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The impact of gestational age limits on abortion-related outcomes: a synthesis of legal and health evidence

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Abstract

Background Gestational age limits (GLs) are common in abortion laws and policies. They restrict when lawful abortion may be accessed by reference to the gestational duration of a pregnancy, in some cases specifying that abortion is a criminal offense after, but not before, the GL. This synthesis of legal and health evidence addresses knowledge gaps on the health and non-health outcomes plausibly related to the effects of GLs on abortion-related outcomes.

Methods This paper synthesizes the results of a systemic review with the identification and application of relevant international human rights standards. A search strategy was drawn up to capture public health, international human rights law, and policy evidence related to the impacts of GLs. We limited our search to papers published in English since 2010, including quantitative studies (comparative and non-comparative), qualitative and mixed-methods studies, reports, PhD theses, and economic or legal analyses. Only studies that undertook original data collection or analysis were included. Review of treaties, opinions, interpretations, general comments, and special procedures of UN human rights bodies identified relevant human rights standards, which were then synthesized with the extracted data to create a comprehensive evidence synthesis.

Results GLs do not prevent people from seeking abortion but do operate as a regulatory barrier that can result in people seeking abortion outside of the formal health system or unwillingly continuing pregnancy. In many jurisdictions, they interact with the criminalization of abortion, with significant health and non-health impacts. GLs impact most on people who are least able to access abortion because of later detection of pregnancy, lack of access to abortion provision, and lack of access to the resources required to avail of abortion.

Conclusions Although paradigmatic in abortion law, GLs are not based on evidence of either the safety or effectiveness of abortion or the needs and preferences of pregnant people. They produce rights-limiting impacts for pregnant people and, in some cases, result in arbitrary and disproportionate violations of legally protected rights. The persistence of GLs as part of the regulatory framework for abortion provision cannot be said to ensure an enabling environment for quality abortion care.

Keywords Abortion, Reproductive rights, Gestational age limits, Term limits, Abortion term limits, Abortion law

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Background

Gestational age limits (GLs) are common in abortion laws and policy [1, 2], appearing in most abortion laws [3]. Imposed through formal law, institutional policy, or personal practice by individual abortion providers, GLs restrict when lawful abortion may be accessed by reference to the gestational duration of a pregnancy, in some cases specifying that abortion is a criminal offense after, but not before, the GL.

Even though they are common across national and local settings, GLs in law do not reflect clinical evidence on the safety or efficacy of abortion, or of the appropriateness of specific abortion methods at various stages of pregnancy as reflected in long-standing World Health Organization (WHO) guidelines. Indeed, the WHO has long acknowledged that efforts to impose GLs may have negative consequences for people seeking abortion, including causing them to avail of unlawful abortion or incurring significant costs [4].

Regulation of abortion has implications for a wide range of internationally protected rights, including but not limited to the right to health, the right to privacy, the right to life, the right to be free from torture, cruel, inhuman, or degrading treatment, and the right to equality and non-discrimination [5]. International human rights law does not expressly address the issue of GLs. The Working Group on Discrimination against Women in Law and Practice has called for states to permit termination of pregnancy without restriction as to reason during the first trimester [6], and the UN Human Rights Committee has stated clearly that states must make abortion available where continuing with pregnancy would cause substantial pain and suffering including, but not limited to, situations of risk to life, pregnancy resulting from rape, and non-viability of the pregnancy [7]. However, despite a shortage of express attention to GLs, the general requirements of international human rights can be applied when seeking to understand their rights-related impacts. These include the requirements that states ensure the regulation of abortion is evidence-based (i.e., not arbitrary) and proportionate (i.e., provided for by law, necessary for and rationally connected to the achievement of a legitimate objective that is pursued through the regulation, and minimally intrusive) [8]. Furthermore, as a matter of international human rights law states may not regulate abortion in a way that is contrary to their duty to ensure pregnant people do not have to undertake unsafe abortions or in a manner that results in a violation of a pregnant person's rights [7].

This is one of seven reviews that were carried out as part of developing the evidence base for the WHO *Abortion Care Guideline* (2022) [5]. It synthesizes legal and health evidence on the impacts of GLs in abortion law and policy to address knowledge gaps related to the health and non-health outcomes that are plausibly related to the effects of GLs on abortion-related outcomes and provide evidence underpinning GL-related recommendations in that *Guideline.*

Throughout this evidence synthesis, and consistent with the approach in the *Abortion Care Guideline* [5], we use the terms women, girls, pregnant women and girls, pregnant people, and people interchangeably to include all those with the capacity to become pregnant.

Methods

As described further below, we applied methodology for the integration of rights as evidence that we have described elsewhere [9] and which ensures human rights standards and guidance and public health evidence inform and are integrated within the evidence base that should inform law and policy making. This methodology, developed by health and human rights scholars, is suitable for evidence syntheses relating to complex interventions that can have multiple (synergistic or dissynergistic) interacting components, potentially nonlinear effects, and context dependencies. Our objective was to fully integrate human rights implications into our understanding of the effects of GLs. Given this objective, the standard tools for assessing the risk of bias or quality were unsuitable for the varied types of evidence we included. However, we did apply evaluation criteria across all evidence types. Specifically, we assessed the adequacy of qualitative findings using the GRADE-CERQual approach [10]. This method allowed us to systematically evaluate the adequacy of data, ensuring that our synthesis was robust and reliable. Additionally, quantitative studies were evaluated for precision, directness, and magnitude of effect.

Identification of studies and data extraction

The systematic review element of this evidence synthesis examined the impact of the intervention of GLs on two populations, namely (i) people seeking abortion, and (ii) health professionals. The search strategy was developed together with experts working in the field of law, policy, and human rights (see further Additional file 1: Search strategy) following the development of a PICO (Population, Intervention, Comparison, Outcome). It included the key terms gestation AND abortion, time limits AND abortion, abortion time limit, abortion AND viability, and week ban AND abortion. We searched the databases PubMed, HeinOnline, and JStor and the search engine Google Scholar on June 10th, 2021. As the second edition of the Guideline included data up until 2010, we limited our search to papers published in English from 2010 to May 2021.

Our inclusion criteria mean that only manuscripts that undertook original data collection or analysis were included; we included quantitative studies (comparative and non-comparative), qualitative and mixed-methods studies, reports, PhD theses, and economic or legal analyses, that provided information on health and non-health impacts that could be related to the effects of GLs. We excluded those manuscripts that did not meet our inclusion criteria or did not have a clear connection with the intervention and our pre-defined outcomes.

The initial screening of the literature was done by MF and AF. Titles and abstracts were screened for eligibility using the Covidence® tool [11]. Full texts were then reviewed by MF and AF. FdL confirmed that these studies met the inclusion criteria (see further Additional file 2: PRISMA checklist). Data were extracted by FdL and AC. Where they arose, discrepancies were reviewed and discussed with AL and MR to ensure that all studies were suited to the study design. Such discrepancies were resolved through consensus.

