Review

Safe abortion services: a reproductive health imperative

Iqbal H. Shah

Abstract

Objective: This paper considers the reproductive health rationale for safe abortion by reviewing the evidence on the levels and trends in the incidence of abortion worldwide and by region, explores the linkages of contraceptive prevalence, switching and discontinuation, unmet need for family planning and abortion, as well as examines the consequences when safe abortion is legally restricted. **Methods**: A search of published material was conducted on PubMed database and of key journals in reproductive health and public health. In addition, the database maintained by the World Health Organization on unsafe abortion incidence and mortality due to unsafe abortion and the database on contraceptive prevalence and unmet need for family planning maintained by the United Population Division were used. The relevant information was extracted, collated and analyzed by themes covered in this paper. **Results**: Each year an estimated 43.8 million abortions take place worldwide, 21.6 million of these under unsafe conditions or by unskilled providers. Approximately, 47,000 maternal deaths each year globally are due to complications of unsafe abortion. Nearly, all unsafe abortions (98%) and deaths due to unsafe abortion (all, except 90 deaths) take place in developing countries and in countries where legal access to safe abortion is restricted. While safe abortion rates have declined, unsafe abortion rates continue to be high and largely unchanged since 2000. **Conclusion**: Deaths due to unsafe abortion are entirely preventable by improving access to modern methods of contraception and to safe abortion services. There is a strong public health, reproductive health and human rights rationale for making safe abortion services accessible to all women.

Key words: Induced abortion, global and regional levels, contraceptive prevalence, unmet need, legal grounds.

Güvenli düşük hizmetleri: Bir üreme sağlığı zorunluluğu

Özet

Amaç: Bu yazı üreme sağlığı bağlamında güvenli düşük konusunu inceliyor. Yazıda dünyada ve bölge bazında düşük oranları ve eğilimi konusundaki veriler inceleniyor, kontraseptif yaygınlığı, yöntem değiştirme ve bırakma, aile planlamasında karşılanmamış ihtiyaç ile düşük arasındaki ilişki araştırılıyor; güvenli düşük yasal olarak sınırlandığında ortaya çıkan sonuçlar gözden geçiriliyor. **Yöntem**: Bilgiler PubMed veritabanında ve temel üreme sağlığı ve halk sağlığı dergilerinde basılan kaynakların incelenmesi ile oluşturulmuştur.

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Bunun yanında, Dünya Sağlık Örgütü (DSÖ) tarafından düzenlenen güvensiz düşük sıklığı ve bundan kaynaklanan mortaliteyi izleyen veritabanı ve United Population Division tarafından düzenlenen kontraseptif yaygınlığı ve aile planlamasında karşılanmamış ihtiyacın izlendiği veritabanı da kullanılmıştır. Elde edilen bilgiler bu yazının planına göre gruplanarak yeniden biraraya getirilmiş ve analiz edilmiştir. **Bulgular:** Her yıl dünyada 43.8 milyon düşük olduğu tahmin edilmektedir. Bunların 21.6 milyonu güvensiz koşullarda ya da bu konuda becerisi olmayanlar tarafından gerçekleştiriliyor. Dünyada her yıl yaklaşık olarak 47,000 anne ölümü güvensiz düşüğün yol açtığı komplikasyonlardan kaynaklanıyor. Neredeyse bütün (%98) güvensiz düşükler ve onlardan kaynaklanan ölümler gelişmekte olan ve güvenli düşüğün yasal olarak sınırlandığı ülkelerde meydana geliyor. Güvenli düşük oranları azalırken güvensiz düşük oranı yüksek olmaya devam etmekte, bu durum 2000 yılından beri de pek değişmemektedir. **Sonuç**: Güvensiz düşükten kaynaklanan ölümler genelde önlenebilir. Bunun için çağdaş gebelikten korunma yöntemlerine ve güvenli düşük seçeneğine ulaşımı kolaylaştırmak gerekir. Güvenli düşük hizmetlerini bütün kadınların erişebileceği şekilde sağlamak için halk sağlığı, üreme sağlığı ve insan hakları ile ilgili çok güçlü gerekçeler vardır.

