

FAMILY PLANNING VOUCHERS TO IMPROVE DELIVERY AND UPTAKE OF CONTRACEPTION IN LOW AND MIDDLE INCOME COUNTRIES: A SYSTEMATIC REVIEW

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Abbreviations

ADC	Costa Rican Demographic Association
AFH	Action for Health (Cambodian NGO)
AIM	Africa Index Medicus
ANC	Antenatal Care
BPL	Below Poverty Line (India)
CBA	Controlled before-and-after study
CBD	Community Based Distributors
CDC	United States Centers for Disease Control and Prevention
CDSR	Cochrane Database of Systematic Reviews
CI	Confidence interval
CIDA	[formerly Canadian International Development Agency, now] Canadian Foreign Affairs, Trade And Development
CHW	Community Health Worker
CINAHL	Cumulative Index of Nursing and Allied Health
DFID	Department for International Development (United Kingdom)
DiD	Difference-in-Differences
EC	Emergency Contraception
EC	European Commission
ECP	Emergency Contraceptive Pill
EPOC	Cochrane Criteria for Effective Practice and Organization of Care
EPOS	(German consulting firm)
FFS	Fee for Service
FHOK	Family Health Options of Kenya
FOY	Friends of Youth (Kenyan NGO)
FP	Family Planning
FPK	Family Planning Association of Kenya
GBV	Gender-Based Violence
GPOBA	Global Partnership on Output-Based Aid (World Bank unit)
HC	Health Center
IUD	Intrauterine Device
IUCD	Intrauterine Contraceptive Device
IPPF	International Planned Parenthood Federation
IUSSP	International Union for the Scientific Study of Population
ICFP	International Conference on Family Planning
KfW	German Development Bank

LAPM	Long-Acting and Permanent Method
LARC	Long-Acting and Reversible Contraception
MSI	Marie Stopes International
OBA	Output-Based Approach
OR	Odds Ratio
OPM	Oxford Policy and Management
NGO	Non-governmental Organization
PAC	Post-Abortion Care
PNC	Postnatal Care
PNFP	Postnatal Family Planning
PwC	PriceWaterhouseCoopers
RCT	Randomized Control Trial
RH	Reproductive Health
SRHC	Sexual and Reproductive Health Care
SRH	Sexual and Reproductive Health
SRHR	Sexual and Reproductive Health and Rights
SMH	Safe Maternal Health care
USAID	United States Agency for International Development
UNFPA	United Nations Population Fund
VIA	Visual Inspection by Acid Acetic
VMA	Voucher Management Agency
WRA	Women of Reproductive Age

Abstract

Background

Reproductive health vouchers have provided accessible and quality reproductive health services to the poor and have been critical for countries to make substantial progress in achieving Millennium Development Goal 5. Increased utilization of contraception allows for birth spacing, decreases unintended pregnancy, and results in healthier mothers and families. Strategies to improve utilization through targeted subsidies in low- and middle income countries have not been fully documented in a systematic review of the literature.

Objective

To summarize the effect of voucher systems for contraceptive services on client user socio-economic and demographic indicators in low- and middle income countries.

Methods

A systematic review of unpublished reports and published peer-reviewed articles in English using 33 databases (1960 to 2014) with key search terms was conducted. Additional studies were identified by contacting experts and searching bibliographies of citations identified during the systematic review. The keywords were drawn from three clusters or themes: a) low- and middle income countries, b) vouchers and health care financing, and c) family planning and contraception. Keywords used as search terms varied across databases and websites but the topical clusters remained a core factor in choice of keywords. Study designs included randomized control trials, cluster randomized control trials, controlled before-and-after (also termed quasi-experimental), interrupted time series analyses, cohort, and before-and-after studies. Methods of analysis and inclusion criteria were specified in a protocol registered on the PROSPERO database: CRD42015014149.

Study Selection

Studies designed with either a plausible comparison group or a credible counterfactual and reporting any of the primary outcomes were included.

Data Extraction

Two reviewers, using predefined data fields, independently extracted data from the first round of search results and, in a second round, extracted data from full length articles meeting the inclusion criteria.

Data Analysis

Data trends in studies were compared and summarized. The consistency in study design and outcome variable construction was not sufficient to allow results combination through meta-analysis.

Results

Fifteen reports met the inclusion criteria. Most reports were of studies with low quality designs, and only two had results from randomized control trials, while four had results from studies using controlled before-and-after designs. Four reports had results from before-and-after studies, and five reports presented results from cross-sectional studies.