To identify health and non-health outcomes of interest we used a preliminary assessment of the literature [12] on outcomes that could be linked to the effects of GLs. Outcomes linked to those seeking abortion included delayed abortion, continuation of pregnancy, opportunity costs, unlawful abortion, self-managed abortion (which may be lawful or unlawful, depending on the local applicable laws), disqualification from lawful abortion (i.e., exceeding legally imposed GLs and thus no longer qualifying for lawful abortion under the terms of the applicable law), disproportionate impact, and referral to another provider. Outcomes linked to health professionals included workload implications, stigmatization, system costs, and impact on the provider-patient relationship.

We further identified applicable standards (i.e., express treaty text, and decisions, interpretations, and elaborations from treaty bodies and special procedures) from international human rights law through a careful review of the corpus of international human rights law following the approach we have already described [9]. These standards were ones that expressly addressed GLs, as well as guidance and standards that relate to sexual and reproductive health and abortion more broadly and which were applicable to and had relevance for a rights-based analysis of GLs. To fully understand the implications of the findings from included studies for abortion law and policy, we applied these human rights standards to the extracted data, which enabled us to identify (a) which human rights standards are engaged by GLs, (b) whether the evidence suggests that GLs have positive or negative effects on the enjoyment of rights, and (c) where no data is identified from the manuscripts against outcomes of interest, whether human rights law provides evidence that can further elucidate the impacts and effects of GLs.

Results

The initial search generated 32,789 citations after duplicates were removed. We screened the titles and abstracts and conducted a full-text screening of 328 manuscripts resulting in 24 manuscripts being included in the final analysis (Fig. 1).

Manuscripts described data from the following settings: Australia [13], Belgium [14], Nepal [15], Netherlands [16], Mexico [17], South Africa [18], Spain [16], the UK [16, 19–21], and the USA [22–36]. The characteristics of the included manuscripts are presented in Table 1. The included studies contained information relevant to all outcomes apart from workload implications, stigmatization, and impact on the provider-patient relationship.

Analysis

We matched data from the included studies to our outcomes of interest. This was presented in evidence tables, presenting the impact of each finding on the outcome of interest and an overall conclusion on the impact of GLs on the outcome of interest. Employing an established approach, we used a visual representation of effect direction. This indicated whether the evidence extracted from a study suggested an increase (▲), decrease (▽), or no change (○) in the applicable outcome of interest, but did not indicate the magnitude of the effect [9].

Impact of the intervention on abortion seekers

A summary of the impacts of the intervention on abortion seekers and the application of human rights is presented in Table 2. Evidence identified per study and outcome is presented in Supplementary Table S1 (Additional file 3: Table S1).

Evidence from seven studies [15, 16, 21, 23, 28, 31, 35] suggests that GLs may lead to abortion delays, with greater effects among women seeking second-trimester abortions [23, 28], those living in areas where clinics are limited and remote [31], and women closest to gestational duration cut off [35]. One study suggests that where people are denied abortion having exceeded GLs, they may experience delays [15] as they visit multiple facilities or need to receive multiple referrals before finding a willing provider [15]. The association between GLs and delay has potential human rights obligations. State's human rights obligations include the obligation to take steps to reduce maternal mortality and morbidity to fulfill the rights to life and to the highest attainable standard of physical and mental health [7, 37], which can clearly be implicated by delays in accessing sexual and reproductive care. Furthermore, states' obligation to ensure

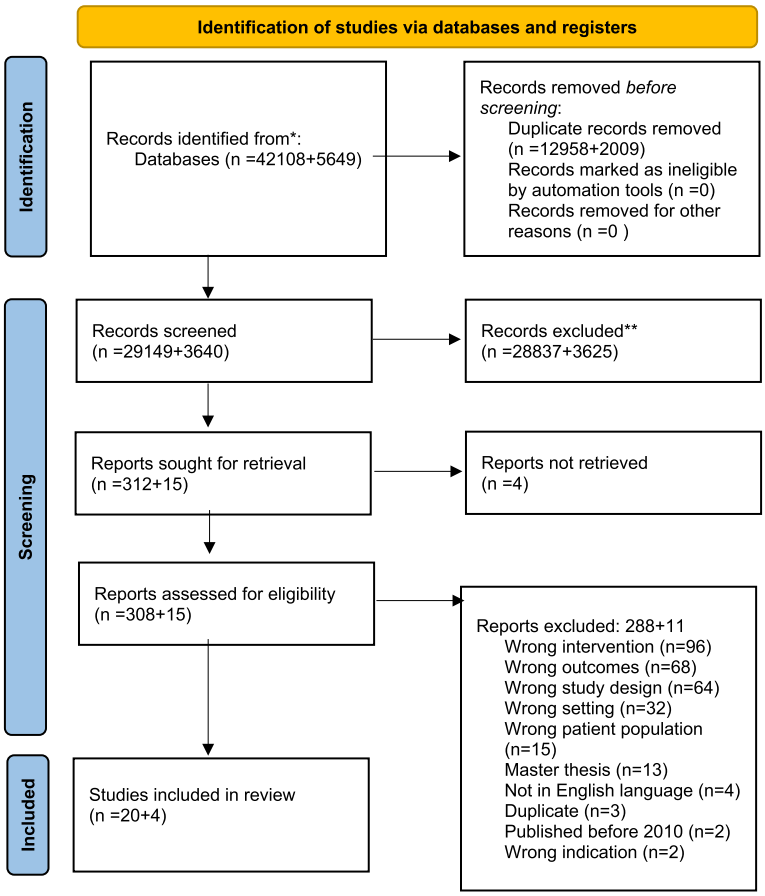

Fig. 1 Prisma flow diagram

equality and non-discrimination, including in sexual and reproductive healthcare, is clearly engaged by measures, like GLs, the impacts of which are unevenly distributed across different categories of women, including women with disabilities who have rights under both general international human rights law and the UN Convention on the Rights of People with Disabilities. Indeed, as the UN Committee on Economic, Social, and Cultural Rights has said, states' obligation to eliminate discrimination requires them to address restrictive abortion laws [37].

Evidence from six studies suggests that GLs not only delay access to abortion but contribute to disqualification from lawful abortion [13, 14, 16, 18, 20, 35] as, in practice, women do exceed GLs. Three studies provide evidence of such disqualification where pregnant people have cognitive impairments [13], where they experience a lack of information or shortage of accessible providers [16], where gestational duration is miscalculated by health workers [16], or where they are subject to a mandatory waiting period that pushes them over the GL [14]. One included study estimated that in the USA, 5278 women were denied an abortion due to GLs in 2008, of whom 4143 (78%) carried their pregnancies to term [35]. Thus, as well as implicating the general right to determine the number and spacing of one's children under the Convention on the Elimination of all Forms of Discrimination against Women (Article 16), these studies reiterate the implications of GLs for the right to equality and non-discrimination in sexual and reproductive health.