Anahtar Kelimeler: İsteyerek düşük, küresel ve bölgesel düzeyler, kontraseptif prevalansı, karşılanmamış gereksinim, yasal çerçeve

Introduction

When faced with an unwanted pregnancy, women all over the world obtain abortion, irrespective of the legal grounds under which safe abortion is permitted in the country. Induced abortion has indeed been documented throughout recorded history[1]. Methods used to induce an abortion in earlier times were dangerous and exerted a heavy toll on women's lives and wellbeing. Medical advances, especially the availability of safe and effective technologies and skills to perform induced abortion make abortion as one of the safest medical interventions. Yet, an estimated 22 million abortions continue to be performed unsafely each year, resulting in deaths of an estimated 47,000 women[2]. The provision of safe abortion, in spite of its clear and direct public and reproductive health implications, remains controversial.

With the objective to examine the reproductive rights and health rationale for safe abortion, this paper reviews the evidence on the levels and trends in the incidence of overall induced abortion and in safe and unsafe abortion. It considers the linkages of abortion, modern contraceptive prevalence, contraceptive use dynamics, accidental pregnancies, and unmet need for family planning. The paper also documents the current situation with regard to the legal grounds under which safe abortion is permitted and presents the maternal health consequences of legal restrictions.

Induced abortion: worldwide and regional levels and trends

Of the estimated 208 million pregnancies that occurred worldwide in 2008, 21% (43.8 million) ended in induced abortions[3]. Induced abortion exists in all regions of the world, though the relative distribution of safe and unsafe abortion differs (Table 1). Nearly half of all induced abortions are unsafe (21.6 million) and almost all of them (98%) occur in developing countries. Unsafe abortion is defined by the World Health Organization (WHO) as a procedure for terminating an unintended pregnancy carried out either by persons lacking the necessary skills or in an environment that does not conform to minimal medical standards, or both.

The highest regional induced abortion rate in 2008 was estimated at 32 per 1,000 women aged 15-44 years for Latin America and the Caribbean, followed by the rate of 29 for Africa. Abortions are mostly unsafe in these two regions. It is noteworthy that in regions where abortion is legally available on request or on broad socio-economic grounds, for example in the region composed of

developed countries, Europe and Northern America, the overall abortion rates are lower in regions where it is restricted (Table 1). The developed-developing region divide in rates of safe and unsafe abortion is striking and directly relates to the legal restrictions on access to safe abortion (Figure 1). Within Asia, abortion is safe and largely available in the populous region of East Asia that includes China.

The worldwide induced abortion rates have declined from 35 in 1995 to 28 per 1,000 women aged 15-44 years in 2008. The decline in abortion rates has been more pronounced in developed countries, where abortion is generally safe, from 39 in 1995 to 24 in 2008, as compared to developing countries, where abortion is mostly unsafe, from 34 in 1995 to 29 in 2008. While safe abortion rates continue to decline (Figure 2), unsafe abortion rates have remained constant since 2000 (Figure 3), suggesting little progress in improving access to safe abortion.

When access to safe abortion is legally restricted: health consequences of unsafe abortion

When access to safe abortion is legally restricted or services are not easily accessible, women turn to unsafe methods or unskilled providers for terminating an unplanned pregnancy. Unsafe abortion-related deaths and disability are difficult to measure because of underreporting. Given that these deaths or complications occur following a clandestine or illegal procedure, stigma and fear of punishment deter reliable reporting of the incident. It is especially difficult to get reliable data on deaths from unsafe second-trimester abortions[4].

Complications of unsafe abortion include haemorrhage, sepsis, peritonitis, and trauma to the cervix, vagina, uterus, and abdominal organs[5]. About 20 to 30 per cent of unsafe abortions cause reproductive tract infections and about 20 to 40 per cent of these results in upper genital-tract infection[6]. One in four women with unsafe abortion is likely to develop temporary or life-long disability requiring medical care[7]. A recent systematic review estimates the incidence of severe acute maternal morbidity attributed to unsafe abortion at 237 per 100,000 live births and a median ratio of severe complications at 596[8].

In 2008, an estimated 47,000 women died due to complications of unsafe abortion, about 62% of them in Africa (Table 2). The risk of death due to unsafe abortion varies among developing regions[9]. Unsafe abortion mortality ratios (number of maternal deaths due to unsafe abortion per 100,000 live births) varies from a high of 80 in East Africa to a low of 8 in Central America and 3 in Eastern Europe (Figure 4). Among the developing regions, African region had the highest ratio of 80 and the Latin America and the Caribbean the lowest ratio of 10 per 100,000 live births. The case-fatality rate for unsafe abortion is 460 per 100,000 unsafe abortion procedures in Africa and 520 in sub-Saharan Africa, compared to 30 in Latin America and the Caribbean and 160 in Asia[9] (Figure 5). When performed by skilled providers using correct medical techniques and drugs and under hygienic conditions, induced abortion is a very safe medical procedure. In the USA, for example, the case-fatality rate is 0.7 per 100,000 legal abortions[10].

