Original Research

Impact of the Family Planning Association of Sri Lanka's contraceptive social marketing on the National Family Planning Programme (2001-2020): Is there an effect of COVID-19?

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Abstract

Introduction: The global first national level social marketing programme (SMP) implemented by a non-governmental organization was started in Sri Lanka on 1973 by The Family Planning Association of Sri Lanka. After four decades, this operation has grown to be the market leader of contraceptives, distributing over 15 products through 4867 pharmacies island wide. In 2020, despite the COVID-19 pandemic and other related challenges, it generated 367 442 couple years of protection (CYP).

Objectives: To assess the impact and contribution of SMP to the National Family Planning Programme (NFPP) during the past two decades with a special focus on the effect of the COVID-19 pandemic in 2020

Methods: The product-wise annual sales figures of the SMP during past two decades (2001-2020) were analyzed using Marries Stop International Impact2 Calculation Tool (MSI-Impact2) to estimate the impact and contribution to the NFPP. The programme data published in the Annual Report of the Family Health Bureau was used to compare and triangulate the results obtained from MSI-Impact2.

Results: Contribution of the SMP to the national modern contraceptive prevalence rate (mCPR) during the past two decades is 10-17%. The SMP averts over 40 000 unsafe abortions, 15 maternal deaths and 60 child deaths annually. Although the national level impact of COVID-19 on contraceptive SM is negligible, a significant shift in the contraceptive purchasing pattern was observed in 2020.

Conclusions & Recommendations: SM of contraceptives has contributed to improving women's health significantly in Sri Lanka. In the absence of SMP, the country mCPR would have been reduced by 10-17%.

Keywords: contraceptive social marketing, impact estimation, family planning, COVID-19, MSI Impact2 tool

Introduction

Contraception can be defined as the deliberate use of artificial methods or other techniques to prevent pregnancy as a consequence of sexual intercourse (1). Using contraceptive methods in the context of planning a family is referred to as family planning. Family planning allows people to attain their desired number of children and determine the spacing of pregnancies. It is achieved through the use of contraceptive methods and the treatment of infertility. Although a variety of definitions have been proposed by social marketers, social world marketing is defined as a program-planning process that applies commercial marketing concepts and techniques to promote voluntary behaviour change (2). Social marketing focus can motivate or convince individuals at the population level to accept an advantageous set of actions or behaviour at both individual and population level. Social marketing is defined as "the design, implementation and control of programmes seeking to increase the acceptability of a social idea or practice in a target group (s)" (3). Social marketing in family planning programmes makes contraceptive products accessible and affordable through private-sector outlets such as pharmacies and shops, while using commercial marketing techniques to achieve specific behavioral goals. Social marketing is designed to fill the 'gap in the middle', reaching those not served through free programmes from the public sector or with high-priced commercial products targeted at the wealthiest segments (4). Social marketing is one of several 'high-impact practices in family planning' (HIPs) identified by a technical advisory group of international experts (4). Systematic reviews of SMP conducted in other countries found that these programmes have had a positive impact on clients' knowledge and access to contraceptive methods and on condom use (4).

Family planning efforts in Sri Lanka date back to the 1950s, with establishment of The Family Planning Association; the pioneer organization in the field of family planning in Sri Lanka. The first state run family planning clinic was opened in 1937, but it was not continued. A survey conducted in 1958 by the Government of Sri Lanka, with support from the Government of Sweden, revealed no religious opposition to family planning and a high latent demand for contraception among married couples (5). This, coupled with rising youth unemployment rates due to the population increase, led the Government to formally launch the family planning programme in 1965. Even 30 years before the International Conference on Population and Development (ICPD), this programme was integrated with the Maternal and Child Health Programme of the Ministry of Health (6). In 1968, the Family Health Bureau (FHB) was established to coordinate family planning under the Ministry of Health (7). Table 1 demonstrates the trend in contraceptive use among currently married women from 1975 to 2016 (7).

