

The Use of Forced Sterilisation as a Key Component of Population Policy: Comparative Case Studies of China, India, Puerto Rico and Singapore

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Sam Rowlands¹ and Pramod R. Regmi²

Abstract

In the years before the UN international human rights became fundamental values of law and ethics, family planning programmes designed to control population growth were adopted by many countries. This article compares the implementation of sterilisation campaigns in four countries that have used a degree of incentivisation or coercion. For each selected country, we aimed to explore two questions: How was mass sterilisation implemented, and were human rights protected? The countries are China, India, Puerto Rico and Singapore. We suggest that sterilisation should be readily available as part of an overall sexual and reproductive health service, but people's sexual and reproductive rights must take priority.

Keywords

Coercion, human rights, population, population policy, sterilisation

¹ Department of Medical Science & Public Health, Bournemouth University, Bournemouth, United Kingdom.

² Department of Nursing Science, Bournemouth University, Bournemouth, United Kingdom.

Corresponding author:

Sam Rowlands, Visiting Professor, Department of Medical Science & Public Health, Bournemouth University, Bournemouth Gateway Building, St Pauls Lane, Bournemouth BH8 8GP, United Kingdom.
E-mail: srowlands@bournemouth.ac.uk

Introduction

A total of 84 countries have policies designed to lower fertility rates (de Silva & Tenreyro, 2017). This article concerns itself with countries that have used coerced and/or targeted sterilisation of its citizens when they considered their population to be too large and/or growing too fast.

With an anti-natalist government policy framework in place, roughly one-third to one-half of candidates have been sterilised without valid consent. As elaborated below, in China and India, this amounts to numbers in the millions each year.

Over time, countries have tended to move away from explicit population control policies to an emphasis on development, regional growth, improved education and enhancement of sexual and reproductive rights. A global sustainable development framework should be in place with pathways that integrate gender equality and social justice (Hartmann et al., 2016). Both coercive population policies/programmes and forced sterilisation have been explicitly condemned by international bodies and professional organisations (WHO, 2014).

It is conceded that, in some countries, there is an overlap between family planning (FP) campaigns which are purely for the purpose of curbing population growth and those which target people living in poverty or vulnerable and marginalised population groups. However, this article focuses on countries with a general and generic set of policies to limit their populations.

Background to the Subject

Global Demographic Trends

There have been concern about the rise in world population roughly since 1800 when it exceeded the 1 billion mark. It now stands at 7.9 billion and is projected, according to modelling at the Institute for Health Metrics and Evaluation, to peak in 2064 at 9.73 billion and then to decline to 8.79 billion by 2100 (Vollset et al., 2020). The world population growth rate peaked as long ago as 1968 at 2.1% and is set to fall to 0.03% by 2100 (Roser et al., 2019).

The rate of population growth is falling in all regions of the world. The world's Total Fertility Rate (TFR) fell from 5 in 1960 to 2.5 in 2014; now, half the world's population live in territories with a TFR below 2.1 (Roser et al., 2019). These reductions have occurred in countries that have or have not employed population policies. Projections are that global TFR will decline to 1.66 by 2100 (Vollset et al., 2020).

Rights-Based Programmes

Human rights have been elaborated since end of the World War II (Pizzarossa, 2018). Sexual and reproductive rights are intrinsic elements of the human rights framework (Starrs et al., 2018). Without these rights, people's reproductive autonomy is undermined. There is a consensus that FP programmes should be rights-based (Pizzarossa, 2018). Forced sterilisation contravenes modern international

human rights law in that it does not respect an individual's dignity, nor their right to privacy and a family life and is a form of inhuman and degrading treatment. Furthermore, it is unethical and infringes professional codes of conduct.

Use of Coercion

Incentives lie along a continuum between voluntarism and gentle persuasion to locking people up until they submit. Free contraception is non-controversial. Inducements to use reversible methods start becoming controversial, especially when applied to targeted groups (Freedman & Isaacs, 1993). Incentivisation of sterilisation is coercive. The offer or promise of consequential benefits for those who undergo sterilisation is unjustifiable (Rowlands & Wale, 2019).