Table 1. Estimated annual number and rates (per 1000 women aged 15-44 years) of safe and unsafe induced abortion, 2008

Region and Subregion (a)	Number of induced abortions (millions)			Abortion rate (per 1000 women aged 15-44)		
	Induced abortion	Safe abortion	Unsafe abortion	Induced abortion	Safe abortion	Unsafe abortion
World	43.8	22.2	21.6	28	14	14
Developed countries (b)	6.0	5.7	0.4	24	22	1
Developing countries (b)	37.8	16.6	21.2	29	13	16
Developing excl. Eastern Asia	*27.6*	*6.3*	*21.2*	*29*	*7*	*23*
Africa	**6.4**	**0.2**	**6.2**	**29**	**1**	**28**
Eastern Africa	2.5	0.1	2.4	38	2	36
Middle Africa	0.9	^	0.9	36	^	36
Northern Africa	0.9	^	0.9	18	^	18
Southern Africa	0.2	0.1	0.1	15	7	9
Western Africa	1.8	^	1.8	28	^	28
Asia(c)	**27.3**	**16.5**	**10.8**	**28**	**17**	**11**
Asia excl. Eastern Asia	*17.1*	*6.3*	*10.8*	*29*	*11*	*18*
Eastern Asia	10.2	10.2	°	28	28	°
South-central Asia	10.5	3.7	6.8	26	9	17
South-eastern Asia	5.1	2.0	3.1	36	14	22
Western Asia	1.4	0.6	0.8	26	11	16
Europe	**4.2**	**3.8**	**0.4**	**27**	**25**	**2**
Eastern Europe	2.8	2.5	0.4	43	38	5
Northern Europe	0.3	0.3	°	17	17	°
Southern Europe	0.6	0.6	°	18	18	°
Western Europe	0.4	0.4	°	12	12	°
Latin America	**4.4**	**0.2**	**4.2**	**32**	**2**	**31**
Caribbean	0.4	0.2	0.2	39	21	18
Central America	1.1	^	1.1	29	^	29
South America	3.0	^	3.0	32	^	32
Northern America	**1.4**	**1.4**	°	**19**	**19**	°
Oceania(c)	**0.1**	**0.1**	^	**17**	**14**	**2**

Figures may not exactly add up to totals because of rounding.

° No estimates are shown for regions where the incidence is negligible,

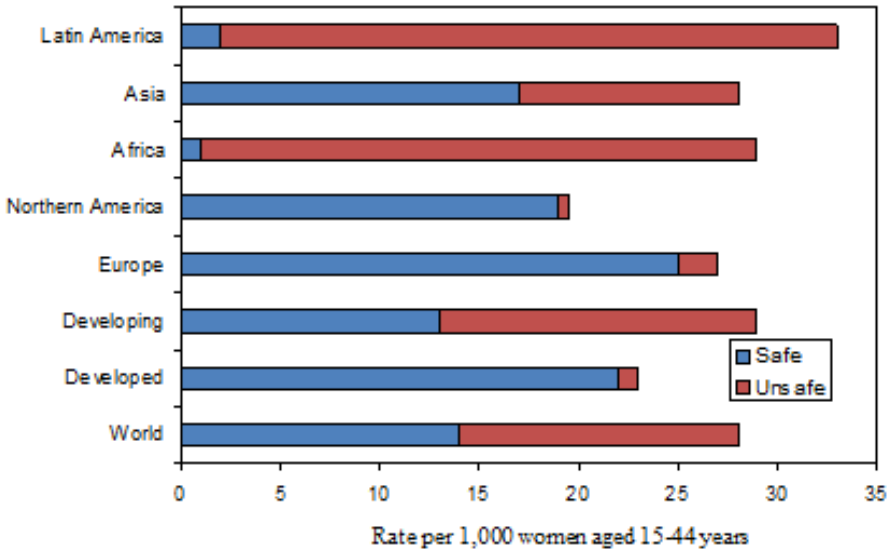
^ Numbers less than 0.1 million or rate less than 0.5.