Table 1: Trends in current contraceptive use by modern and traditional methods among currently married women (1975-2016)

Contraceptive Methods	% of the currently married women currently using contraceptives						
	WFS 1975	CPS 1982	DHS 1987	DHS 1993	DHS 2000	DHS 2006/07	DHS 2016
All modern methods	20.2	31.9	40.6	43.7	49.5	53.1	53.6
All traditional methods	14.2	26.0	21.1	22.4	20.5	17.0	11.0
All methods (CPR)	**34.4**	**57.8**	**61.7**	**66.1**	**70.0**	**70.2**	**64.6**

Sources: Various sources of the Department of Census and Statistics

WFS=World Fertility Survey; CPS=Contraceptive Prevalence Survey; DHS=Demographic and Health Survey

The history of social marketing in the world goes back to 1967; the year in which the first social marketing programme was started by the government of India. The global first national level social marketing programme implement by a non-governmental organization was started in Sri Lanka in 1973 by the Family Planning Association of Sri Lanka. The FPA Sri Lanka started the Social Marketing of contraceptives with its most popular condom brand "PREETHI" was scaled up every year. As donor funding had reduced in the early 1980s, products were sold at commercial prices when the project commenced. This move towards self-sufficiency has been successful in terms of income generation. In 1983, the programme recorded a net surplus (profit) for the first time in the history. In 1984, the programme made a profit of about 0.34 USD per couple years of protection (CYP), while serving to 7.6% of contraceptive users nationally. In the same year, the total CYP generated was 90 832 (8).

After four decades, this operation has grown to be the market leader for all contraceptive products introduced through it. The SMP has also made the Association self-sufficient in funding, ensuring sustainability into the distant future. The FPA Sri Lanka continued to complement and supplement the services provided by the state, wherever the need was felt. To date, the FPA Sri Lanka reaches out to where services are most needed and serve a significant portion of contraceptive users in the country (9). As of today, FPA Sri Lanka distributes over 15 products through 4867 pharmacies and retail outlets island-wide. In 2020, despite the COVID-19 pandemic and other related challenges, it generated 367 442 CYP (10). Other than the FPA Sri Lanka, Population Service Lanka (PSL) is also involved in contraceptive social marketing in Sri Lanka (11). Based on unpublished data, it can be assumed that FPA Sri Lanka Social Marketing Programme contribute for around three fourths of contraceptive social marketing in Sri Lanka.

Many policy makers and researchers initially predicted a major disruption in access to family planning services due to the COVID-19 pandemic which is persisting for more than a year at present.

However, despite initial fears, it was found out that the disruption to family planning services, in general was 'smaller and shorter'. However, UNFPA highlighted the importance of continuous monitoring of FP services as concerns on such disruptions persist (12). This study aims to assess the impact and contribution of FPA Sri Lanka's SMP towards the National Family Planning Programme during the past two decades with special focus on the effect of the COVID-19 pandemic in 2020.

Methods

Due to the nature of the social marketing, client level data is not available as the pharmacies do not record client information at the time of selling contraceptives. Therefore, only the number of units sold is available. Therefore, the cost-effective way to assess the impact of social marketing interventions is through mathematical modelling. Otherwise, island wise sample surveys are needed which is costly and not practical in a pandemic situation. It is also not possible to measure the trend over time by conducting a cross-sectional study. Therefore, this study is based on a mathematical model using retrospective sales data.

The product-wise annual sales figures of FPA Sri Lanka's SMP for the past two decades (2001-2020) were analyzed using Marries Stop International (MSI) Impact-2 Calculation Tool (MSI-Impact2) to estimate the impact and contribution to the National Family Planning Programme. The programme data published in the Annual Report of FHB were used to compare and triangulate the results obtained from MSI-Impact2.