Conclusion

This review has yielded important information on the effectiveness of voucher programs subsidizing contraceptive products and services. Voucher programs are intended to target subsidies to beneficiaries who, in the absence of the subsidy, would have had a lower probability of service utilization. In most studies, beneficiaries were defined by economic status; in two programs, adolescents were identified as disadvantaged and given vouchers. The current review found that contraceptive uptake did increase among the targeted beneficiaries in most studies.

Vouchers demonstrate a productive mechanism for governments to engage private providers. Of the 31 programs identified in this review, 18 contracted only private providers, while seven other programs contracted a mix of public and private providers, and six engaged public providers only. The results suggest that voucher programs can expand client choice by reducing financial barriers to contraceptive services and make private providers an option for disadvantaged clients previously restricted by cost.

Introduction

BACKGROUND

Since the 1960s more than 20 family planning (FP) programs in low- and middle income countries have used voucher subsidies to reach disadvantaged populations and improve access to contraception, particularly long-acting methods (LAMs). Although the specifics vary between programs, generally the voucher strategy identifies beneficiaries from disadvantaged groups and gives individuals a voucher they can then take to a contracted public or private provider for service. In many programs, community-based distributors use a poverty grading tool consisting of household assets and amenities to identify poor women from their community who qualify for a voucher. Vouchers are redeemed for services at contracted health facilities. Facilities then submit their claims to a voucher management agency (VMA) for reimbursement of their costs of services to voucher clients. Although multiple studies have been published, there has not yet been a systematic review of the literature to summarize the effects of FP vouchers.

RATIONALE

Sexual and reproductive health and rights are central to people's lives and essential for their well-being. In practice, this means women and couples must have the means for a healthy sexual life, the number of children they want, when they want them, safe delivery of their babies, and survival of their newborns. Disparities among and within countries remain significant, however, and the poorest people face the greatest health challenges (Barros et al. 2012, Singh, Darroch, Ashford 2014). Family planning promotion is unique among health interventions in the breadth of its potential benefits: reduction of poverty, lower maternal and child mortality, women's empowerment, reduced burden of unwanted pregnancies, and strengthening environmental sustainability by stabilizing the planet's population (Cleland et al. 2006). To reduce disparities between rich and poor, many public health care professionals have become advocates for vouchers, which can be directed to poor people and then exchanged for health services (Boler and Harris 2010). This review of FP voucher programs will provide information about their effectiveness and efficiency in low- and middle income countries, and inform future development of FP voucher programs.

OBJECTIVES

To review and synthesize the evidence on the effectiveness of voucher systems for FP services in developing countries.

Methods

PROTOCOL AND REGISTRATION

Analysis methods and inclusion criteria were specified in a protocol registered on the PROSPERO database: CRD42015014149 (www.crd.york.ac.uk/PROSPERO).

ELIGIBILITY CRITERIA

Types of Studies

We included quantitative studies presenting results for nine primary outcomes, in either before-and-after or controlled designs in peer-reviewed research publications or reports published in English. Well-constructed before-and-after studies without control groups or well-designed cross-sectional studies published in peer-reviewed journals, or as working papers (grey literature), were also included. Excluded studies used a voucher simply to enroll participants (not subsidizing FP) or lacked a clear comparison or control group.

Types of Participants

Studies included in this review comprised samples of participants typically women of reproductive age (WRA), 15 to 49 years old, from poor or disadvantaged backgrounds in low- and middle income countries.

Types of Interventions

Interventions included were part of social protection programs providing a voucher subsidy to disadvantaged clients and reimbursed health care workers for contraceptive services at a pre-defined quality standard.

Types of Outcome Measures

Primary outcome measures:

- i. Use of contraceptive services and/or commodities (utilization)
- ii. Method continuation and switching
- iii. New contraceptive users (targeting)
- iv. Range of services (method mix)
- v. Contraceptive prevalence (modern methods, overall, by method)
- vi. Unmet need for contraceptives (modern methods)
- vii. Unintended pregnancy
- viii. Reduction of unsafe abortion
- ix. Fertility: 1. Parity; 2. Completed fertility; 3. Timing of first birth; 4. Teenage births; 5. Birth spacing.