(a) The classification of geographical regions and sub-regions follows the system used by the UN Population Division.

(b) Developed regions include Europe, North America, Japan, Australia and New Zealand; all others are classified as developing.

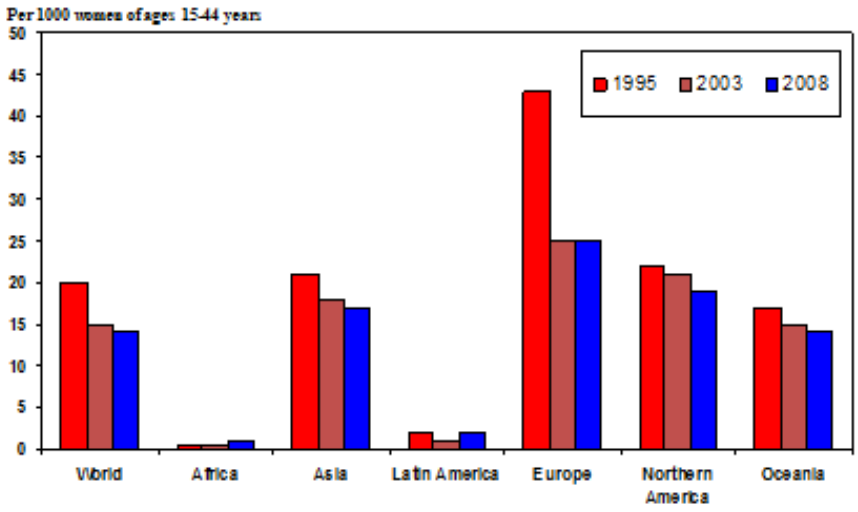
(c) WHO unsafe abortion estimates of these regions only include developing countries, excluding Japan, Australia and New Zealand from the regions; those unsafe abortion rates therefore differ.

Figure 1: Estimated safe and unsafe abortion rates per 1,000 women ages 15-44 years, 2008



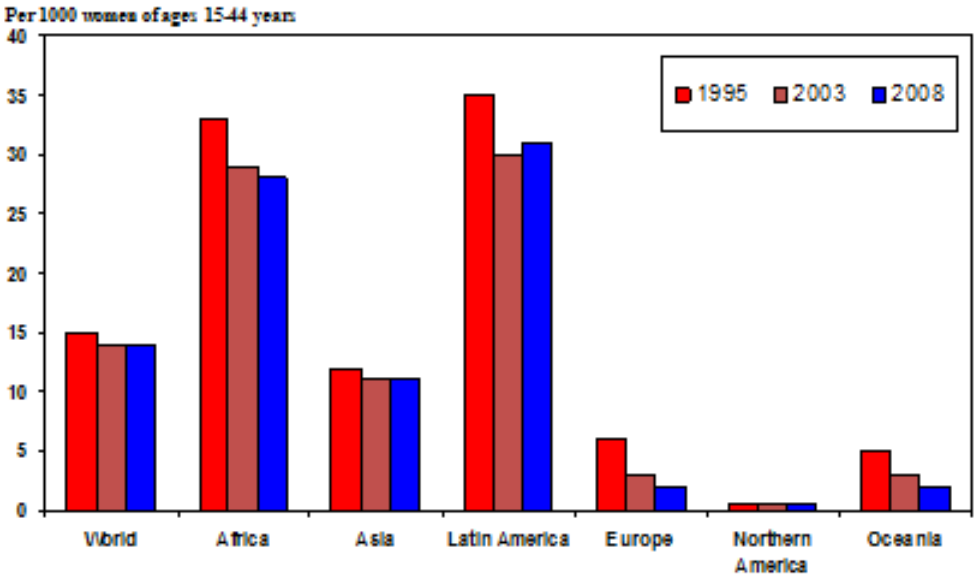
Source: [2]

Figure 2: Safe abortion rates, per 1,000 women ages 15-44 years, from 1995 to 2008