Data and data quality

The marketing officers attached to the SMP report product-wise sales figures daily in the Sales Force Automation System which is a centralized and online data management system. The sales force automation system is integrated with the finance system (SAGE) where the finance officers approve the sales data based on invoices and payment receipts. All the sales

data are verified monthly with the physical contraceptive stocks, and the final data after adjustments for returns are reported in the organizational Monitoring and Evaluation Information Management System (MEIMS) (13). We obtained the annual sales figures available in MEIMS from 2001 to 2020 and uploaded in the MSI-Impact2 tool developed by the Marie Stopes International (MSI) for impact estimation. Initial expectation of the investigators was to cover the entire lifespan of the SMP. However, the study was limited to two decades due to not having historical data with desired quality.

Impact estimation of family planning programmes

Efforts to measure the effects and impact of family planning programmes have been initiated three to four decades back. Various statistical and process models of impact estimation evolved over the years from the 1960s' (14). Based on historical evidence, various development agencies and research institutions have designed a variety of models and tools to determine the impact of family planning programmes. These tools differ greatly in their intended uses and scope, timeframe, methodologies, outputs, level of precision and flexibility, and ease of use (15). The most relevant tools in the context of current study includes the FP 2020 Impact Estimation Tool, MSI-Impact2, The Impact now model, Lives Saved Tool, Millennium Development Goals (MGD) Analysis, Reality tool and Impact 2 (16-22). Considering the data availability, country context, ease of use and wider use in the sector, we selected MIS Impact2 for the current study. Impact2 has been used historically by many development agencies including IPPF for similar studies and is widely accepted in the sector (23-27).

MSI Impact2

Impact2 is an excel based tool developed by Marie Stopes International to calculate the impact of a family planning programme based on service provision and contraceptive distribution data (24, 28-29). The Impact2 tool has already been pre-loaded with national data for all developing countries, from sources including Demographic and Health Surveys (DHS), UN Population Prospects, UN maternal and child mortality data, World Health Organization (WHO) Global Burden of Disease and the Guttmacher Institute, etc (28). We used this pre-populated secondary data available in the latest version of the Impact 2 (version 2.5) for our impact estimations (21). The fifth iteration of the Impact 2 model (v5) includes updated data, an improved user interface, and methodological changes to harmonize the model impact with the wider sector- including Family Planning – 2020 (FP2020) (30). Impact2 facilitates impact estimation at both national level and organizational level (29). We used Impact2 at the organizational level covering island wide contraceptive sales data for the past two decades. The optional feature available in the Impact2 tool that analyses the client profile was not used for this estimation, as currently FPA Sri Lanka is not collecting client level data for SMP.

Indicators and indicator descriptions

Impact2 has facilities to estimate the annual impact as well as lifespan impact. In the current study, we used service life-span impact for interpretation of results. Service life span impact are provided in a given year over the full use of the methods. For long-acting and permanent methods (LAPM) services, this traces out impacts until the method is discontinued, or until a woman is no longer protected by sterilization. The list of impact2 indicators along with indicator definitions are described in Table 2.

Table 2: Indicators and indicator descriptions

Indicator	indicator description
Estimated number of family planning users	Estimated number of family planning users, modelled from sales data. For long acting and permanent methods (LAPMs), user numbers include women served each year (accounting for 1st year discontinuation), as well as women estimated to still be protected by a method received in a past years. For short-term methods, user numbers assume women receive commodities for one full year of protection.
Number of abortions averted	Estimate of the number of abortions that do not happen because women don't experience an unintended pregnancy- based on the abortion ratio. This uses regional estimates since country-specific data is not available.
Number of unsafe abortions averted	Estimate of the number of unsafe abortions that do not happen because women don't experience an unintended pregnancy, and therefore do not need to seek an unsafe abortion
Number of maternal deaths averted	Estimate of the number of maternal deaths that do not happen because women don't experience an unintended pregnancy- based on trends in maternal mortality (WHO) that change over time (so in future years, when MMR is lower, one unintended pregnancy will avert fewer maternal deaths)
Number of child deaths averted	Estimate of the number of child deaths that do not happen because women don't experience an unintended pregnancy, and therefore have longer birth spacing which improves the health of children in the family.
Modern Market Share (% of married/in-union women using a modern method received their method from SMP)	Modern market share is calculated by dividing the estimated number of women using a modern method or LAPM from the programme under review (see above) by the estimated number of women using a modern method or LAPM nationally. National user numbers are based on a linear projection of CPR from the latest 2 national surveys and projections from the UN.

