortions unlawfully which is sometimes unsafe.	
CRR 2010[1]	▲	Criminalization contributes to self-managed abortion that are unsafe and sometimes leads to death.	
OUTCOME: UNLAWFUL ABORTION			
Aiken 2019[1]	▲	Where abortion is criminalized, some women self-manage abortions unlawfully.	Overall, evidence from 11 studies suggests that criminalization contributes to unlawful abortion. These abortions are either self-managed or conducted in healthcare facilities. They are sometimes unsafe and may lead to death.
Aiken 2017	▲	Where abortion is criminalized, women increasingly self-manage abortions unlawfully with the help of telemedicine services.	
Arambepola 2014	▲	Criminalization contributes to unlawful abortion that is sometimes unsafe. Women report avoiding seeking care from health facilities or trained professionals due to the illegal status of abortion (100%, n=171). Only 20.5% (25/122) of women who obtained an abortion received care from a qualified medical professional.	
Casas 2014[1]	▲	Criminalization contributes to unlawful abortion as some women who do not travel abroad for abortion, self-manage abortions or undergo abortions in healthcare facilities unlawfully that are sometimes unsafe.	
CRR 2010[1]	▲	Criminalization contributes to unlawful abortion that is sometimes unsafe.	
Fathallah 2019	▲	Single women and married women from lower socioeconomic backgrounds sought unlawful abortion from private facilities.	
Juarez 2019[1]	▲	Criminalization contributes to unlawful abortion that is sometimes unsafe.	
Nara 2019	▲	Legal restrictions on abortion and the lack of clarity on the exceptions contribute to the occurrence of unlawful and unsafe abortion.	

Van Dijk 2012[1]	▲	Criminalization contributes to unlawful and unsafe abortion that sometimes leads to death.	
Påfs 2020[1]	▲	Criminalization contributes to a fear of litigation among healthcare providers, denial of abortion and subsequent unlawful abortion, that is sometimes unsafe.	
Shahawy 2019	▲	Because of criminalization women attempt to induce abortion at home using self-harm.	
OUTCOME: CRIMINAL JUSTICE PROCEDURES			
Blystad 2019[1]	○	Prosecutions and convictions of women are extremely rare.	Overall, evidence from 6 studies suggests that criminalization contributes to criminal justice procedures against women and girls, some of which lead to convictions. Evidence from 2 studies indicates that criminalization creates fear of legal repercussions among women undergoing abortions, and evidence from another study suggests that prosecutions and convictions against women are rare.
Casas 2014[1]	▲	Criminalization leads to criminal investigations of women and girls. In a few cases, women are prosecuted and charged.	
Casseres 2018	▲	Where abortion is criminalized, some healthcare providers report women seeking post abortion care to authorities, leading to criminal lawsuits and public prosecutions.	
Citizen's Coalition 2014	▲	Where abortion is criminalized, some women are prosecuted for abortion or aggravated homicide. A review of criminal justice procedures showed that out of 129 prosecuted women, 49 were convicted.	
Juarez 2019[1]	○	Where abortion is criminalized, women undergoing abortions fear unwanted disclosures and subsequent legal justice procedures.	
Nara 2019	▲	Where abortion is criminalized women fear the legal repercussions of attempting to access abortion or post-abortion care at a healthcare facility.	

Supplementary Table 2. **Evidence Table: Impact of criminalization on health professionals**

OUTCOME: WORKLOAD IMPLICATIONS

Studies	Direction of the Evidence	What does this mean?	Overall conclusion
De Costa 2013[1]	▲	Criminalization contributes to increased workload implications when physicians, in order to comply with the law, have to refer abortion seekers to psychiatrists and other physicians for second opinions. These procedures are perceived by some physicians as unnecessary and time consuming and as placing additional stress upon the woman.	Overall, evidence from 4 studies suggests that criminalization has increased workload implications for healthcare providers who, in order to comply with regulations and avoid criminal investigations, have to refer women to other health professionals, provide detailed written statements and ensure documentation does not put themselves or their patients at risk.
Douglas 2013[1]	▲	Criminalization contributes to increased workload implications when physicians, in order to not risk any criminal charges, have to provide written detailed statements that prove why an abortion is legally justified.	
Påfs 2020[1]	▲	Where abortion is criminalized, the threat of police investigations makes healthcare providers cautious about documentation in patient files and means they note all cases as spontaneous abortion.	
Suh 2014[1]	▲	Where abortion is criminalized, healthcare providers are cautious about documentation in patient files and registers, and mindful about how data is reported to the Ministry of Health.	
OUTCOME: REFERRAL TO ANOTHER PROVIDER			
Aitken 2017[2]	▲	In settings where abortion is criminalized, including for referral to another provider, 18/52 OB-Gyn trainees reported having referred women to an agency where she can receive information on abortion services abroad, while 29/52 have been asked for a referral by a pregnant woman.	Overall, evidence from 2 studies suggests that criminalization of abortion, including abortion referrals, will complicate women's pathways to a safe and legal abortion.
Shahawy 2019	▽	Physician reports not providing abortion due to criminalization and telling women to go elsewhere, but not referring them for treatment or telling them where they can go.	
OUTCOME: PERCEIVED IMPACT ON RELATIONSHIP WITH PATIENT			