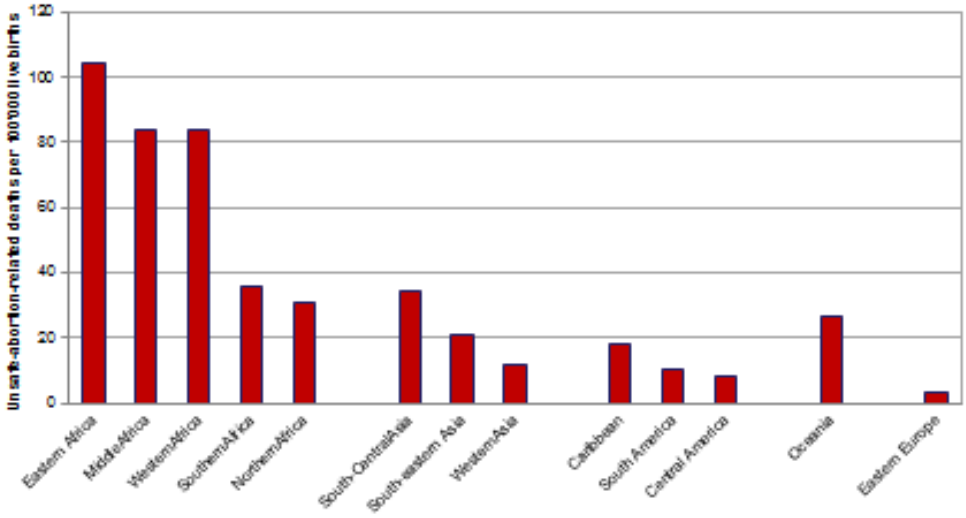
Source: [3]

Figure 3: Unsafe abortion rates, per 1,000 women ages 15-44 years, from 1995 to 2008



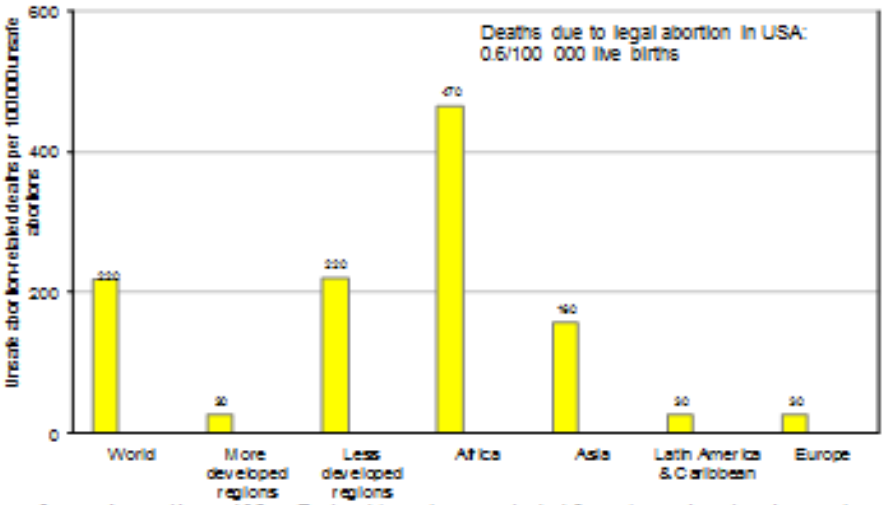
Source: [3]

Figure 4: Unsafe abortion mortality ratio per 100,000 live births, by region, 2008



Source: [9]

Figure 5: Unsafe abortion-related maternal deaths per 100,000 unsafe abortions, by region, 2008



Note: Japan, Australia, and New Zealand have been excluded from the regional estimates, but are included in the total for developed countries.

Source: [9]

Table 2: Estimated number of maternal deaths due to unsafe abortion and unsafe abortion mortality ratio per 100,000 live births, 2008

Region	Number of deaths due to unsafe abortion (rounded)	Unsafe abortion mortality ratio per 100,000 live births
World	47,000	30
Developed regions*	90	0.7
Developing regions	46,910	40
Africa	29,000	80
Asia*	17,000	20
Latin America & the Caribbean	1,100	10
Oceania*	100	30
Europe	90	1

Figures may not exactly add up to totals due to rounding.
*Japan, Australia and New Zealand have been excluded from the regional estimates, but are included in the total for developed countries.

Public health, reproductive rights and reproductive health

The public health impact of unsafe abortion has been recognized for a long time. As early as 1967, the World Health Assembly identified unsafe abortion as a serious public health problem in many countries[11]. WHO's Reproductive Health Strategy to accelerate progress towards the attainment of international development goals and targets, adopted by the World Health Assembly in 2004, noted: "As a preventable cause of maternal mortality and morbidity, unsafe abortion must be dealt with as part of the Millennium Development Goal on improving maternal health and other international development goals and targets"[12].