Programmes involving incentivisation of potential acceptors of sterilisation, and sometimes health service providers, have been conducted in countries such as India, Bangladesh and Sri Lanka (de Silva & Tenreyro, 2017). Incentives take many forms. Compensation to potential acceptors to cover lost wages and direct costs of food and transport associated with the operation is non-coercive and merely facilitates access to the method. However, fees to agents for recruitment of acceptors can be coercive; for this reason, such fees were discontinued in Bangladesh in 1988 (Cleland & Mauldin, 1991). By 1987, most countries' FP programmes were following guidelines that properly respected voluntarism.

The Case Study Countries

Methodology

This article uses a comparative approach (van Teijlingen et al., 2015) with countries as individual case studies. This allows exploration of whether the phenomenon under study is affected by common or specific factors across cases (Stake, 1995; Yin, 2014). Case studies stress the importance of national contexts when looking at universal issues such as forced sterilisation. A cross-national synthesis can then be built up.

Countries were selected on the basis that they had a population policy; sterilisation was a central part of that policy; and there was reported coercion in targeting people for sterilisation and consent for the procedure. Also, there had to be government statistics to describe trends. Published papers and publicly available material were scrutinised. Two research questions for each country were: (a) How was mass sterilisation implemented? And (b) were human rights protected?

The four selected countries are China, India, Puerto Rico and Singapore. Although large-scale sterilisation did not occur in Singapore, this country did have an elaborate system of incentivisation which cannot be considered to be voluntary. Despite being centrally controlled in terms of their political systems, there has been a lack of central responsibility in China and India; health programmes were delegated to provinces/states (Greenhalgh & Winckler, 2005; Harkavy & Roy, 2007). In Puerto Rico, sterilisations were carried out under the auspices of an eugenic law with a distinct flavour of ethnic targeting (Amy & Rowlands, 2018). The demographics of the four countries are summarised in Table 1.

Table 1. Demographics of the Four Countries (Year of Data in Brackets)

	China	India	Puerto Rico	Singapore
Pop before policy (million)	708 (1964)	361 (1951)	1.8 (1937)	1.9 (1965)
Pop at end (million)	1,407 (2015)	1,353 (2018)	2.4 (1960)	2.7 (1985)
Pop growth rate (%)	0.3 (2020)	1.1 (2020)	-1.7 (2017)	1.8 (2017)
Pop projection by Vollset for year 2100 (million)	732	1,093	1.1	6.8
CBR before policy	39.9 (1970)	43.6 (1955)	38.8 (1930–1939)	33.4 (1965)
CBR later	12.6 (2016)	20.0 (2015)	34.8 (1960)	17.0 (1985)
TFR before policy	6.2 (1965)	5.9 (1955)	5.1 (1937)	5.1 (1965)
TFR later	1.6 (2015)	2.4 (2015)	4.7 (1960)	1.7 (1985)
M sterilisations before policy	1,223 (1971)	2,396 (1956)	NK	0.05 (1970)
Peak M sterilisations (000s)	4,359 (1983)	6,196 (1976–1977)	NK	0.5 (1979)
F sterilisations before policy	1,745 (1971)	4,757 (1956)	NK	2.3 (1970)
Peak F sterilisations (000s)	16,400 (1983)	2,065 (1976–1977)	NK	10.3 (1976)
M sterilisation prevalence after policy (%)	4.5 (2006)	0.3 (2016)	1.4 (1968)	0.6 (1982)
F sterilisation prevalence after policy (%)	28.7 (2006)	36.0 (2016)	35.3 (1968)	22.3 (1982)
Sex ratio at birth M:F (2019)	112	110	105	105
Youth DR (2020)	25.2	38.9	24.8	16.5
Old-age DR (2020)	17.0	9.8	32.8	18.0
Global freedom (2020)	9	67	83	48

Sources: CIA World Factbook: <https://www.cia.gov/the-world-factbook/>; UN World Contraceptive Use: <https://www.un.org/en/development/desa/population/publications/dataset/contraception/wcu2019.asp>; UN World Population Prospects: <https://esa.un.org/unpd/wpp/Download/Standard/Population/>; World Bank data: <https://data.worldbank.org/indicator/SP.DYN.CBRT.IN>; Worldometers: <http://www.worldometers.info/world-population/>; Freedom House scores: <https://freedomhouse.org/countries/freedom-world/scores>; Our World in Data: <https://ourworldindata.org/grapher/fertility-rate-complete-gapminder>

Notes: CBR = crude birth rate; DR = dependency ratio; M/F = male/female; TFR = total fertility rate; NK = not known; pop = population.