Limitations of the study

While using the results of Impact2 for decision making, we need to understand and acknowledge that Impact2 is a mathematical model, rather than a measure of real life. As such, the estimates it produces are only as good as the data and assumptions available. While Impact2 has used the best available assumptions and data, much of this data is (1) reported infrequently therefore difficult to establish trends over time, (2) not available at national level therefore only sub-regional or regional estimates are used. For an example, in this study we used regional data to estimate the number of abortions averted, as the abortion related data is limited in Sri Lankan context due to restrictive laws governing abortion. This may contribute to generate over or under estimates. All results from MSI-Impact2 should be considered as 'estimates' only

which are based on assumptions and best available data. Further, MSI-Impact2 has not being validated in Sri Lankan context.

Results

Estimated number of users for modern contraceptives

Impact2 generated estimated number of users for modern contraceptives by method. For long acting and permanent methods (LAPMs), user numbers include women served each year (accounting for 1st year discontinuation) as well as women estimated to still be protected by a method received in the past. For short-term methods, user numbers assume women receive commodities for one full year of protection. Impact2 does not calculate number of users for

emergency contraceptive pills (ECP) as it is not considered as a contraceptive method. Figure 1 illustrates the annual trend of the estimated number of

contraceptive users, as generated by Impact2. Estimated number of users shows an increase up to 2014, and thereafter a slight decline due to various factors.
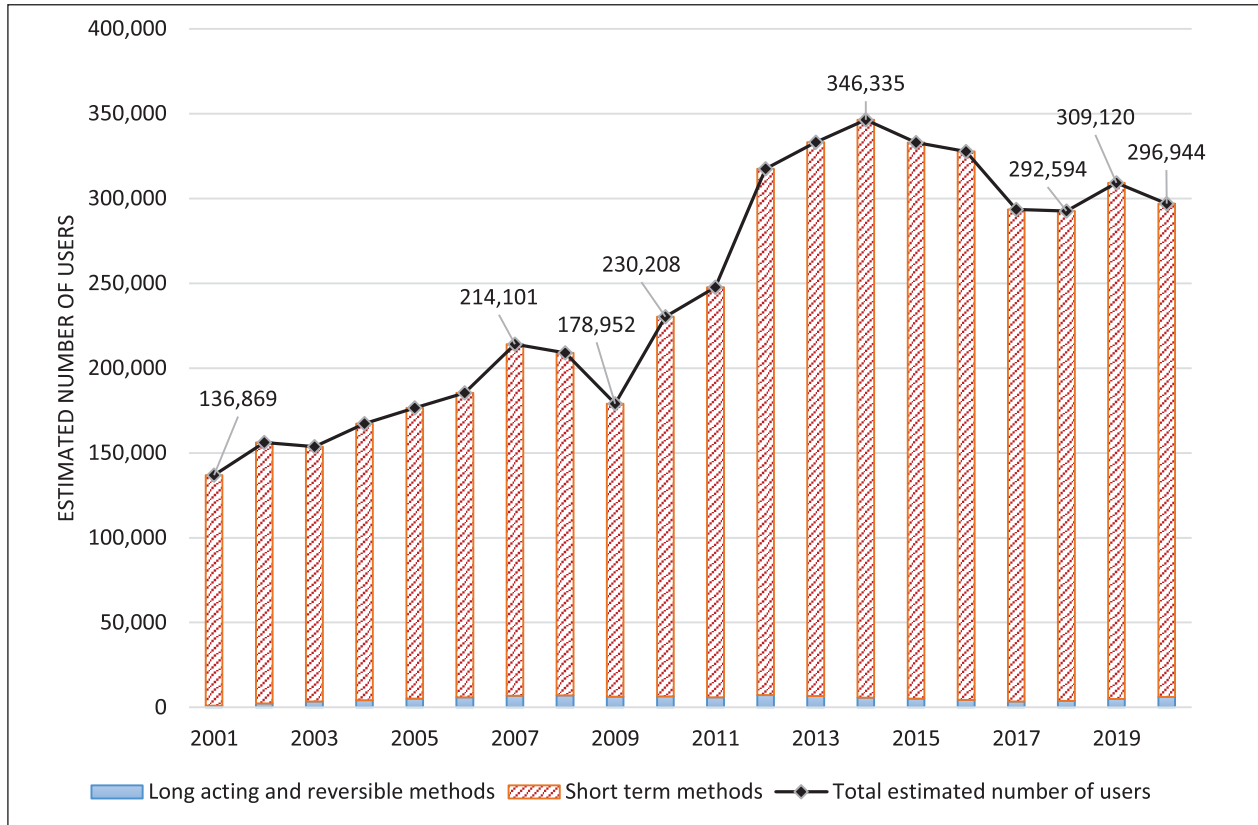