The number of declarations and resolutions signed by countries over the last two decades indicates a growing consensus that unsafe abortion is an important cause of maternal death that can and should be prevented through the promotion of family planning, sexual education, and the provision of safe abortion services to the full extent of the law. The consensus also exists that post-abortion care should be provided in all cases and that expanding access to family planning is critical to the prevention of unplanned pregnancy and unsafe abortion. Thus, the public health rationale for preventing unsafe abortion is clear and unambiguous.

The concept of reproductive rights was defined and accepted at the 1994 International Conference on Population and Development (ICPD) in Cairo, Egypt. Eliminating unsafe abortion is one of the key components of the WHO's Reproductive Health Strategy. The WHO Strategy is grounded in international agreed resolutions and global consensus declarations on human rights, including the right of all persons to the highest attainable standard of health; the basic right of all couples and individuals to decide freely and responsibly the number, spacing and timing of their children and to have the information and means to do so; the right of women to have control over, and decide freely and responsibly on, matters related to their sexuality, including sexual and reproductive health - free of coercion, discrimination and violence; the right of men and women to choose a spouse and to enter into marriage only with their free and full consent; the right of access to relevant health information; and the right of every person to enjoy the benefits of scientific progress and its applications[12].

Legal grounds under which abortion is permitted play a key role in realizing the rights to access services. While nearly all countries legally permit abortion to save a woman's life, the number of countries becomes fewer when the grounds on which abortion is permitted are liberal (Table 3). The developed-developing regional divide is noteworthy (Figure 6) for the liberal ground of economic or social reasons (80% and 19%, respectively) and when abortion is permitted on request (69% compared to 16%, respectively). Legal restrictions on abortion do not eliminate abortions, but cause them to be clandestine and unsafe.

The maternal mortality ratio (MMR) per 100,000 live births due to unsafe abortion is generally higher in countries with major restrictions and lower in countries where abortion is available on request or under broad conditions[13,14]. The accumulated evidence shows that the removal of restrictions on abortion results in reduction of maternal mortality due to unsafe abortion and, thus, a reduction in the overall level of maternal mortality[15,16]. The decline in maternal mortality in Nepal and South Africa has been attributed to reductions in the number of unsafe abortions following the liberalization of the abortion law and the expansion of safe abortion services.

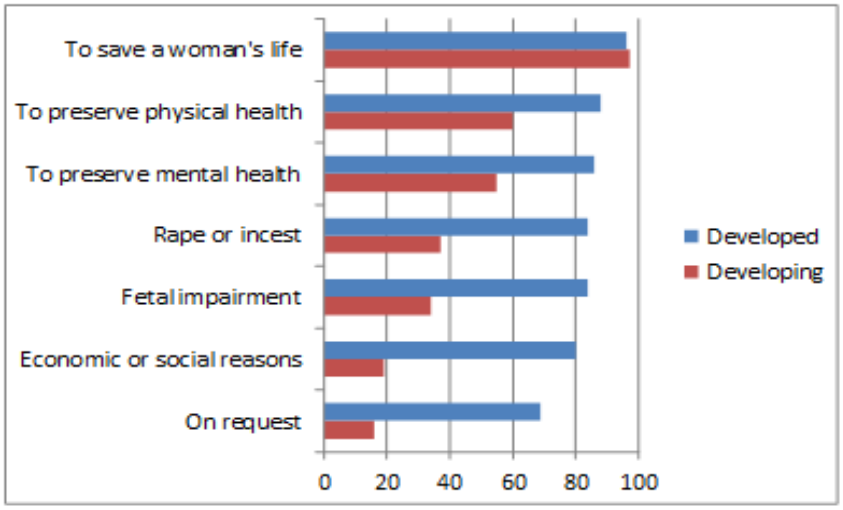
Table 3: Grounds on which abortion is permitted (per cent of countries) by region and sub-region, 2009