China

China has been the most populous country in the world for more than 2,000 years and currently contains almost one-fifth of the world's citizens (Greenhalgh & Winckler, 2005). Following the famine from 1958 to 1962, there was a 'baby boom'. The 1964 Census estimated the population to be 694 million. In the 1960s, annual births ran at a level of 27 million. As China entered the 1970s, the country's population exceeded 800 million. Since 1971, birth planning had been a high priority of the Chinese

Communist Party (CCP) (Greenhalgh & Winckler, 2005). The 'later marriage, longer spacing, fewer children' campaign, of which sterilisation was an integral part, was toughened during the second half of the 1970s (Greenhalgh & Winckler, 2005). During an 8-year period, prompted at least in part by incentives, more than 20 million female sterilisations and 13 million vasectomies were performed (Greenhalgh & Winckler, 2005). Local cadres (public officials) resorted to coercion if repeated 'heart-to-heart talks' failed; people were visited by mobile surgical teams if they did not respond to persuasion in order to fulfil sterilisation quotas (Aird, 1990).

The post-Mao leadership was concerned that food consumption exceeded supply, literacy levels were low and cities were overcrowded. Officials decided that the population should be reduced to 750 million by 2080. In 1979, as a result of fear that the population would grow to 1.28 billion by 2000, the one-child policy was adopted and implemented in the following year (Greenhalgh & Winckler, 2005); this applied to couples from China's majority ethnic Han population only. Those so limiting themselves received benefits. An intrauterine device, or IUD (a steel ring without threads, making removal only possible with a hook) was compulsory after the first child. 'Out-of-plan' births triggered compulsory sterilisation of one spouse (Li, 1995). As late on as 1997, 50%–60% of women were being told nothing about sterilisation before the operation, that is, consent was invalid (Greenhalgh & Winckler, 2005).

Between 1980 and 2014, 107 million women were sterilised and 324 million IUDs were fitted. During the propaganda and sterilisation campaign of 1983–1984, there were 20.8 million sterilisations done in a single year, 16.4 million on women and 4.4 million on men (Greenhalgh & Winckler, 2005). Prevalence of female sterilisation reached 35.9% of women in a union aged 15–49 years in 1992 (UN, 2019).

In 2002, the 'violation of designated family planning limit fine' was launched; it was later euphemistically renamed the 'social support fee'. Couples having a second child without permission were fined between 10% and 50% of their annual income for a period of 5–14 years (Cooney & Li, 2001). Women knew that, if they gave birth to a child outside the one-child system, the child would be 'unregistered' and could not access public health and education services.

Following the Tiananmen Square military crackdown of 1989, there was further tightening of the population policy. Coercion re-established itself during the following 5 years or so. The one-child policy, combined with extensive sex-selective abortion, resulted in more than 20 million 'missing girls' up until 2010 (Solinger & Nakachi, 2016).

A particularly repugnant example of coercion took place in Puning City, Guangdong province. In April 2010, a task force of about 600 local cadres targeted 9,559 women who had contravened the one-child policy. Over the course of a 20-day campaign, 1,377 women or their relatives were detained (Bland, 2010). Most of the women ultimately submitted themselves to sterilisation after this intensely coercive exercise.

The CCP attributes 400 million averted births over 35 years to the one-child policy; demographers put the figure at only half of this. Between 1970 and 1980, the crude birth rate decreased from 40 to 22 per 1,000. The TFR fell from 6.3 in 1970 to 3.0 in 1980 and subsequently to 1.5 in 2000 (Figure 1). It has been