Figure 1: Estimated number of users for modern contraceptives from SMP (2001-2020)

Contribution to national modern contraceptive prevalence rate (mCPR)

The Family Health Bureau (FHB) publishes the mCPR annually, based on programme data (31). The total number of modern contraceptive users in the country as reported in the FHB annual report was

compared with the estimated number of contraceptive users from SMP (generated by Impact2) to calculate the contribution of SMP to the national mCPR. Figure 2 compares and illustrates the contribution of SMP to the national mCPR. These figures show that in the absence of SMP, the country mCPR would have been reduced by 10-17% annually.
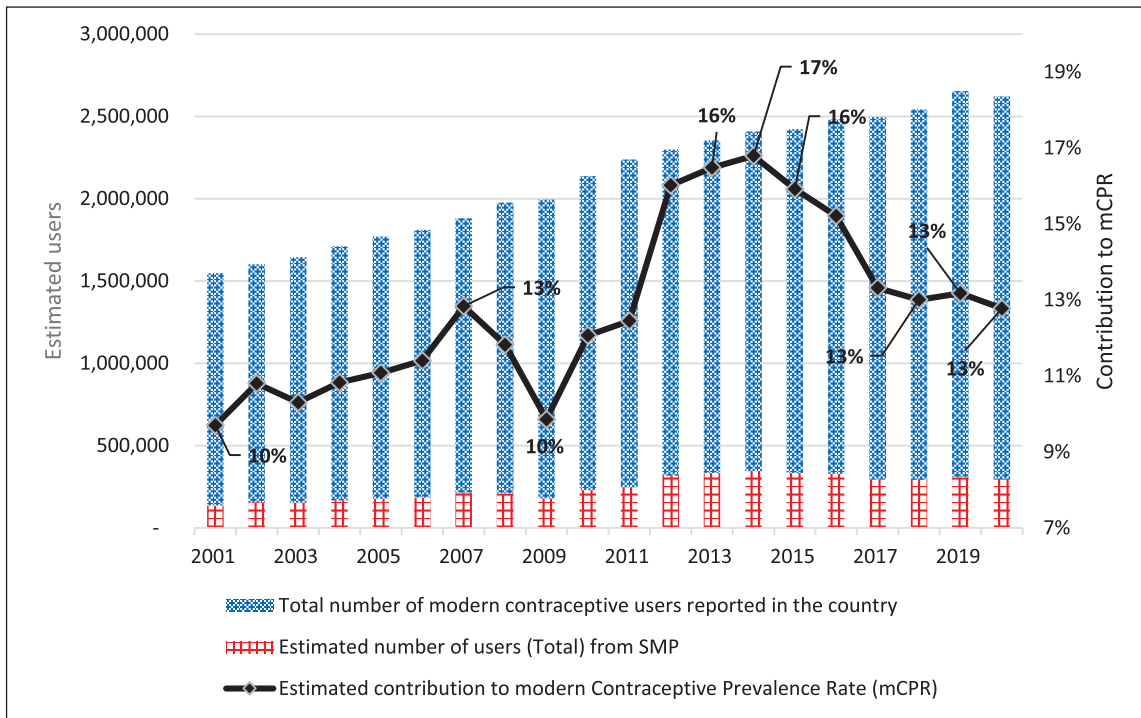
Figure 2: Estimated contribution of SMP to the national mCPR (2001-2018)