It is very well established as a matter of international human rights law that states may not regulate abortion in a way that causes women to avail of unlawful abortion. Ensuring "measures to prevent unsafe abortion" [37] and ensuring that restrictions on access to abortion do not "jeopardize women's and girls' lives" [7] are core obligations under international human rights law. However, evidence from three studies suggests that GLs operate as barriers to lawful abortion so some women seek unlawful [18, 31] or self-managed abortion [15, 31] (which may also be unlawful). While unlawful and self-managed abortions are not necessarily unsafe they can be, and regulatory approaches that cause pregnant people to have recourse to unlawful abortion raise clear questions of human rights compliance.

Table 1 Characteristics of included studies

Author/year	Country	Methods	Participants/data
Aztlan et al. 2018 [22]	USA	Prospective cohort study ($n=798$)	Women, 15–46 years, who sought an abortion at one of 30 healthcare facilities across the country
Bhardwaj et al. 2020 [23]	Texas and New Mexico, USA	Retrospective cohort study ($n=650$)	Chart data from Texas ($n=350$) and New Mexico ($n=300$) patients obtaining an abortion pre- and post-new gestational limit
Biggs et al. 2020 [24]	USA	Prospective cohort study: baseline interviews ($n=928$)	Data from the Turnaway study (https://www.ansirh.org/research/ongoing/turnaway-study) combined with measurements of abortion stigma 1 week and 5 years after being turned away
Bullard et al. 2018 [25]	USA	Cost-effective analysis ($n=921$)	Theoretical cohort of women diagnosed with fetal congenital diaphragmatic hernia
Burgen et al. 2010 [13]	Melbourne, Australia	Retrospective cohort study ($n=20$)	Women with intellectual disabilities and women with acquired brain injuries
Cameron et al. 2015 [19]	Scotland, UK	Cross-sectional study ($n=267$)	Women seeking abortion services over a 12-month period with a gestational age of 16 weeks or above
Cooney et al. 2017 [26]	USA	Cross-sectional study ($n=268$)	Genetic counselors with prenatal experience with a mean of 8.7 years of experience
De Zordo et al. 2020 [16]	UK, Netherlands, Spain	Mixed methods study: Cross-sectional survey (n = 204) and in-depth interviews (n = 30)	Pregnant people aged 18 years or above, who traveled to abortion clinics in the United Kingdom, Netherlands, or Spain from EU countries
Gerdts et al. 2016 [20]	London and Liverpool, UK	Cross-sectional study ($n=58$)	Non-UK residents aged 15–46, traveling from 14 different countries to seek abortion services at 3 abortion clinics
Foster et al. 2012 [27]	USA	Retrospective review of clinic-based data ($n=5109$);	Patient records covering all abortions provided in a private clinic over a 12-month period
Foster et al. 2013 [28]	USA	Cross-sectional study ($n=441$)	Women who obtained an abortion at or after 20 weeks and women who obtained first-trimester abortions at 16 clinics across the country over a 2-year period
Hall et al. 2020 [29]	Georgia, USA	Retrospective cohort study ($n=360,972$)	Data on abortions provided in the state of Georgia over a 10-year period
Harries et al. 2015 [18]	Cape Town, South Africa	Qualitative in-depth interviews ($n=8$)	Women aged 20–34 years who had been turned away when seeking an abortion
Hawkins et al. 2020 [30]	USA	Retrospective cohort study using national vital statistics data covering maternal deaths (4767) and live births ($n=26,567,340$)	National vital statistics data covering maternal deaths and live births over a 2-year period
Jerman et al. 2017 [31]	Michigan and New Mexico, USA	Qualitative in-depth interviews ($n=29$)	Women aged 18–44 seeking abortion services at 6 facilities across two states
Miller et al. 2022 [32]	USA	Retrospective cohort study ($n=828$)	Data from the Turnaway Study (https://www.ansirh.org/research/ongoing/turnaway-study) combined with credit report data
Purcell et al. 2014 [21]	Scotland, UK	Qualitative in-depth interviews ($n=23$)	Women aged 17–39 seeking abortion services at or after 16 weeks of gestation
Puri et al. 2015 [15]	Nepal	Qualitative in-depth interviews ($n=25$)	Women aged 18–40 years with a gestational age > 12 weeks, who were denied an abortion at two healthcare facilities due to gestational limits

Table 1 (continued)

Author/year	Country	Methods	Participants/data
Ralph et al. 2019 [33]	USA	Prospective cohort study ($n=876$)	Women seeking abortion services, some of whom were denied an abortion due to gestational age limits, over a 2-year period
Rocca et al. 2013 [34]	USA	Prospective cohort study ($n=843$)	Women seeking abortion services who (a) presented just prior to gestational age limits, (b) were denied an abortion due to gestational age limits, or (c) had a first-trimester abortion, at 30 healthcare facilities over a 2-year period
Saavedra-Avenando et al. 2018 [17]	Mexico	Retrospective review of clinical patient records ($n=52,391$)	Clinical data on abortion services provided at 2 primary care clinics and 2 hospitals over a 9-year period
Upadhyay et al. 2014 [35]	USA	Retrospective cohort study ($n=683$)	Data from the Turnaway study (https://www.ansirh.org/research/ongoing/turnaway-study) combined with Guttmacher Census Data
Van de Velde et al. 2019 [14]	Belgium	Retrospective review of clinical patient records ($n=28,741$)	Clinical patient records of women seeking abortions at one healthcare facility over a 4-year period
White et al. 2019 [36]	Texas, USA	Cross-sectional study ($n=64,902$), mystery client calls ($n=$ not reported)	Individual-level vital statistics data on abortions before and after the implementation of a new law, combined with mystery client calls to abortion facilities and country-level population estimates

Table 2 Impact of GLs on abortion seekers (summary)

Outcome	Overall conclusion of evidence (A)	Application of human rights standards (B)	Conclusion evidence + human rights (C)
Delayed abortion	Overall evidence from 7 studies suggests that GLs may lead to abortion delays. The effects of GLs are greatest among specific populations: women seeking second-trimester abortions, those living in areas where clinics are limited and remote, and women closest to gestational age cut-offs	Gestational limits engage states' obligation to respect, protect, and fulfill the rights to life and health (by taking steps to reduce maternal mortality and morbidity including addressing unsafe abortion), and the right to equality and non-discrimination	GLs can result in delayed access to abortion care. Where such delays increase risks of maternal mortality or morbidity, they have negative implications for rights
Continuation of pregnancy	Overall, evidence from 6 studies suggests that GLs contribute to women continuing pregnancies after being denied an abortion due to their gestational age	Gestational limits engage states' obligation to respect, protect, and fulfill the rights to life and health (by ensuring abortion regulation is evidence-based and proportionate, that where it is lawful abortion is safe and accessible, and that provider refusal does not undermine or hinder access to abortion), and the right to decide on the number and spacing of children. Gestational limits 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 are 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	GLs may result in a continuation of pregnancy and unwanted birth. GLs can have a disproportionately negative effect on the health and physical and mental integrity of abortion seekers, on a woman's ability to decide whether or not to continue with the pregnancy, and on access to safe abortion in cases of sexual violence or therapeutic abortion with negative implications for rights
Opportunity costs	Overall, evidence from 18 studies suggests that GLs contribute to opportunity costs, including financial and emotional opportunity costs, time and travel, stigma, reduced aspirations, and reduced quality of life. Being denied an abortion due to a GL may have negative financial consequences that persist for years after the denial and may also negatively impact a woman's educational opportunities. Evidence from 1 study indicates that denial of abortion due to GLs does not impact the risk of subsequent unintended pregnancy. Evidence from two studies indicates that when GL is combined with other restrictions on abortion provision, access to abortion is reduced with subsequent increases in travel distance and out-of-state travel for abortion	Gestational limits engage states' obligation to respect, protect and fulfill the rights to life and health (by protecting people seeking abortion, and by ensuring abortion regulation is evidence-based and proportionate)	GLs may operate in a way that imposes significant opportunity costs on people seeking abortion. Failure to ensure GLs do not expose abortion seekers to harm, including long-term harm, has negative implications for rights