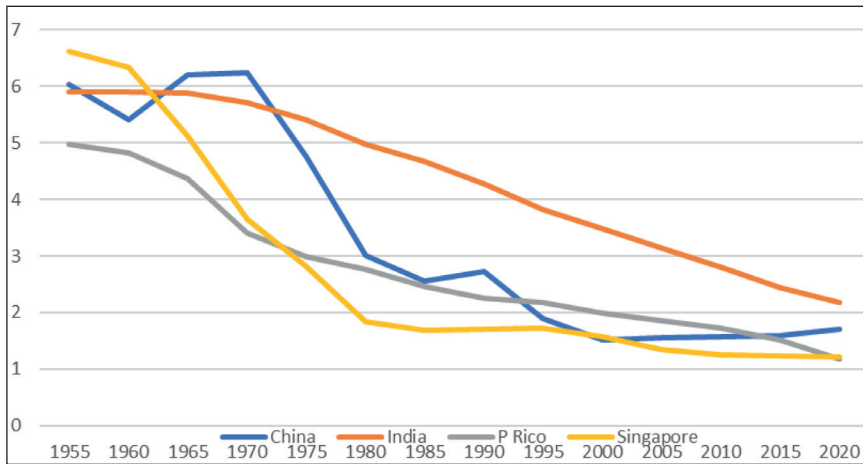


Figure 1. Total Fertility Rate*

Source: UN World Population Prospects <https://esa.un.org/unpd/wpp/Download/Standard/Population/>

Note: *The number of children that would be born per woman if they were to pass through the childbearing years, bearing children according to the current age-specific fertility rate.

estimated that the fertility decline associated with the one-child policy was no different from modelling based on a continuation of the later-longer-fewer programme alone (Gietel-Basten et al., 2019). China's 2010 census gave a population estimate of 1.3 billion. The population is projected to peak in 2024 at 1.43 billion and then decline steeply to 0.73 billion by 2100. The birth planning policy seriously impaired the physical health and emotional wellbeing of many Chinese women (Greenhalgh & Winckler, 2005). The phenomenon of adults out surviving their only child is tragic.

The CCP has realised that it needs to address the economic and health impact of its ageing society. In 2015, it was announced that the one-child policy was to be eased and a two-child family allowed. This was followed by further easing in 2021 to a three-child policy (Zhang, 2021). Nearly 9 million second children were born in China in 2016. However, subsequently, annual births have fallen for four successive years, from 18 million in 2016 to 12 million in 2020. The ratio of boy to girl births is highly skewed at 112 (Table 1). Societal family size desires have fallen considerably, so there is far less conflict between state and populace; a one-child family is now seen as the norm.

India

India is currently the second most populous country in the world. India's population exceeded the one billion mark in 1998. It is predicted that India's population will equal that of China in 2024 and then overtake it.

There have been more than 35 failed attempts by parliamentarians to insert a two-child policy into the Indian Constitution (Saxena, 2021). The government

adopted its population policy in 1952 (Harkavy & Roy, 2007). There were concerns over the population increase of one million every month. However, India's 4,000 FP clinics made negligible impact on the citizens who resided in 560,000 villages and 3,000 towns and cities (Harkavy & Roy, 2007). The clinic-based programme was replaced by an 'extended' FP programme, with a community workforce of 150,000 (Harkavy & Roy, 2007).

During Indira Gandhi's political 'Emergency' from 1975 to 1977, her son Sanjay Gandhi orchestrated a mass-sterilisation campaign (Vicziány, 1982a). This accentuated an already coercive approach that had been introduced during the period 1965–1974. It was called the 'Health Department-operated, Incentive-based, Target-oriented, Time-bound and Sterilisation-focused programme' (HITTS) (Harkavy & Roy, 2007). In 1966–1967, a target of 1.38 million sterilisations annually was set; in 1970–1971, this was increased to 4.51 million (Harkavy & Roy, 2007).

In addition to national policy, local initiatives were important. A district collector in Kerala developed the concept of the mass-vasectomy camp (Harkavy & Roy, 2007). In 1970, almost 100,000 men were sterilised in three camps in Kerala over 85 days. The doctors performing the sterilisations were complicit in the coercion; consent was largely invalid (Vicziány, 1982b). The doctors were incentivised with a fee (Wale & Rowlands, 2020).

By 1973, 11.2 million vasectomies and 3.1 million female sterilisations had been performed (Vicziány, 1982a). Around 4 million sterilisations per year were being 'achieved' just before the Emergency. During the Emergency, this number doubled to 8.2 million (Table 1; Vicziány, 1982a). In 1978 (the year of the so-called 'Setback'), the number of vasectomies fell to about 0.5 million per year and female sterilisations to about 3.6 million per year.