Number of unsafe abortions averted

As described in Table 2, Impact2 estimates the number of abortions averted and number of unsafe abortions averted based on the SMP sales figures and secondary data pre-populated in the tool. Results show that, in 2020 alone, SMP has averted more than 70 000 abortions, of which more than 40 000 are unsafe. Figure 3 illustrates the estimated number of abortions and unsafe abortions averted by SMP over the past two decades.
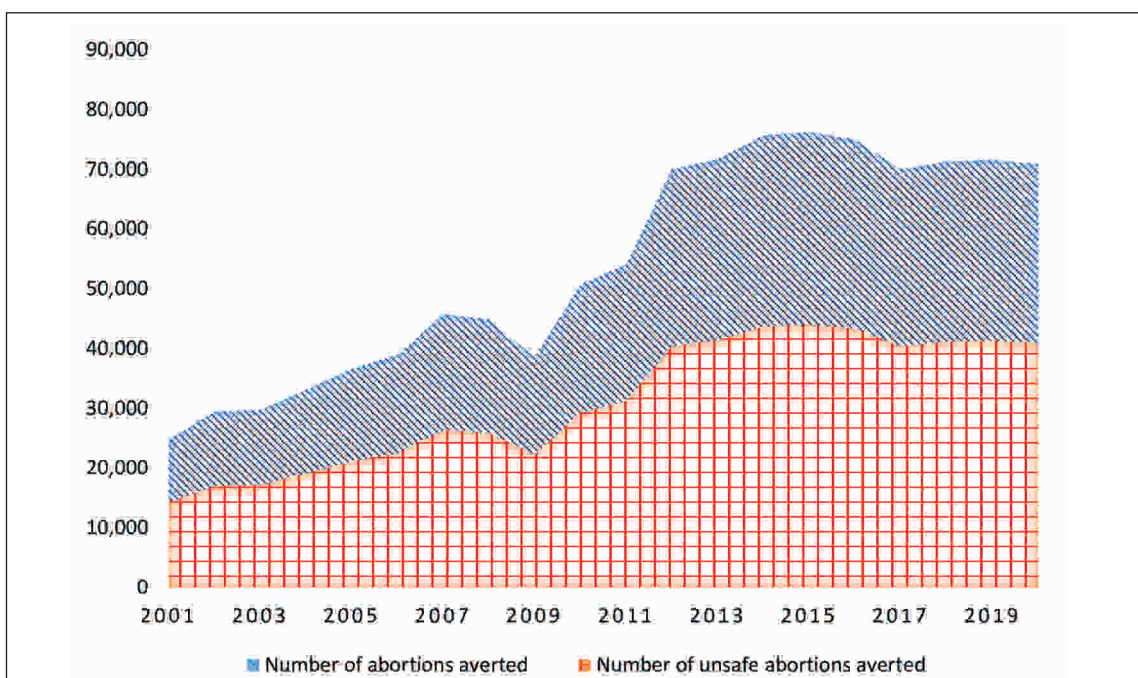

Figure 3: Estimated number of abortions and unsafe abortions averted by SMP (2000-2020)

Number of maternal deaths and child deaths averted

The highest-level impact of any family planning programme is that it averts maternal and child deaths, which would have happened in the absence of the programme. Sri Lanka is a country with a strong health system where the maternal and child mortality is very low compared to other South Asian countries (31). However, the results of Impact2 shows that the SMP has contributed to avert 17 maternal deaths and 80 child deaths in 2020 alone. Table 3 presents the estimated number of maternal deaths and child deaths averted during the past decade.