Aitken 2017[2]	▲	Some healthcare providers perceive that the care they provide is suboptimal, especially in cases of foetal anomaly, as criminalization prevents them from providing abortion care.	Evidence from 3 studies suggests that criminalization negatively impacts the provider-patient relationship.
Casas 2014[1]	▲	Where abortion is criminalized, some healthcare providers perceive that when reporting is required, this impacts the provider-patient relationship negatively.[3]	
LaRoche 2020	▲	Participants repeatedly recounted that the perception of abortion as an illegal activity interfered with the patient-clinician relationship, introducing a sense of wariness about how honest they could be, and sometimes resulting in dishonest interactions with clinicians.	
OUTCOME: ANTI-ABORTION STING OPERATIONS			
Douglas 2013[1]	○	Where abortion is criminalized, some physicians report apprehension of anti-abortion sting operations which may lead to criminal justice procedures.	Overall, evidence from 2 studies suggests that criminalization contributes to apprehension of anti-abortion sting operations.
Påfs 2020[1]	○	Where abortion is criminalized, some healthcare providers provide abortion care clandestinely to avoid being reported to the police by a spy or someone else.	
OUTCOME: CRIMINAL JUSTICE PROCEDURES INVOLVING HEALTHCARE PROVIDERS			
Douglas 2013[1]	○	Where abortion is criminalized, some physicians report apprehension of criminal prosecution resulting from their clinical practice.	Overall, evidence from 6 studies indicates that criminalization leads to criminal justice procedures against abortion information providers and evidence from 5 studies suggests that healthcare providers anticipate criminal justice procedures against them resulting from their clinical practice. In addition, evidence from 2 of these studies indicates that fear of criminal justice procedures leads to hesitancy to provide abortion care, including in cases of non-viable pregnancies.
Casas 2014[1]	▲	Criminalization leads to criminal investigations of providers of abortion information, including staff at abortion hotlines.[3]	
De Costa 2013[1]	○	Where abortion is criminalized, some healthcare providers report apprehension of criminal prosecution resulting from their clinical practice.	
CRR 2010[1]	○	Criminalization of abortion creates fear of criminal liability among some healthcare providers and a hesitation to provide abortion care, even in cases of non-viable pregnancies such as ectopic and molar pregnancies.	

Nara 2019	○	Providers fear prosecution for providing safe abortion.	
Power 2021	○	Clinicians feel vulnerable to prosecution where 'exceptions' are narrowly defined and fear that misdiagnosis of a foetal condition might lead to their prosecution.	
OUTCOME: AVAILABILITY OF TRAINED PROVIDERS			
Aitken 2017[1]	□	Out of 52 OB-Gyn trainees, 52% (n=27) would be interested in abortion provision training as part of their curriculum, 30% (n=16) are not interested and 15% (n=8) are unsure.	Overall, evidence from 3 studies suggests that criminalization contributes to lower availability of trained providers and a loss of relevant skills.
CRR 2010[1]	□	Criminalization contributes to a lack of training opportunities in abortion care for healthcare providers and unwillingness among some clinicians to learn about abortion.	
Douglas 2013[1]	□	Criminalization contributes to a lack of training opportunities in abortion care for physicians, and unwillingness among some clinicians to learn about abortion. This in turn leads to a lack of relevant skills among specialists in obstetrics and gynaecology.	
OUTCOME: REPORTING OF SUSPECTED UNLAWFUL ABORTIONS			
Aitken 2017[2]	▲	While most healthcare providers (74%, n=39/52) would not report a woman who has had an abortion by procuring medications illegally to the police, 14% (n=7/52) were unsure.	Overall, evidence from 10 studies suggests that some healthcare providers report or would report a woman suspected of an induced abortion, while evidence from 2 studies indicate that healthcare providers generally don't report women to authorities. Where abortion is criminalized, there is not always a consensus among healthcare providers about whether and if so when one should report. While some never report in order to avoid being dragged into an investigation, others report to protect themselves from any legal repercussions.
Blystad 2019[1]	○	Where abortion is criminalized, healthcare providers generally do not report women to the authorities.	
Casas 2014[1]	▲	Women seeking post-abortion care risk being reported to the authorities. Some physicians perceive that some 'obvious cases' leave them no option other than to report.	
Casseres 2018	▲	Where abortion is criminalized, some healthcare providers report women seeking post abortion care to authorities leading to criminal	