A majority of vasectomy adopters were illiterate, poor and from Scheduled Castes. Many Indian men were reluctant to undergo vasectomy; one of the prime reasons being a concern about high infant/child mortality. Information given about reversible contraception appears to have been generally inadequate or absent.

The excesses of Sanjay Gandhi's sterilisation campaign and the coercive measures that accompanied it created a backlash that resulted in the collapse of Indira Gandhi's government (Harkavy & Roy, 2007). In 1977, the population policy was 'democratised' with an emphasis on birth spacing, FP was renamed 'family welfare' and sterilisation targets were substantially reduced.

Total numbers of sterilisations are currently running at 3.36 million per year (MOHFW, 2020). Vasectomies, as a proportion of total sterilisations, have decreased from 20% in 2009–2010 to 1.4% in 2018–2019. There have been numerous examples of high levels of morbidity and mortality in Indian sterilisation camps. The Chhattisgarh sterilisation camp deaths in 2014 received more publicity than others (Sarojini et al., 2015).

In September 2016, the Supreme Court of India, in the case of *Devika Biswas v. Union of India*, ordered that sterilisation camps should cease within three years, a counsellor should see the candidate as well as a doctor and sterilisation targets should not result in coercion (Ashok, 2016). Extensive evidence was heard of poor-quality care in many states. Health Ministry data show that 1,434

sterilisation-related deaths occurred between 2003 and 2012. Between 2009 and 2012, the government paid compensation for 568 such deaths. The Court found that the gender bias in sterilisation was discriminatory against women. Camps are now stopping, but incentivisation could still continue. There is some evidence of lack of compliance with the Court order (Wadkar & Gandhi, 2017).

Although undoubtedly some individuals truly wish to control their fertility by sterilisation, the voluntariness of sterilisations in India has been questionable in general (Dhanraj, 1991). It is estimated that one-third of all women have been sterilised and, of these, as many as one-third did not give valid consent (Singh et al., 2021). Despite the Indian government announcing a 'target-free' approach to population control in 1996, in practice Accredited Social Health Activists (ASHAs) continue to work to sterilisation quotas, even if called by another name. State-level population policies stipulating two-child limits have been variously considered, adopted and rescinded (Mukherjee, 2021).

Projections are that the population will increase from 1.38 billion in 2017 to 1.61 billion in 2048 and thereafter decline steeply to 1.09 billion by 2100. A total fertility rate (TFR) lower than replacement level was reached in 2018. The TFR is projected to fall to 1.29 by 2100 (Vollset et al., 2020).

Puerto Rico

The smallest country of the four is Puerto Rico, a self-governing US island. Its population doubled between 1910 and 1950, leading to concern about overpopulation (Back et al., 1960). Puerto Rico was an early adopter of FP services. Over the years, Puerto Rico has been a 'test bed' for population policy and new contraceptive technology (Marks, 2001).

In 1937, Law 116, a birth control and eugenic sterilisation law (SSHRCC, 2017), was enacted and 22 FP clinics were opened. The clinics had backing from millionaire fertility control advocate and eugenicist, Clarence Gamble. A purported link between poverty and overpopulation was stressed. In 1939, Gamble started flying Puerto Rican doctors to New York to be trained in sterilisation techniques. In the years 1944–1950, the number of sterilisations performed almost doubled (Back et al., 1960). In 1949, when female sterilisations were estimated to be 3,000–4,000 annually, 18% of women delivering babies in hospitals were subsequently sterilised (Mass, 1977). No official sterilisation statistics from 1950 onwards were released, partly due to continuing unfavourable publicity at the time.

From 1957 until 1963, a swathe of private FP clinics and 11,000 sterilisation operations were funded by US philanthropy. Propaganda was issued about the benefits of sterilisation. Doctors and hospitals were reimbursed for their efforts. Public hospitals accepted a two-pint blood donation from low-income women as 'payment' for a sterilisation (Back et al., 1960).