Information Sources

Databases and online resources searched for published studies and unpublished grey literature were: PubMed; Popline; Cochrane Database of Systematic Reviews (CDSR); Cochrane Central Register of Controlled Trials (CENTRAL); IDEAS Economic database; Cumulative Index of Nursing and Allied Health (CINAHL); Science Direct; Inter-Science (Wiley); Africa Index Medicus (AIM); WHO Latin America and Caribbean (LILACS); WHO Southeast Asia (IMSEAR); WHO Eastern Mediterranean (IMEMR); WHO Western Pacific (WPRIM); African Heathline@Princeton University; Web of Science; Google Scholar; IUSSP; Population Reference Bureau; ELDIS; International Conference on Family Planning (ICFP) 2013; DfID; USAID; Canadian Foreign Affairs, Trade And Development, formerly CIDA; Population Council; Guttmacher Institute; London School of Hygiene and Tropical Medicine; Harvard University; Grey Literature (greylit.org); ResearchGate; African Journal Online; Center for

Health Market Innovations; Social Franchising for Health; and University of California at Berkeley. One database (EMBASE) was not included due to restricted access.

The first strategy used key words in three topical clusters to help identify relevant literature: a) low- and middle income countries, b) vouchers and health care financing, and c) FP and contraception. Key words used as search terms varied by database and web sites, but the topical clusters remained a core factor of choice in key words (see Appendix 1 for specific key words by database).

SEARCHES

Two examples of key terms used in database searches and search strategies are:

PubMed (Advanced Search)

Key Terms

(developing countr* OR "poor countr*" OR "developing-countr*" OR "low-income countr*" OR "low-resource countr*" OR "low and middle income") AND (voucher* OR coupon* OR output-based* OR "output based" OR "results-based" OR results based* OR "performance-based*" OR "performance based" OR "pay-for-performance" OR "pay for performance" OR "demand side" OR demand-side OR financ*) AND ("family planning" OR contracept* OR "parity" OR "birth-spacing" OR birth spacing OR "birth-control" OR birth control OR condom* OR "method-mix" OR method mix OR "STIs")

Filtered by: Publication date from 1960/01/01 to 2014/12/31, Humans, English, Child: birth-18 years, Adult: 19+ years, Adult: 19-44 years, Aged: 65+ years.

This yielded 244 initial results.

INTER-WILEY (Advanced Search)

Browse by: Subject>Social and Behavioral Sciences>Family and Child Studies

Key Terms (Advanced Search)

voucher* in All Fields OR
coupon* in All Fields AND
contracept* in All Fields OR
"family planning" in All Fields OR
"birth control" in All Fields AND
low income countr* in All Fields

This yielded 971 initial results.

STUDY SELECTION

Study selection and grading involved two phases.

Phase I: Inclusion/Exclusion

In Phase I, abstracts of all studies identified in database searches were reviewed to determine whether studies should be included in the next phase of the review. Inclusion/exclusion criteria comprised:

Topic

Interventions to be included involved social protection programs offering a voucher subsidy to disadvantaged clients that reimbursed providers or facilities for contraceptive services with pre-defined quality standards.

With limited studies identified in a preliminary qualitative search, inclusion criteria were extended to before-and-after studies. Excluded studies lacked clear comparisons or control groups.

Language

Studies were required to be in English.

Population

Only articles focusing on populations in low- to middle income countries were included.

Time Frame

Articles published from 1960 to the present were included for further review. Our selection of 1960 as the terminus year was based on the historical development of modern contraceptives. Vouchers for FP prior to 1960 had limited methods for subsidizing.

Type of Study

Included studies were required to have credible comparative designs: randomized control trial (RCT), cluster RCT, controlled before-and-after (CBA), or interrupted time series; to increase included studies, before-and-after studies were also permitted.

The initial search yielded 5,894 articles from published and grey literature. Duplicates were removed and two reviewers screened the title and abstract of identified citations independently. From that screening process, 252 studies were identified for full article review.

Expert Recommendations

Marie Stopes shared 11 studies of RH voucher programs implemented in several countries; of those, nine had already been identified in the electronic database search. One recommendation was obtained from Population Council and another from a bibliography, resulting in three additional expert recommendations, which were manuscripts undergoing peer review. Of the three, two met the inclusion criteria.

Phase II: Inclusion/Exclusion

After identifying studies from bibliographic database searches, publishers' pages, relevant organizations, related research and programmatic networks, and expert feedback, we proceeded to Phase II of inclusion/exclusion criteria. Full articles were read and included or excluded according to the following criteria:

Country of Study

Studies of voucher programs not in a low- or middle-income country were excluded.