Table 3: Estimated number of maternal deaths and child deaths averted by SMP (2011-2020)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Number of maternal deaths averted	17	21	21	22	21	20	18	18	17	17
Number of child deaths averted	61	79	81	85	86	84	79	80	80	80

Modern contraceptive market share

Impact2 calculated the modern contraceptive market share of the SMP considering all other channels of contraceptives as the denominator. Other channels include but may not be limited to free distribution by the government family planning programme, free distribution by the government HIV Prevention Programme, free distribution by other FPA Sri Lanka programmes, free distribution by other NGOs, and social and commercial marketing by other vendors.

We used the FHB data on mCPR described in Figure 3 to triangulate the results produced by Impact2. A comparison on results of the two sources is illustrated in Figure 4. Although we expected to coincide two lines (or parallel movements), it shows a trend with an interaction which can be attributed to the methodological differences in estimation. However, it is noteworthy to highlight that the maximum difference during the past 20 years is less than 2%. The estimated modern market share is around 14% and contribution to mCPR is around 13% for 2020.
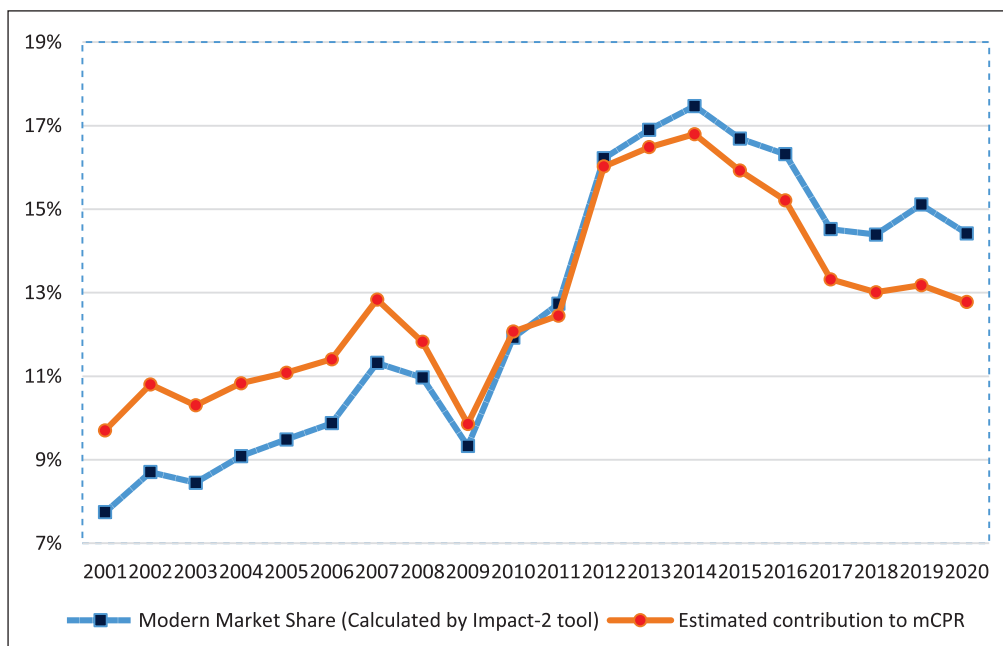

Figure 4: Graphical representation of the SMP's modern contraceptive market share and estimated contribution to mCPR (2001-2020)

Similar to findings of this study, SMPs on family planning have shown major impact and success around the world. These programmes have increased the acceptance of family planning methods as well as continuation of such methods. In Zambia, Rossem & Meekers concluded that SMPs had a major impact in increased use of condoms. Similar programme by the Honduran Family Planning Association increased their oral contraceptive market share from 7% to 15% in a span of three years (1984-1987) and retail pharmacy sales from 20 to 40 per cent (32-33).