In 1961, the birth rate was 31 per 1,000 (Mass, 1977). Although some sterilisations were voluntary, coercion was practised. At the Presbyterian Hospital, there was an unofficial policy to refuse admission for delivery to women who had three or more children unless they agreed to be sterilised. Consent processes were lacking or

inadequate. Women who had been sterilised were often not clear what had happened to them or felt they had no choice (García, 1982).

Although Law 116 was repealed in 1960, coerced sterilisation continued after this time. Female sterilisation is thought to have been a major factor in the decrease in fertility in the four decades following the end of World War II (Presser, 1969; Warren, 1987). By 1968, 34% of women aged 15–49 years in a union had been sterilised (UN, 2019). By 1996, the prevalence had peaked at 45.5%.

During the 1970s, there was intense pressure on women to control their fertility. A two-child family was promoted, and FP clinics were run in factories. During a two-year period, 24,000 women were sterilised (García, 1982).

Since 2005, the population has been declining, mainly due to the emigration of half a million people. The TFR had fallen to 1.2 by 2017; the population is projected to decline from 3.67 million in 2017 to 1.11 million in 2100 (Vollset et al., 2020). As a result of emigration of working-age people, the old-age Dependency Ratio (DR) has risen to a high level (Table 1).

Singapore

The island city-state of Singapore had a population of 5.9 million in 2020, with one of the highest population densities in the world. Singaporean population policy has been through several phases since it became a sovereign state in 1965 (Teng, 2007). Concerns about the high birth rate, which had peaked in 1957, led to a 3-month nationwide FP campaign. An increasing population was considered to be exacerbating existing overcrowding and poor housing. The Family Planning and Population Board launched a National Family Programme in 1966 with the aim of reaching replacement level (2.1 births per couple) by 1990. An incentivisation policy was introduced in 1969. Abortion and sterilisation were legalised in 1970. In 1972, Prime Minister Lee Kuan Yew set up a ‘Stop at Two’ campaign. Women without O-level qualifications were incentivised to be sterilised after their second child; the incentives were a week’s paid sick leave and a S\$10,000 down payment for the purchase of a subsidised apartment. The government added to this an expanding list of disincentives for families with more than two children. A replacement-level TFR was attained in 1975 (Figure 1). Female sterilisation operations peaked at 10,310 in 1976 and vasectomies at 495 in 1979 (Table 1).

In 1986, the government reversed its policy in response to falling birth rates; the awkward slogan was ‘Have Three or More (if you can afford it)’. Disincentives and penalties for larger families were removed. Women requesting sterilisation who had less than three children received compulsory counselling. The TFR levelled off in the 1980s and early 1990s (Figure 1). The population is projected to rise to 8.04 million in 2062 and then decline to 6.78 in 2100; the current TFR is extremely low at 1.22.

Comparisons Between the Four Countries

Coerced sterilisations took place in Puerto Rico from the 1930s to the 1970s. In Singapore, such procedures took place in the 1960s and 1970s. In India they

started in the 1960s; in China in the 1970s. In India and China, at the time of writing, they appear to be becoming fewer.

Geographical Context

The sheer size of China and India makes the implementation of policies a daunting task. However, both countries have an extensive government machinery with which to implement policies. In the small island states of Puerto Rico and Singapore, it is not difficult to exercise control.

Political Context

China and India are similar to the extent that they have vast populations. Although India has been a democracy since 1947 and China is a communist state run by a single party, the countries have in common the local government with central policy carried out in the many regions by local officials. However, coercive practices have been more extreme in China; this was only possible because of the repressiveness of the regime (see the low freedom score in Table 1). The organisation by Chinese authorities of more than 20 million sterilisations in a single year is staggering. Puerto Rico has been subject to colonial influence from mainland USA. Singapore has been independent since 1965 and, although a democracy, it has since been dominated by a single political party that has consistently rejected liberal democratic values.

Socio-demographic Context

Puerto Rico introduced its population policy earlier than the other four countries; it had the lowest TFR through the 1950s and 1960s (Figure 1). India's population growth rate is now more than three times that of China (Table 1); India's TFR is still 2.2, whereas the figure for China is 1.7. China's TFR has been slowly increasing since 2000, even though stringent family size policy was not eased until 2015. Because India's past FP policies failed, the country now faces a youth bulge (Poston & Bouvier, 2017); 47% of its citizens are aged under 25. This is reflected in the high youth Dependency Ratio (DR) (Table 1). In contrast, the labour force in China has been shrinking since 2012 (Solinger & Nakachi, 2016).