Primary Outcome

To be included in Phase II, articles were required to examine at least one of the selected primary outcomes :

- i. Use of contraceptive services and/or commodities (utilization)
- ii. Continuation and switching
- iii. New contraceptive users (targeting)
- iv. Range of services (method mix)
- v. Contraceptive prevalence (modern methods, overall, by method)
- vi. Unmet need for contraceptives (modern methods)
- vii. Unintended pregnancy
- viii. Reduction of unsafe abortion
- ix. Fertility: 1. Parity; 2. Completed fertility; 3. Timing of first birth; 4. Teenage births; 5. Birth spacing

DATA COLLECTION

For Phase II, we developed a data extraction form (Appendix 2) with 72 questions designed to extract information on the different aspects of the study and intervention. This was tested with five randomly selected articles, and refined accordingly. For each article included in Phase II, the researchers entered article information into a data extraction form. Data entered into the extraction form included information regarding the article's title, authors, publication date, source, study design, country, length of study, characteristics of population of interest, sampling frame, contraceptive methods, description of intervention, outcomes, funding sources, implementing partners, quality assessment and any additional notes.

Data Items

Information extracted from each study included: characteristics of the population (including socio-economic status, ethnic group, age group, parity, marital status or parity that is relevant to the study outcomes), type of intervention, duration of study, and outcome measures.

Summary Measures

The primary measures of effect included odds ratios, prevalence percentages, and incidence rates. Outcome variables were examined across studies, with the weight of evidence determined by the number of studies looking at common outcomes and the quality of study designs. A combination of results through meta-analysis could not be conducted since there was not sufficient consistency in study design and outcome variable construction. Instead, a narrative synthesis of the data was conducted.

After separate, parallel screening of the articles, the two research assistants discussed any discrepancies and together made a final judgment regarding inclusion or exclusion of the articles in question.

Planned Methods of Analysis

A descriptive analysis is undertaken drawing from the data from the systematic review.