		lawsuits. Women seeking care following a self-induced abortion who are reported are more likely to be black and to have only completed primary school.
Citizen´s Coalition 2014	▲	Where abortion is criminalized, some healthcare providers at public institutions report women seeking post-abortion care to authorities leading to criminal lawsuits. Some reports are made by police officers.
CRR 2010[1]	▲	Where abortion is criminalized, some healthcare providers report women seeking post abortion care to authorities and believe it is their duty to do so. Some threaten to report women and force them to sign statements admitting guilt to protect themselves from any legal repercussions. Others refrain from reporting due to fear of being dragged into a legal investigation.
Påfs 2020[1]	▲	Where abortion is criminalized, there is a lack of consensus among healthcare providers about whether or not one should report women suspected of induced abortion to the police. While most providers do not report women, some do in order to protect themselves from litigation.
Ramm 2020	▲	Participants considered themselves mandated to report unlawful abortion when working in the public sector where one's 'hands are tied', even though most did not support reporting. People who have abortions. Some considered this obligation overrode their duty of confidentiality to the patient.
Suh 2014[1]	○	Where abortion is criminalized, healthcare providers generally do not report women suspected of induced abortion and all cases are recorded as spontaneous abortion.
Van Dijk 2012[1]	▲	Where abortion is criminalized and healthcare facilities are obliged to report women suspected of induced abortion, reporting is largely dependent on the physician and the hospital director.

OUTCOME: SYSTEM COST			
Aitken 2017[2]	▲	Criminalization contributes to delayed abortion when healthcare providers delay treating women with pregnancy complications until their lives are considered to be in danger. Among 33 physicians involved in the care of women with life threatening abortion complications, 27% (n=9) felt they had delayed abortion until a woman's health had deteriorated until "the pregnancy was deemed a severe risk to life/health."	Overall, evidence from 12 studies suggests that criminalization contributes to system costs. Four of these studies suggest that criminalization, indirectly, contributes to system costs by showing how decriminalization impacts birth weight positively, decreases unplanned pregnancies and fertility, and increases maternal mortality and severe abortion morbidity. Evidence from 4 studies shows that criminalization contributes to system costs by creating a black market for abortion medication, by delaying abortion and post-abortion care until women are severely ill, by contributing to poor quality of post-abortion care, and by preventing women from accessing evidence based, safe and effective treatment. Evidence from 1 study indicates that criminalization does not contribute to any system costs related to adolescent birth rates and finally, evidence from 1 study suggests that factors related to maternal healthcare and health status impact maternal mortality and not abortion legislation itself.
Antón 2016	○	Criminalization of abortion was not associated with a change in adolescent birth rates or birth outcomes (birthweight, prematurity, adequacy of prenatal care).	
Antón 2018	▲	Decriminalization of abortion is associated with an 8% decrease in births due to unplanned pregnancies. This decline is driven by a fall in fertility among women with secondary education, aged 20-34 years old.	
Casas 2014[1]	▲	Criminalization contributes to system costs by creating and fueling a black market for abortifacients and facility-based care where providers are free to determine the fees.	
Clarke 2016	▲	Decriminalization is associated with reductions in maternal mortality. Following law reform that gave women access to first trimester abortions on request, free of charge, maternal mortality fell by 8.8-16.2% among women aged 15-44 and by 14.9-30% among adolescents.	
CRR 2010[1]	▲	Criminalization deters women from seeking post abortion care, as they fear harassment and legal repercussions. This results in delayed care-seeking for complications, and women seeking care only when experiencing severe complications that may risk their health and life. Banning of misoprostol has potential system costs as it prevents women from accessing evidence based, safe and effective means to end their pregnancies including for the treatment of post-abortion complications. Furthermore, where therapeutic abortions are not accurately recorded, system readiness is impacted, increasing system costs.	

Fathallah 2019	▲	Where abortion is criminalized, abortions carried out in hospital settings are sometimes registered as a s “miscarriage”, resulting in distortion of health data.
Henderson 2013	▲	Decriminalization is associated with a decrease in the odds of serious abortion complications (aOR = 0.49; CI95% 0.37-0.64). The odds of sepsis is significantly reduced when comparing pre- and post de-criminalization (aOR 0.37; CI 95% 0.29-0.46).
Koch 2015	○	Differences in maternal mortality between settings with more restrictive and less restrictive abortion legislation are attributed to differences in maternal healthcare, fertility, literacy, intimate partner violence and sanitation, and not the abortion legislation itself.
Nara 2019	▲	Where abortion is criminalized, fear of prosecution dissuades women from seeking post-abortion care.
Shahawy 2019	▲	In settings where abortion is criminalized, women attempt unsafe abortions at home or seek clandestine abortions in private clinics; afterwards some refrain from seeking post abortion care due to fear and others obtain care to help complete their abortions.
Vázsquez 2016	▲	Decriminalization leads to a decrease in the number of births by an additional 4%. In addition, decriminalization contributes to a reduction in the probability of childbearing by 12-18% among women aged 20-29. No change in adolescent fertility is observed.