Population policies with an emphasis on sterilisation have adverse demographic repercussions: a distorted age-structure with a high old-age DR. This is seen more acutely in China than in India (Table 1). Care of an excess of elderly people puts a severe economic strain on a country. In China, the population aged more than 80 years is projected to increase from 20 million in 2010 to 114 million in 2050. Chinese family structure now displays the 4–2–1 phenomenon: four grandparents, two parents and one child. The weight of obligation on the children in adult life is enormous.

In China and India, there is also distortion of the sex ratio, with an excess of males (Table 1). The sex ratio is considerably above the expected value of 105 in these two countries. The peak in China in the mid-2000s was 118. This was due to

sex-selective abortions. In China, it has been estimated that 41 million men reaching their mid-20s will not find women to marry (Poston & Bouvier, 2017).

Ethnic Context

In China, ethnic targeting has not been apparent until more recently. The one-child policy applied to the Han population only. However, there are now reports of Uyghur women being forcibly sterilised in Xinjiang (Zenz, 2020).

The Indian programme, albeit unofficially, targets the *dalits*, the poor (especially in rural areas) and the illiterate (Jena & Biswal, 2015). The incidence of sterilisation among women of childbearing age in Puerto Rico in the 1960s was more than 10 times that among women living in the 50 states of the USA (Mass, 1977). No reports were found of any targeting of ethnic groups in culturally diverse Singapore.

Ethical Context

States can employ various policy instruments which will influence reproductive decision-making and outcomes; these are either negative or positive. Positive policy instruments include nudges, boosts and other incentivisation (Wale & Rowlands, 2020). Incentives consist of benefits, rewards or compensation for agreeing to undergo sterilisation. In India, incentives have been directed at individuals and their families, healthcare providers and third-party motivators. Rewards directed at those with limited economic means may be more 'persuasive'. Where a 'motivator' is incentivised too, the amount of pressure to be sterilised can amount to coercion (Wale & Rowlands, 2020).

India professes that, since 2000, it has been 'target-free'; however, the newer 'expected levels of achievement' seem to be targets in disguise (Sharma, 2014). Although India now genuinely offers reversible methods too, the historical bias towards sterilisation has had an enduring effect (Pandey, 2018).

In China, during the later-longer-fewer campaign, incentives included paid leave from work (varying from 7 to 21 days, according to province) and material rewards such as cash, grain rations and work points; these determined the share of a collective's food or supplies in agricultural communes (Greenhalgh & Winckler, 2005).

In Singapore, incentivisation was more subtle, but nevertheless powerful. Incentives included priority allocation of apartments and priority registration of children at primary schools to smaller families.

As well as incentives, negative policy instruments have been used in India, these have included state-level punishments, penalties and other sanctions for families with more than two children, for example, denial of healthcare for mothers/children and fines and restrictions on government employment/promotion for fathers (Wale & Rowlands, 2020). In China, disincentives predominated over incentives (Short & Fengying, 1998). Those having a second child were subject to, among others, financial penalties, loss of benefits, demotion and dismissal from their job, intimidation, humiliation and even physical violence and destruction of property (Li, 1995). In Singapore, benefits associated with higher order births were withdrawn.

Conclusion

Anti-natalist policies have been shown to be not so apposite now in light of falling birth rates in many countries. It has become apparent from global demographic analysis that TFRs would have dramatically fallen regardless of any population policy. It has also become clear that aggressive population policies distort the population structure, making the proportion of dependant older people excessive. Sexual and reproductive rights were violated in all four countries studied. When providing health care to individuals, their reproductive rights must take priority.

With the development of highly effective reversible methods of contraception, there are good alternatives to sterilisation (Joshi et al., 2015). Sterilisation is an option that should be easily available as part of an overall sexual and reproductive health service for those who request it; coercive sterilisation programmes are not appropriate. Although a rights-based approach is now generally accepted, vigilance is still necessary as it is unclear whether coerced sterilisations have been eradicated in China and India.

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