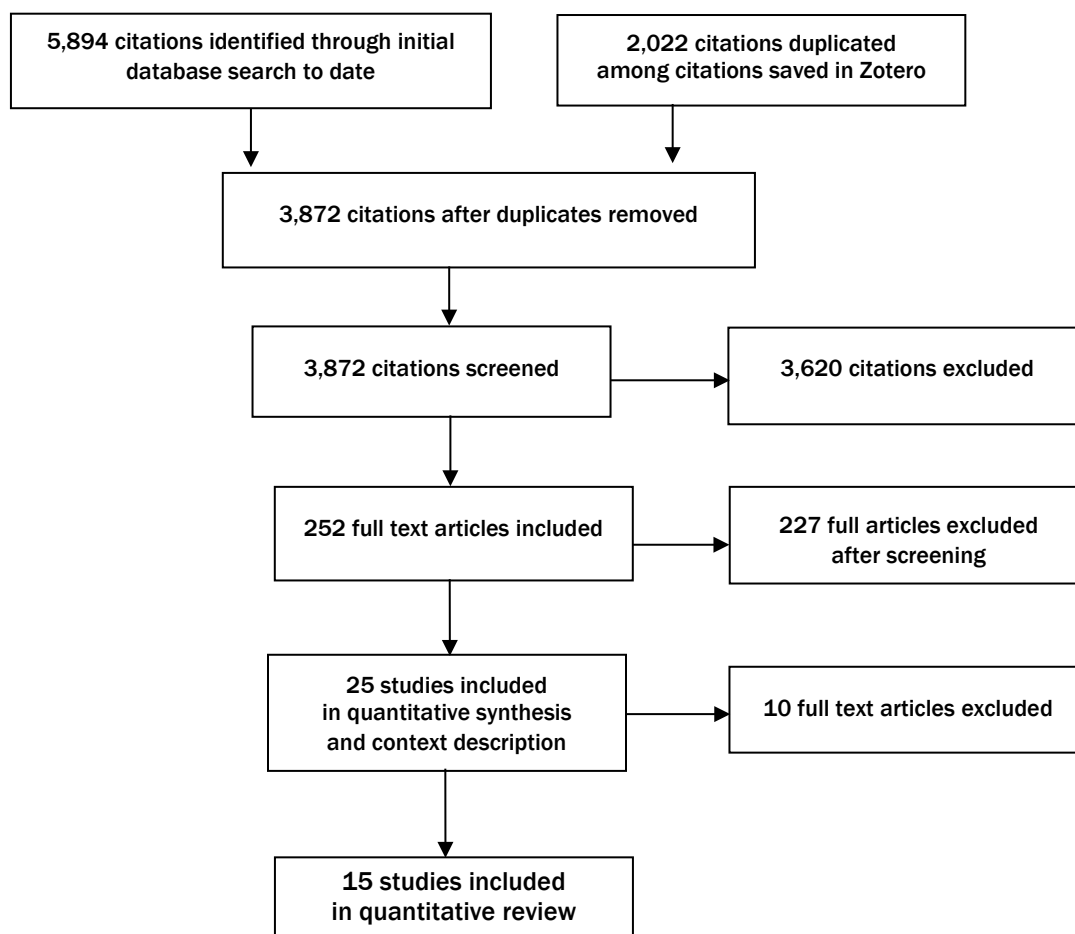
Results

SEARCH RESULTS

The search was conducted from March 2015 to May 2015. A total of 5,894 citations were identified from the electronic database search. After adjusting for duplicates, 3,872 remained. Of these, 3,620 studies were discarded because after reviewing the abstracts it appeared that these papers clearly did not meet the criteria. The full text of the remaining 252 citations was examined in more detail, and 227 studies did not meet the inclusion criteria as described. Fifteen sources met the inclusion criteria and were included in the systematic review. It is important to note that some sources reported more than one primary outcome of interest.

Figure 1 outlines the filtering process used to determine which studies would be included in the review. A total of 15 articles were included.

FIGURE 1: Flow diagram illustrating the identification of studies included



Of the 15 total sources included in the review, one source reported results from three different studies. Four other sources reported two outcomes within the scope of the review's primary outcomes.

The studies were of FP programs in 11 countries, with five in Africa, four in Asia, and two in Latin America. Ten studies were reported since 2010, three between 2000 and 2009, with one in the 1990s and one in the 1960s.

Characteristics of Included Studies

Methods

Fifteen reports met the inclusion criteria. Most of the reports were of studies with low quality designs. Only two reports had results from RCTs. Four reports had results from studies using CBA designs. Four reports had results from before-and-after studies, and five reports presented results from cross-sectional studies.

All the identified studies were published in English. The duration of the interventions were approximately 24 months for CBA studies, 48 months for the before-and-after studies, and 12 months for RCTs. Studies presenting cross-sectional findings were drawn from programs of varying lengths, but given the cross-sectional design, attribution of effect was not possible. Several of the cross sectional studies reported findings from intervention data of less than a year in duration.

Participants

Study participants were most often women of reproductive age between 15 to 49 years old, often from poor or disadvantaged populations, with little or no access to FP services due to high cost or lack of availability of services in their location. Four studies were of programs that targeted married women. A program in Nicaragua provided vouchers to adolescents as young as 12 years of age for a range of SRHC.

Intervention

The intervention in each study was a voucher subsidy for WRA to access FP counseling and contraceptive services.

Primary Outcomes

In all studies the primary outcomes were assessed for any change from baseline to post-intervention after stated time interval of treatment:

- i. Use of contraceptive services and/or commodities (utilization)
- ii. Method continuation and switching
- iii. New contraceptive users (targeting)
- iv. Range of services (method mix)
- v. Contraceptive prevalence (modern methods, overall, by method)
- vi. Unmet need for contraceptives (modern methods)
- vii. Unintended pregnancy
- viii. Reduction of unsafe abortion
- ix. Fertility: 1. Parity; 2. Completed fertility; 3. Timing of first birth; 4. Teenage births; 5. Birth spacing.

Secondary Outcomes

These included change in health outcomes, quality of care, cost effectiveness, and occurrences of any adverse effects. Characteristics of the included studies are presented in Table 1.

TABLE 1: Summary of included studies evaluating use of family planning vouchers to improve delivery and uptake of contraception in low and middle income countries