Table 2 (continued)

Outcome	Overall conclusion of evidence (A)	Application of human rights standards (B)	Conclusion evidence + human rights (C)
Unlawful abortion	Evidence from 2 studies suggests that when GLs are in place, some women will seek out unlawful abortion	Gestational limits engage states' obligation to respect, protect, and fulfill the rights to life and health (by taking steps to reduce maternal mortality and morbidity including addressing unsafe abortion, and by protecting people from the risks of unsafe abortion)	Disqualification from lawful abortion as a result of the application of gestational limits may lead people to seek abortion outside of the formal medical system. This may include recourse to unlawful abortion, which may be unsafe and thus have a negative impact on rights. Disqualification from lawful abortion as a result of the application of gestational limits can result in criminal liability when a pregnant person seeks abortion outside the formal system including availing of unlawful abortion. In such cases, gestational limits may operate as de facto criminalization provisions. The criminalization of abortion may result in a violation of the right to equality and non-discrimination, the right to security of a person, or the right to be free from torture, and cruel, inhuman, and degrading treatment
Self-Managed Abortion	Overall, findings from 2 studies suggest that GLs may contribute to attempts by women to self-manage an abortion	Gestational limits engage states' obligation to respect, protect, and fulfill the rights to life and health (by taking steps to reduce maternal mortality and morbidity including addressing unsafe abortion, and by protecting people from the risks of unsafe abortion)	Disqualification from lawful abortion as a result of the application of gestational limits may lead people to seek abortion outside of the formal medical system. This may include recourse to unlawful abortion, which may be unsafe and thus have a negative impact on rights. Disqualification from lawful abortion as a result of the application of gestational limits can result in criminal liability when a pregnant person seeks abortion outside the formal system including availing of unlawful abortion. In such cases, gestational limits may operate as de facto criminalization provisions. The criminalization of abortion may result in a violation of the right to equality and non-discrimination, the right to security of a person, or the right to be free from torture, and cruel, inhuman, and degrading treatment
Disqualification from lawful abortion	Overall, findings from 6 studies find that GLs may contribute to disqualification from lawful abortion	Gestational limits engage states' obligation to respect, protect, and fulfill the rights to life and health (by protecting people seeking an abortion, by ensuring that where it is lawful abortion is safe and accessible, and by ensuring that provider refusal does not undermine or hinder access to abortion), and the right to decide on the number and spacing of children	GLs may result in disqualification from lawful abortion and consequent recourse to unlawful and/or self-managed abortion. Where such abortion is unsafe, GLs have negative implications for rights. GLs may result in disqualification from lawful abortion and undermine or hinder access to abortion including in cases of sexual violence or therapeutic abortion

Table 2 (continued)

Outcome	Overall conclusion of evidence (A)	Application of human rights standards (B)	Conclusion evidence + human rights (C)
Disproportionate impact	Evidence from 7 studies suggests that GLs disproportionately impact abortion access for key populations; adolescents, women with cognitive disabilities, women living remote from abortion clinics, those who have lower levels of educational attainment, and those with less income	Gestational limits engage states' obligation to respect, protect, and fulfill the right to equality and non-discrimination	GLs have a disproportionate impact on particular populations including teenagers, women with cognitive impairments, women living in areas that are poorly served by abortion services, and women who are more susceptible to later detection of pregnancy. This disproportionate impact has negative implications for the right to equality and non-discrimination in the provision of sexual and reproductive healthcare
Referral to another provider	Overall, evidence from 1 study suggests that women who are denied an abortion, due to GLs, may experience multiple challenges in obtaining a referral to another provider	Gestational limits engage states' obligation to respect, protect, and fulfill the rights to life and health (by protecting people seeking an abortion, by ensuring that where it is lawful abortion is safe and accessible, and by ensuring that provider refusal does not undermine or hinder access to abortion)	Failure to regulate GLs so that their application does not undermine or hinder access to abortion has negative implications for rights

Evidence from six studies suggests that GLs are associated with the continuation of pregnancy [13, 15, 18, 19, 25, 35], with particular implications for at least some groups of pregnant people. One study suggests that a 20-week GL may increase the number of live births among women with pregnancies affected by fetal anomalies, specifically congenital diaphragmatic hernia [25], while another notes that GLs may contribute to the continuation of pregnancy among women with cognitive impairments [13]. GLs are also significantly more likely to lead to continuation of pregnancy among women who present at or beyond 20 weeks, compared with women presenting at 16–19 weeks [19]. These studies suggest that GLs impact negatively the right to determine the number and spacing of children, with one study suggesting that up to half of the people who are denied abortion due to GLs continue with their pregnancy [15]. Furthermore, the impacts of GLs on the continuation of pregnancy for people who present later in pregnancy or who have particular health conditions suggest further that GLs can result in violations of the right to equality and non-discrimination, considered above, and are therefore arbitrary and disproportionate. A further study, not identified in the initial review, affirms that denial of 'menstrual regulation' on the basis of exceeding the GL in Bangladesh is also associated with the continuation of pregnancy [38].

This is underpinned by findings from seven studies that suggest that GLs have disproportionate impacts on certain groups of pregnant people [13, 14, 16, 27–30, 35]. Apart from disqualification from lawful abortion due to exceeding a GL, these studies establish that GLs have restrictive impacts on people who are likely to detect pregnancy later (namely people with cognitive disabilities [13], adolescents [14, 17, 27], younger women [28, 35], women with less formal education [14, 17], and women with fewer resources [14, 35]), or to present for abortion later because they live remote from abortion clinics and undertake travel to access abortion [28, 29]. The right to the highest attainable standard of physical and mental health has equality and non-discrimination at its core, and states may not regulate abortion in a way that is discriminatory or has unequal effects. The evidence from this synthesis suggests that GLs are discriminatory in effect and erect barriers to access to abortion that are particularly burdensome for some populations. Among these are adolescents and people with disabilities in respect of whom states are obliged to ensure access to sexual and reproductive health, including abortion, on an equal basis with others under both general international human rights law and the UN Convention on the Rights of the Child and UN Convention on the Rights of Persons with Disabilities.