Country or area	To save the woman's life	To preserve physical health	To presserve mental health	Rape or incest	Fetal impairment	Economic or social reasons	On request	Number of countries
All countries	97	67	63	49	47	34	29	195
Developed countries	96	88	86	84	84	80	69	49
Developing countries	97	60	55	37	34	19	16	146
Africa	100	60	55	32	32	8	6	53
Eastern Africa	100	71	65	18	24	6	0	17
Middle Africa	100	33	22	11	11	0	0	9
Northern Africa	100	50	50	33	17	17	17	6
Southern Africa	100	80	80	60	80	20	20	5
Western Africa	100	63	56	50	44	6	6	16
Asia[a]	100	63	61	50	54	39	37	46
Eastern Asia	100	100	100	100	100	75	75	4
South-central Asia	100	64	64	57	50	50	43	14
South-eastern Asia	100	55	45	36	36	27	27	11
Western Asia	100	59	59	41	59	29	29	17
Latin America and the Caribbean	88	58	52	36	21	18	9	33
Caribbean	92	69	69	38	23	23	8	13
Central America	75	50	38	25	25	25	13	8
South America	92	50	42	42	17	8	8	12
Oceania	100	50	50	14	7	0	0	14

[a] Japan, Australia and New Zealand have been excluded from the regional count, but are included in the total for developed countries

(Source: United Nations, World abortion policies, 2011).

Figure 6: Grounds on which abortion is legally permitted in developed and developing regions, 2009 (percentage of countries)



Source: United Nations, *World Abortion Policies* 2011 Wallchart, New York: United Nations

Table 4: Estimated number of women using a contraceptive method and those experiencing an unintended pregnancy during the first year of contraceptive use, by type of contraceptive method, global data, 2009

Contraceptive method (1)	Estimated failure rate (typical use)[a] % (2)	Number of users[b] (thousands) (3)	Number of women with accidental pregnancy (typical use)[3] (thousands) (4)
Female sterilization Male sterilization Injectables IUD Pill Male condom Vaginal barrier Periodic abstinence Withdrawal	0.5 0.15 0.3 0.8 5.0 14 20 25 19	222,805 28,293 41,260 168,577 103,740 89,594 2,358 34,187 36,545	1,114 42 124 1,349 5,187 12,543 472 8,547 6,943
Total	4.7	727,359	36,321

[a]Trussell[23] estimates are based on USA data. Estimated failure rates in *typical use* cover method- and user-failure in using a contraceptive method in typical condition.
[b] Based on the estimated number of women aged 15-49 years, married or in union in 2009 and the percentage using specific contraceptive method[18].

Legal restrictions also cause inequities when well-off women can access skilled providers such as doctors and poor women had to resort to traditional unskilled providers. For example, 60% of rural poor compared to 18% of urban non-poor women in Guatemala had the abortion done by a traditional providers[17]. While only 4% of the rural poor got the abortion performed by a physician, 55% of urban non-poor were able to do so in Guatemala. Far fewer rural women had abortions performed by doctors than urban women: 8% compared to 32% in Guatemala; 9% compared to 26% in Mexico; 22% compared to 41% in Pakistan; and 16% compared to 42% in Uganda among rural and urban women, respectively[17].

Contraceptive use dynamics, accidental pregnancies and unmet need for contraception

Contraception is the primary means to prevent unintended pregnancy among sexually active women and, consequently, induced abortion. Contraceptive prevalence of any method was 63 per cent globally in 2009 among women of reproductive age (15-49 years) who were married or in a cohabiting union[18]. The use of a modern method was about seven percentage points lower, at 56 per cent. Contraceptive prevalence rose globally and in all regions, though it remains low in Africa, at 28 per cent for all methods and 22 per cent for modern methods. The prevalence is even lower in sub-Saharan Africa where the use of any contraceptive method was 22 per cent while the use of modern methods was 16 per cent in 2009. In contrast, contraceptive prevalence of any method was over 66 per cent in Europe, North America, Asia, and in Latin America and the Caribbean.

The use of modern contraception resulted in the lowering of the incidence and prevalence of unintended pregnancy and induced abortion even where abortion is available on request. The decline in abortion prevalence with the increase in the level of contraceptive prevalence has been noted for many countries[19, 20]. Recent data from 17 countries in Eastern Europe and Central Asia, where induced abortion used to be the main method for regulating fertility, and from the USA show that where the use of modern contraceptive methods is high, the incidence of induced abortion is low[21]. Induced abortion rates are the lowest in Western Europe where modern contraceptive use is high and abortion is generally legally available on request.