Effect of COVID-19 outbreak

The COVID-19 outbreak impacted the Sri Lankan socio-economic conditions and people's lives from March 2020 with the island wide lockdown imposed by the government. All the pharmacies were closed for three months; and the important pharmaceutical items were delivered to the doorstep after placing an order over the phone with online prescriptions (34). The contraceptive social marketing programme was highly affected due to this situation and other socio-cultural factors. We compared monthly sales data in 2020 against 2019. Results shows that the contraceptive sales dropped significantly during March, April and May 2020 compared to 2019 for all contraceptive brands. However, sales of long acting and reversible methods (IUD and implants) were increased 2-3 times from July to September 2020 compared to 2019. However, there was no such increase for short term methods. The second wave of the pandemic was activated in October 2020 which affected the contraceptive behaviour of the people during the last quarter (35). However, by the end of 2020, only 1% reduction in CYP was reported due to the change in the contraceptive purchasing pattern among customers. It is interesting to highlight that there had been a tendency to switch short term contraceptive users towards long acting and reversible methods. Estimated number of implants

and IUD users show a 25% increase in 2020 compared to 2019. Although it is not a long acting method injectable also shows same pattern with 50% increase during 2020. However, the pattern was reversed for other contraceptives. We observed 15% and 13% reduction for condoms and oral contraceptive pills (OCP). Overall, there was around 48% increase in the estimated number of users for injectables, implants and IUD, whereas 15% reduction in number of users for condoms and OCP compared to 2019. Total number of contraceptive users shows 4% reduction in 2020 compared to 2019 (Figure 1). The uncertainty and fear of future lockdowns may have been a contributing factor for the changing contraceptive behavior among SMP clients. However, when it comes to impact level indicators, only a minor change can be observed. There was only a 1% reduction in the estimated number of abortions and unsafe abortions (Figure 3). There was almost no difference in the estimated number of maternal and child deaths in 2020 compared to 2019 (Table 3).

Conclusions & Recommendations

The contraceptive SMP which commenced in 1973 has scaled up several times during the past four decades. Results conclude that the contribution of the SMP to the national mCPR during the past two decades is considered to be 10-17%. The SMP averted over 40 000 unsafe abortions, 15 maternal deaths and 60 child deaths annually during the past two decades. Although the national level impact is negligible, a significant shift in the contraceptive purchasing pattern was observed in 2020 due to the COVID-19 outbreak. Promotion of contraceptive social marketing is a sustainable strategy to achieve the national targets of Sustainable Development Goals. Community-based studies are needed to identify underlining factors and long-term effects of those changes.

Public Health Implications

- Data and findings presented in this study will significantly contribute to national level demographic and public health analysis in the context of population, demographic and contraception as this is the first study on the impact of contraceptive social marketing carried out in Sri Lanka context.

- Results of this study will contribute to develop national family planning policies, strategies and plans in Sri Lanka.

- The contraceptive social marketing model of Sri Lanka, its impact and sustainability will significantly contribute to the global knowledge on contraceptive social marketing which can be adopted by other countries and players to achieve their national population and family planning goals.

Authors Declarations

Competing interests: The authors declare that the first author of this article is the Director (Monitoring and Evaluation) of Family Planning Association of Sri Lanka.

Ethics approval and consent to participate: No direct involvement of human and animal subjects. The research was conducted using already available aggregated sales data.

Funding: Authors declare that no external funding was received to conduct this study.

Author contributions: As the principle investigator, MSS contributed to the study design, conceptualization and report compilation. IDeS contributed to the conceptualization, study design and report finalization. Further, he carried out a demographic analysis and triangulation of the results with available secondary data. MK conducted the literature survey, desk review and coalition of national data including triangulation.

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