Whether people avail of abortion or not, evidence from 18 studies suggests that GLs are associated with significant opportunity costs [13, 16, 18, 20–26, 31–36]. Some women who seek abortion near GLs consider the existence of a GL to be judgmental [21]. People who are denied an abortion due to GLs and go on to parent do not have a higher rate of subsequent unintended pregnancy than those who receive an abortion close to the GL [22], but they do experience a higher degree of perceived community stigma [24], less relief, more regret, and more anger [34] in the aftermath of being denied abortion. These individuals also have reduced educational attainment [33], and can experience significant financial distress (including bankruptcy or eviction) for at least 4 years following abortion denial [32]. Denial of abortion due to GLs causes frustration and can expose women to multiple facility visits, referrals, judgment, and misinformation while they seek abortion elsewhere [15]. Where people do access abortion, evidence from the extracted studies suggests that they must undergo abortion travel [16, 20, 21, 25, 31, 35] and experience costs [20, 23, 25, 31, 35], delays [29, 36], stress, frustration [15], and distress [21, 26, 31]. In some cases, people travel only to find they have exceeded a GL in the destination jurisdiction or facility, imposing particularly large opportunity costs [18].

This substantial evidence of opportunity costs shows that GLs operate as barriers to abortion, even though international human rights law makes it clear that, where it is lawful, abortion must be accessible and that states should remove and should not impose barriers to accessing abortion. Evidence of opportunity costs establishes that GLs limit abortion seekers' enjoyment of rights including the right to the highest attainable standard of health. Given the evidence that GLs result in delays to abortion, are associated with availing of unlawful and potentially unsafe abortion, and have discriminatory effects on sub-populations of pregnant people, and the fact that, as the WHO puts it, "[w]hile methods of abortion may vary by gestational age pregnancy can safely be ended regardless of gestational age" [5] (i.e., that GLs are not required for safety or efficacy purposes), GLs are, on the face of it, arbitrary and disproportionate and thus incompatible with human rights.

Impact of the intervention on health professionals

A summary of the impacts of the intervention on health professionals and the application of human rights is presented in Table 3. Evidence identified per study and outcome is presented in Supplementary Table S2 (Additional file 4: Table S2).

Overall, evidence from six studies suggests that GLs increase system costs. These include an increase in

Table 3 Impact of GLs on health professionals (summary)

Outcome	Overall conclusion of evidence (A)	Application of human rights standards (B)	Conclusion evidence + human rights (C)
Workload implications	No evidence identified	Gestational limits engage states' obligations to protect, respect, and fulfill the right to health (by protecting healthcare professionals providing abortion care, and by ensuring goods and services are accessible and available)	GLs may hinder or undermine access to abortion and have associated workload implications. This may place significant burdens on healthcare professionals providing abortion care, with negative implications for both their rights and the rights of persons seeking to access abortion
Stigmatization	No evidence identified	Gestational limits engage states' obligations to protect, respect, and fulfill the right to health (by protecting healthcare professionals providing abortion care)	Disqualification from lawful abortion as a result of the application of gestational limits can expose abortion seekers to stigmatization and indignity, significant opportunity costs at the time and in the future, impediments to their access to safe abortion, and lack of access to accurate pre- and post-abortion information and care
System costs	Overall evidence from 6 studies suggests that GLs increase system costs by leading to increased rates of maternal mortality and poor health outcomes, increased second-trimester abortions, increased travel, bankruptcies, overdue bills, and evictions	Gestational limits engage states' obligation to respect, protect, and fulfill the rights to life and health (by taking steps to reduce maternal mortality and morbidity including addressing unsafe abortion, by protecting people seeking abortion, and by ensuring abortion regulation is evidence-based and proportionate)	GLs are associated with poor health outcomes and substantial opportunity costs and thus with exposure of abortion seekers to substantial costs and risks, with negative implications for rights
Impact on provider-patient relationship	No evidence identified	Gestational limits engage states' obligations to protect, respect, and fulfill the right to health (by protecting healthcare professionals providing abortion care, and by ensuring goods and services are accessible and available)	Failure to regulate provider-level-imposed GLs may expose abortion seekers to a negatively impacted relationship with their healthcare provider, with negative implications for rights

multiple-day and second-trimester procedures (increasing the burden on providers and facilities) [23, 36], decreased access to abortion for women with pregnancies affected by severe fetal anomalies [25], and increased maternal mortality [30]. These system costs impose additional burdens on health systems, thus impacting their availability and accessibility (and, hence, on prospective patient's right to the highest attainable standard of physical and mental health) [37]. Furthermore, decreased access to abortion for people whose pregnancies have been affected by severe fetal anomalies has significant human rights implications. States are obliged to ensure that abortion is available—and not merely lawful—where continuation of the pregnancy would cause severe pain and suffering including, but not limited, to situations where the fetus is not viable [7]. Where GLs operate to undermine such access, they implicate this obligation. The severity of the potential rights violations is indicated by decisions of the UN Human Rights Committee which has found that failure to ensure access to abortion in situations of fatal fetal anomaly can violate the right to be free from torture, cruel, inhuman, and degrading treatment [39, 40].

Discussion

The evidence considered as part of this synthesis shows that the imposition of GLs in abortion law and policy has significant negative implications for rights enjoyment. Despite this, even as states move to liberalize abortion law, GLs remain a paradigmatic element of abortion regulation in most jurisdictions. For example, recent abortion law reforms in Aotearoa New Zealand [41], Argentina [42], Gibraltar [43], and Ireland [44] have all introduced or maintained GLs. GLs are blunt instruments introduced to draw a line between lawful and unlawful abortion based purely on gestational duration and without any underpinning evidence of a safety or efficacy imperative to justify them. GLs do not prevent people from seeking abortion. Rather, as the evidence synthesized here attests, they constitute a regulatory barrier resulting in people seeking abortion outside of the formal legal system and in contexts that are unlawful and thus sometimes less safe or unsafe [45]. In many jurisdictions, GLs interact with the criminalization of abortion, with the GL determining the point at which abortion becomes a criminal offense. Where availing of abortion is criminalized, the evidence suggests that people are often less willing to seek assistance, information, or abortion aftercare where they need it [46–49], with significant health and non-health impacts [50].

Existing studies suggest that the unlawfulness of abortion, once a GL has been exceeded, may result in health workers exercising caution in pregnancy dating, either by requiring ultrasound scans purely to ensure satisfaction of legal grounds (resulting in resource drain and delay) or by erring on the side of caution where gestational duration is thought to be close to the cut off [51]. Given that pregnancy dating is itself often somewhat inexact [52], the imposition of GLs can further result in people being wrongly disqualified from lawful abortion because of inaccurate pregnancy aging. Thus, as they operate within the broader context of abortion restrictions, GLs may constitute barriers to abortion for all women, including but not limited to those who seek abortion having exceeded the GL.