In countries with high contraceptive prevalence, the prevention of unintended pregnancies depends heavily on the ability and willingness of men and women to use methods with maximum effectiveness, to use them persistently and to switch promptly to alternative methods as and when the need arises. Overall discontinuation of contraceptive methods in developing countries is high. On average, 38% of couples had stopped use of their method within 12 months of starting in 19 countries[22]. The discontinuation rates ranged from 40% to 50% for pills, injectables, condoms, periodic abstinence and withdrawal. In contrast, only 13% of intrauterine device (IUD) users discontinued within 12 months. High discontinuation would not be a problem if women switch to another method promptly after discontinuation. However, in seven of the 17 countries, less than half of couples switched within three months of discontinuation because of side effects or other method-related reasons. Therefore, many women become exposed to the risk of unintended pregnancies and abortion because of delays in switching to alternative methods or abandoning the contraceptive use altogether.

Contraception alone, however, cannot entirely eliminate women's need for access to safe abortion services. Contraception plays no role in cases of forced sex that can lead to an unintended pregnancy. Also, no method is 100 per cent effective in preventing pregnancy. Using 2009 data on contraceptive prevalence[18] and the typical failure rates of contraceptive methods[23], it is estimated that

approximately 36 million women may experience an accidental pregnancy annually while using a method (Table 4). In the absence of safe abortion services, some may resort to unskilled providers.

Unmet need for family planning, broadly defined as the number of women who want to avoid or postpone a pregnancy but are not using any method of contraception, continues to persist despite having declined somewhat[24]. Overall, 11 per cent of women globally and in developing countries report an unmet need for family planning. In sub-Saharan Africa and among the least developed countries, unmet need for family planning is reported by one in four women in the reproductive age group of 15-49 years[18]. Women will continue to face unintended pregnancies as long as their family planning needs are not met or the methods they use fail. Therefore, the need for safe abortion will continue to persist even when the contraceptive prevalence is high. The stark reality of an estimated 22 million women undergoing unsafe abortion each year, with 47,000 of them dying from the complications is a powerful reminder for the need of safe abortion. Even a "low-risk" unsafe abortion in legally restricted context exposes women to an undue risk should an emergency develop in the process. In such cases, because of legal restrictions and stigma linked to having an abortion, women are reluctant to seek timely medical care if post-abortion complications occur.

"The right of every person to enjoy the benefits of scientific progress and its applications" - making safe abortion accessible

The public health and human rights rationale for safe abortion is overriding. Preventing unsafe abortion is also key to achieving reproductive health and attaining the Millennium Development Goal (MDG) on Improving Maternal Health. Liberalizing abortion laws is one of many steps required for men and women to exercise their right to enjoy the benefits of scientific progress and its application. The World Health Organization has recently released evidence-based updated recommendations on *Safe Abortion: Technical and Policy Guidance for Health Systems*[25]. In addition to clinical recommendations for the provision of safe abortion, the Guidance covers legal, human rights, policy and programmatic issues and provides evidence-based best practices. The accumulated evidence calls for removing health system barriers and unnecessary procedures and delays in accessing safe abortion. The Guidance recommends that safe abortion services should be readily available and affordable to the full extent of the law. It also states that the use of pre-abortion ultrasound screening is not necessary. The Guidance indicates that the trained mid-level health care providers can safely provide early abortion. The randomized clinical trials in South Africa and Viet Nam show that the trained mid-level health care providers can provide MVA as safely as doctors[26]. Another trial in Nepal shows that the trained nurses and auxiliary nurse midwives can provide medical abortion in the first trimester as safely as doctors[27]. The evidence thus indicates that appropriately trained mid-level health care providers are able to do both surgical and medical abortions as competently as are doctors in relatively low-resource settings. It is critical to align the national standards and practice to the evidence-based recommendations and best practices.

Conclusions

Whether restricted or not, a woman's chance of having an abortion is about the same. When access to safe abortion is legally restricted, the rates of unsafe abortion are high causing death and disability to women. However, when abortion is legally permitted, abortion rates are low and decline and deaths due to unsafe abortion are nearly non-existent. Contraceptive use reduces unintended pregnancies, but does not eliminate the need for safe abortion because the method can fail or the user may not be able to use the method consistently and correctly. The public health, reproductive health and human rights

rationale call for safe abortion to be accessible to all women. To realize the reproductive rights and to save women's lives,

programmatic, legal and policy reforms are thus needed for the provision of safe abortion.

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