Existing evidence suggests that the lack of GLs in law does not result in changes to the trends in the gestational duration of abortion; in other words, removing GLs is unlikely to result in later abortion, which may be one claimed rationale for the inclusion of GLs in law and policy. In high-income countries, most abortions take place using medication abortion (and that proportion is growing) and the vast majority (over 90%) of abortions take place in the first 12 weeks of pregnancy, including in Canada where there is no legal GL on access to abortion [53]. In England and Wales, where abortion is available on a broadly interpreted health ground up to 24 weeks of pregnancy [54], 89% of abortions were performed under 10 weeks gestation and only 1% of abortions were performed over 20 weeks gestation in 2021 [54]. In other words, in high-income settings, GLs appear not to be determinative of the gestational duration at which people seek abortion. Low- and middle-income countries (LMICs) account for more than 80% of worldwide abortions [56, 57], and a reported 97% of the world's unsafe abortions [58]. In LMICs, 90% of abortions take place in the first trimester, and access to first-trimester abortion in LMICs is increasing significantly with the availability of medication abortion [59]. In LMICs, then, as in high-income settings, GLs appear not to determine how early people access abortion; rather that is determined by the availability and accessibility of quality abortion early in pregnancy.

The implication of this, which is further demonstrated by the evidence reviewed here, is that GLs impact most on people who are least able to access abortion because of later detection of pregnancy, lack of access to abortion provisions, and lack of access to the resources required to avail of abortion. This is in addition to their effect in maintaining abortion's perception as an exception to general healthcare [60], and emerging evidence that GLs may result in excess infant deaths [61].

International human rights law neither expressly prohibits nor requires the use of GLs in abortion regulation. As already mentioned, the UN Working Group on the issue of Discrimination against Women in Law and

Practice recommends that abortion should be available without restriction as to reason in the first trimester [62], and later in cases of risk to the life or health, including the mental health, of the pregnant woman, rape, incest, and fatal impairment of the fetus. This reinforces the fact, as the evidence considered for this synthesis shows, that GLs can have significant human rights implications. Where GLs operate to delay or entirely deny access to abortion or result in people accessing unsafe abortion, this may increase risks of maternal mortality or morbidity and undermine physical and mental integrity. These effects in turn mean that the enjoyment of rights including the right to life, the right to the highest attainable standard of physical and mental health, and the right to decide on the number and spacing of children are reduced. States are required to arrange legal and regulatory frameworks in a way that protects individual rights, including in the context of abortion regulation. Thus, the rights-related impacts of GLs suggest a need for reform, including through legal change. This is reinforced by the ways in which GLs appear to operate in uneven ways, impacting disproportionately on some populations of pregnant people, so that GLs may violate the right to equality and non-discrimination and be arbitrary. Where GLs operate to deny safe abortion to women and girls pregnant following rape or incest or in cases where a pregnancy is not viable, they may also violate the absolute right to be free from torture, or cruel inhuman, or degrading treatment [7, 38, 39].

This evidence synthesis has limitations. Although the studies relate to nine settings, this is nevertheless limited when compared to the number of jurisdictions that impose GLs on access to abortion. Furthermore, studies from the USA are over-represented in this review, with fourteen of the included manuscripts relating to GLs there [22–36]. Of those, one [23] considers the impact of one intervention in Texas—HB2 (subsequently overturned by the US Supreme Court) [63]—which introduced a new GL, restrictions on medication abortion, an admitting privileges requirement, and an ambulatory surgery facilities requirement. Other studies also related to multi-part interventions, i.e. new laws or policies that included GLs and other restrictions on access to abortion. Seven of the reviewed studies emanated from the large-scale Turnaway study [22, 24, 28, 32–35]. Importantly, although international human rights law (the source for the human rights standards considered in this evidence synthesis) applies to the USA as a matter of international law, and where it has ratified the relevant treaties, the practice within the USA is for national and state-level constitutions to be considered the primary sources of human rights law. Thus, fundamental rights protections outlined in domestic law are more influential in that setting than international human rights law. This review also only contains manuscripts published in English.

Randomized controlled trials or comparative observational studies are neither necessary nor (generally) appropriate methods for seeking to understand how human rights protections are impacted by interventions. Human rights studies are often conducted without comparators and using qualitative methods. Although the lack of randomized controlled trials or comparative observational studies may be considered a limitation from a standard methodological perspective for systematic reviews, it is appropriate to attempt to identify the human rights law implications of law and policy interventions through the integrated approach applied here. Thus, even though the range of studies included was not suited to standard tools for assessing risk of bias or quality, such as GRADE [64], they are appropriate to the study objective of fully integrating human rights implications into our understanding of the effects of GLs as a regulatory intervention.

Finally, in line with the methodological approach pursued [9], the evidence synthesis engages exclusively with international, rather than regional or domestic, human rights law to develop a general understanding of the rights-related implications of GLs. The extent and manner in which an individual human rights standard applies in a specific setting will depend on factors such as the state's ratification of relevant human rights instruments and the relationship between international and domestic law in that setting [5].

Conclusions

Even as many states move to liberalize abortion law, GLs remain paradigmatic of abortion regulation. However, these legal limitations on a point in a pregnancy at which abortion may lawfully be provided are not based on evidence of either the safety or effectiveness of abortion or the needs and preferences of pregnant people. Furthermore, they produce rights-limiting impacts for pregnant people and, in some cases, result in arbitrary and disproportionate violations of legally protected rights. Given this, the persistence of GLs as part of the regulatory framework for abortion provision cannot be said to ensure an enabling environment for quality abortion care. Accordingly, the WHO has recommended against laws and other regulations that prohibit abortion based on GLs [5]. GLs for access to abortion should not be imposed by law and policy, which should instead operate to support rights-based, health-maximizing provision of sexual and reproductive health, including quality abortion care.

Abbreviations

GLs	Gestational age limits
LMICs	Low- and middle-income countries
WHO	World Health Organization

Supplementary Information

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Additional file 1. Search strategy.

Additional file 2. PRISMA Checklist.

Additional file 3. Supplementary Table 1 (Evidence table: Impact on the intervention on abortion seekers).

Additional file 4. Supplementary Table 2 (Evidence Table: The impact of the intervention on health professionals).

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Authors' contributions
AL and FdL developed the PICO and search strategies. AF and MF did the initial searches. AL, AC, MR and FdL reviewed and finalised data extraction and quality. FdL did the initial manuscript draft. AC prepared the tables and figures. All authors reviewed, finalised and approved the submitted text.

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Data availability
All data generated or analyzed during this study are included in this published article and its supplementary files.

Declarations

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Not applicable.

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Competing interests
The authors declare no competing interests.

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References

1. Boland R. Second trimester abortion laws globally: actuality, trends and recommendations. Reprod Health Matters. 2010;18(36):67–89.
2. Lavelanet AF, Schlitt S, Johnson BR, Ganatra B. Global abortion policies database: a descriptive analysis of the legal categories of lawful abortion. BMC Int Health Hum Rights. 2018;18(1):1.
3. Levels M, Sluiter R, Need A. A review of abortion laws in Western-European countries. a cross-national comparison of legal developments between 1960 and 2010. Health Policy. 2014;118(1):95–104.
4. WHO. Safe abortion: Technical and policy guidance for health systems. Geneva: WHO; 2012. https://apps.who.int/iris/bitstream/handle/10665/70914/9789241548434_eng.pdf?sequence=1.
5. WHO. Abortion care guideline. Geneva: WHO; 2022. https://apps.who.int/iris/rest/bitstreams/1394380/retrieve.
6. HRC. Report of the working group on the issue of discrimination against women in law and in practice. UN; 2018. https://digitallibrary.un.org/record/1637427/files/A_HRC_38_46-EN.pdf?ln=en.
7. HRC. General comment no.36: Article 6: Right to life. UN; 2019. https://digitallibrary.un.org/record/3884724/files/CCPR_C_GC_36-EN.pdf?ln=en.
8. Anand Grover. Interim report of the special rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health. UN; 2011. https://digitallibrary.un.org/record/710175/files/A_66_254-EN.pdf?ln=en.
9. de Londras F, Cleeve A, Rodriguez MI, Lavelanet A. Integrating rights and evidence: a technical advance in abortion guideline development. BMJ Global Health. 2021;6(2):e004141.
10. Lewin S, Gleton C, Munthe-Kaas H, Carlsen B, Colvin C, Gulmezoglu M, Noyes J, Booth A, Garside R, Rashidian A. Using qualitative evidence in decision making for health and social interventions: an approach to assess confidence in findings from qualitative evidence syntheses (GRADE-CERQual). PLoS Med. 2015;12(10): 001895.
11. Covidence. Melbourne, Australia: Veritas Health Innovation, accessed December 2019. Available atcovidence.org. Available at: www.covidence.org.
12. Burris S, Ghorashi AR, Cloud LF, Rebouché R, Skuster P, Lavelanet A. Identifying data for the empirical assessment of law (ideal): a realist approach to research gaps on the health effects of abortion law. BMJ Global Health. 2021;6(6):e005120.
13. Burgen B. Women with cognitive impairment and unplanned or unwanted pregnancy: a 2-year audit of women contacting the Pregnancy Advisory Service. Aust Soc Work. 2010;63(1):18–34.
14. Van de Velde S, Van Eekert N, Van Assche K, Sommerland N, Wouters E. Characteristics of women who present for abortion beyond the legal limit in Flanders, Belgium. Perspect Sex Reprod Health. 2019;51(3):175–83.
15. Puri M, Vohra D, Gerdts C, et al. "I need to terminate this pregnancy even if it will take my life": a qualitative study of the effect of being denied legal abortion on women's lives in Nepal. BMC Women's Health. 2015;15(85). https://doi.org/10.1186/s12905-015-0241-y.
16. De Zordo S, Zanini G, Mishtal J, Garnsey C, Ziegler AK, Gerdts C. Gestational age limits for abortion and cross-border reproductive care in Europe: A mixed-methods study. BJOG: Int J Obstet Gynaecol. 2020;128(5):838–45.
17. Saavedra-Avendano B, Schiavon R, Sanhueza P, Rios-Polanco R, Garcia-Martinez L, Darney BG. Who presents past the gestational age limit for first trimester abortion in the public sector in Mexico City? PLOS ONE. 2018;13(2):e0192547.
18. Harries J, Gerdts C, Momberg M, Foster DG. An exploratory study of what happens to women who are denied abortions in Cape Town, South Africa. Reproductive Health. 2015;12(21):21.
19. Cameron ST, Riddell J, Brown A, Thomson A, Melville C, Flett G, et al. Characteristics of women who present for abortion towards the end of the mid-trimester in Scotland: National audit 2013–2014. Eur J Contracept Reprod Health Care. 2015;21(2):183–8.
20. Gerdts C, DeZordo S, Mishtal J, Barr-Walker J, Lohr PA. Experiences of women who travel to England for abortions: An exploratory pilot study. Eur J Contracept Reprod Health Care. 2016;21(5):401–7.
21. Purcell C, Cameron S, Caird L, Flett G, Laird G, Melville C, et al. Access to and experience of later abortion: Accounts from women in Scotland. Perspect Sex Reprod Health. 2014;46(2):101–8.

22. Aztlan EA, Foster DG, Upadhyay U. Subsequent unintended pregnancy among us women who receive or are denied a wanted abortion. J Midwifery Womens Health. 2018;63(1):45–52.
23. Bhardwaj NR, Murray-Krezan C, Carr S, Krashin JW, Singh RH, Gonzales AL, et al. Travelling for rights: Abortion trends in New Mexico after passage of restrictive Texas legislation. Contraception. 2020;102(2):115–8.
24. Biggs MA, Brown K, Foster DG. Perceived abortion stigma and psychological well-being over five years after receiving or being denied an abortion. PLOS ONE. 2020;15(1):e0226417.
25. Bullard KA, Shaffer BL, Greiner KS, Skeith AE, Rodriguez MI, Caughey AB. Twenty-week abortion bans on pregnancies with a congenital diaphragmatic hernia. Obstet Gynecol. 2018;131(3):581–90.
26. Cooney C, Hercher L, Bajaj K. Genetic counselors' perception of the effect on practice of laws restricting abortion. J Genet Couns. 2017;26(5):1059–69.
27. Foster DG, Gould H, Taylor J, Weitz TA. Attitudes and decision making among women seeking abortions at one U.S. clinic. Perspect Sex Reprod Health. 2012;44(2):117–24.
28. Greene Foster D, Kimport K. Who seeks abortions at or after 20 weeks? Perspect Sex Reprod Health. 2013;45(4):210–8.
29. Hall KS, Redd S, Narasimhan S, Mosley EA, Hartwig SA, Lemon E, et al. Abortion trends in Georgia following enactment of the 22-week gestational age limit, 2007–2017. Am J Public Health. 2020;110(7):1034–8.
30. Hawkins SS, Ghiani M, Harper S, Baum CF, Kaufman JS. Impact of state-level changes on maternal mortality: A population-based, quasi-experimental study. Am J Prev Med. 2020;58(2):165–74.
31. Jerman J, Frohwirth L, Kavanaugh ML, Blades N. Barriers to abortion care and their consequences for patients traveling for services: Qualitative findings from two states. Perspect Sex Reprod Health. 2017;49(2):95–102.
32. Miller S, Laura R. Wherry and Foster DG. The economic consequences of being denied an abortion. National Bureau of Economic Research; 2022. https://www.nber.org/system/files/working_papers/w26662/w26662.pdf.
33. Ralph LJ, Mauldon J, Biggs MA, Foster DG. A prospective cohort study of the effect of receiving versus being denied an abortion on educational attainment. Womens Health Issues. 2019;29(6):455–64.
34. Rocca CH, Kimport K, Gould H, Foster DG. Women's emotions one week after receiving or being denied an abortion in the United States. Perspect Sex Reprod Health. 2013;45(3):122–31.
35. Upadhyay UD, Weitz TA, Jones RK, Barar RE, Foster DG. Denial of abortion because of provider gestational age limits in the United States. Am J Public Health. 2014;104(9):1687–94.
36. White K, Baum SE, Hopkins K, Potter JE, Grossman D. Change in second-trimester abortion after implementation of a restrictive state law. Obstet Gynecol. 2019;133(4):771–9.
37. CESCR. General comment No.22 on the right to sexual and reproductive health (article 12 of the international covenant on economic, social and cultural rights). UN; 2016. https://digitallibrary.un.org/record/832961/files/E_C.12_GC_22-EN.pdf?ln=en.
38. Hossain A, Moseson H, Raifman S, Gerdts C, Biswas KK, Foster DG. "How shall we survive": a qualitative study of women's experiences following denial of menstrual regulation (MR) services in Bangladesh. Reprod Health. 2016;13(1):86 PMID: 27449219.
39. HRC. Views adopted by the committee under article 5(4) of the optional protocol, concerning communication no.2324/2013 (Mellet v Ireland). UN; 2016. https://docstore.ohchr.org/SelfServices/FilesHandler.ashx?enc=6QkG1d%2fPPRiCAqhKb7yhstcNDCvDan1pXU7dsZDBaDWq2ShUS3gWuQt0jIYwCgT%2f5gI8Mq%2bntSwqPXzhc3wErblBJCSplHroDZxs6KmGL8We%2bklq6J%2bxGt%2f5XJG7LmzVYiHocor0PGAURHw8Desi8CM1WH5faQ3JlXHoLysEJSc%3d.
40. HRC. Views adopted by the committee under article 5(4) of the optional protocol, concerning communication no.2425/2014 (Whelan v Ireland). UN; 2017. https://docstore.ohchr.org/SelfServices/FilesHandler.ashx?enc=6QkG1d%2fPPRiCAqhKb7yhsukPtYsnxNH1DBeueuCbK4iaT1CQuaQlRXRsqX35MhzhPVBDLP%2foSNzLTSJ0IXi4t9AtMtgomUkKZOFepoQlzWcZr268QJahAOPASoVK7e7qVxqPQx716xyBZuJn7ljWXQ%3d%3d.
41. Abortion Legislation Act 2020. https://www.legislation.govt.nz/act/public/2020/0006/latest/whole.html#LMS237600.
42. Ley de Interrupción Voluntaria del Embarazo 2020. https://www.argentina.gob.ar/noticias/ley-no-27610-acceso-la-interrupcion-voluntaria-del-embarazo-ive-obligatoriedad-de-brindar.
43. Crimes (Amendment) Act 2019. https://www.gibraltarlaws.gov.gi/legislations/crimes-amendment-act-2019-4693.
44. Health (Regulation of Termination of Pregnancy) Act 2018. https://www.irishstatutebook.ie/eli/2018/act/31.
45. Ganatra B, Gerdts C, Rossier C, Johnson BR, Tunçalp Ö, Assifi A, et al. Global, regional, and subregional classification of abortions by safety, 2010–14: Estimates from a bayesian hierarchical model. The Lancet. 2017;390(10110):2372–81.
46. Aitken K, Patek P, Murphy ME. The opinions and experiences of Irish obstetric and gynaecology trainee doctors in relation to abortion services in Ireland. J Med Ethics. 2017;43(11):778–83.
47. Casas L, Vivaldi L. Abortion in Chile: The practice under a restrictive regime. Reprod Health Matters. 2014;22(44):70–81.
48. Shahawy S. The unique landscape of abortion law and access in the occupied Palestinian territories. Health Hum Rights. 2019;21(2):47–56.
49. Nara R, Banura A, Foster AM. Exploring Congolese refugees' experiences with abortion care in Uganda: a multi-methods qualitative study. Sexual and Reproductive Health Matters. 2019;27(1):262–71.
50. de Londras F, Cleeve A, Rodriguez MI, Farrell A, Furgalska M, Lavelanet A. The impact of criminalisation on abortion-related outcomes: a synthesis of legal and health evidence. BMJ Global Health. 2022;7(12):e010409.
51. Abortion Rights Campaign and Lorraine Grimes. Too Many Barriers: Experiences of Abortion in Ireland after Repeal. Abortion Rights Campaign; 2021. https://www.abortionrightscampaign.ie/facts/research/.
52. American Pregnancy Association. Calculating conception. American Pregnancy Association. 2022. Available from: https://americanpregnancy.org/while-pregnant/calculating-conception-due-date/. Cited 2023 Jan 22.
53. Popinchalk A, Sedgh G. Trends in the method and gestational age of abortion in high-income countries. BMJ Sexual & Reproductive Health. 2019;45(2):95–103.
54. Abortion Act 1967. https://www.legislation.gov.uk/ukpga/1967/87/contents.
55. Department of Health and Social Care. Abortion statistics, England and Wales: 2021. GOV.UK. Available from: https://www.gov.uk/government/statistics/abortion-statistics-for-england-and-wales-2021/abortion-statistics-england-and-wales-2021. Cited 2023 Jan 22.
56. Chae S, Desai S, Crowell M, Sedgh G, Singh S. Characteristics of women obtaining induced abortions in selected low- and middle-income countries. PLOS ONE. 2017;12(3):e0172976.
57. Sedgh G, Bearak J, Singh S, Bankole A, Popinchalk A, Ganatra B, et al. Abortion incidence between 1990 and 2014: Global, regional, and subregional levels and trends. The Lancet. 2016;388(10041):258–67.
58. Sonia Correa. Abortion is a global political issue. DAWN Informs; 2003. https://www.dawnnet.org/uploads/documents/PAPER_SONIA_Abortion%20is%20a%20Global%20Issue_SRHR.pdf.
59. Andrea H, Katea S. First trimester abortion care in low- and middle-income countries. Clin Obstet Gynecol. 2021;64(3):449–59.
60. Millar E. Maintaining exceptionality: Interrogating gestational limits for abortion. Soc Leg Stud. 2021;31(3):439–58.
61. Karletsos D, Stoecker C, Vilda D, Theall KP, Wallace ME. Association of state gestational age limit abortion laws with infant mortality. Am J Prev Med. 2021;61(6):787–94.
62. HRC. Report of the working group on the issue of discrimination against women in law and in practice. UN; 2016. https://digitallibrary.un.org/record/843061/files/A_HRC_32_44-EN.pdf?ln=en.
63. Whole Woman's Health v Hellerstedt (2016) 579 U.S. 582. https://supreme.justia.com/cases/federal/us/579/15-274/case.pdf.
64. Alonso-Coello P, Schünemann HJ, Moberg J, Brignardello-Petersen R, Akl EA, Davoli M, et al. Grade evidence to decision (ETD) frameworks: a systematic and transparent approach to making well informed healthcare choices. 1: Introduction. BMJ. 2016;353(1):1–10.

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