	Source	Country	Type of Study	Participants, Units of Observation	Age Range	Inclusion Criteria	Study Outcome	Time Frame	Pre-Voucher, Control Group Baseline Value	Post-Voucher, Intervention Group Endline
1	BlueStar Healthcare Network Marie Stopes International Viet Nam, 2010	Vietnam	Before and After		13 to 24 years old	Young adults and women of the bottom 20% and lower-middle income (20-40%), living in peri-urban and rural areas at 81 franchised facilities by 2009. The pilot began with 32 franchised providers.	Change in numbers of inserted intrauterine devices (IUDs)	2008 to 2009	1,892 IUDs (2008)	5,988 IUDs (2009) Tests of significance not reported
2	Chang, Liu, & Chow, 1969	Taiwan	CBA		20 to 44 years old	Matched married women	Fertility rates (per 1000) among IUD acceptors before and after intervention, matched by parity to controls (non-pregnant married women)	1964 to 1968	-48%	-80% [†]
3.1	IFPS Technical Assistance Project (ITAP), 2012	Agra, India	Before and After	1983 (baseline) and 1463 (endline) currently married women	15 to 49 years old	BPL rural married women	Change in modern contraceptive prevalence	2006 to 2009	26.7%	30.8% ^{**}
3.2	IFPS Technical Assistance Project (ITAP), 2012	Kanpur Nagar, India	Before and After	1428 (baseline) and 1280 (endline) currently married women	15 to 49 years old	BPL slum married women	Change in modern contraceptive prevalence	2006 to 2012	38.5%	43.0% ^{**}
3.3	IFPS Technical Assistance Project (ITAP), 2012	Haridwar, India	Before and After	2133 (baseline) and 1324 (endline) currently married women	15 to 49 years old	BPL rural married women	Change in modern contraceptive prevalence	2006 to 2009	32.8%	43.1% ^{**}
4	Meuwissen, Gorter, Kester & Knottnerus, 2006	Nicaragua	Before and After	19 contracted facilities that treated voucher clients	N/A	4 public facilities 10 NGO facilities 5 private for profit facilities	Change in percent of simulated clients received preferred contraceptive method with a receipt	2000 to 2002	50%	80% [†]

5	Janisch, Albrecht, Wolfschuetz, Kundu & Klein, 2010	Kenya	Cross-sectional	Number of FP clients at 27 contracted facilities	Men and women of reproductive age	Poor men and women of reproductive age seeking FP services using a voucher and identified using non-standard poverty screening tool	Number of FP clients (OBA & non-OBA) at 27 sampled facilities seeking IUCDs, implants, male and female sterilization	July to October 2006 (baseline) and June to October 2007 (endline)	653 total FP clients 0 voucher clients	1104 total clients 772 voucher clients <i>Tests of significance not reported</i>
6	Population Council, 1993	Tunisia	Before and After	Unknown	15 to 44 years old	Women in sparsely populated rural area were visited at home and given a coupon if they expressed preference for IUD or sterilization	Change in modern contraceptive prevalence	1975 (two years)	6.6%	21% <i>Tests of significance not reported</i>
7.1	Obare et al., 2013	Kenya	Cross-sectional	2,527	15 to 49 years old	Economically disadvantaged women	Odds ratio of ever using LAMP (population level) among voucher exposed versus non-exposed	2010	0.6 OR (95% CI= 0.3-1.1)	1.5 OR** (95% CI= 1.0-2.1)
7.2	Obare et al., 2013	Kenya	Cross-sectional	2,527	15 to 49 years old	Economically disadvantaged women	Odds of using LAMP in past 12 months (population level) among voucher exposed versus non-exposed		0.9 OR (95% CI = 0.4-1.9)	1.4 OR (95% CI= 0.9-2.2)
8	Meuwissen, Gorter, Segura, Kester & Knottnerus, 2006	Nicaragua	Cross-sectional	3,301	12 to 20 years old	Adolescents in poor neighborhoods	Change in percent of current modern contraception use compared to intent to use modern contraceptives among sexually active non-pregnant voucher redeemers	September 2000 to July 2001	24%	57% <i>No test of significance</i>
9	Kemplay, Neggaz & Mani, 2013	Madagascar	Cross-sectional	47,152 total FP services provided at BlueStar facilities, 9,864 LARC services	15 to 49 years old	WRA	Percent of services for long-term reversible methods at BlueStar franchises subsidized by vouchers	January to September 2011	6,397 (65%) non-voucher LARC services	3,467 (35%) voucher LARC services <i>No test of significance</i>
10	Agha, 2011)	Pakistan	CBA	4,051	15 to 49 years old	Women who met poverty selection criteria	Change in use of PNFP among the bottom 20% in voucher and non-voucher areas (DiD)	November 2009 to January 2011	+2.1% NS	+3% NS
11.1	Khurram Azmat et al., 2013	Pakistan	CBA	8,995	15 to 49 years old	Married WRA living within 2 to 3 kilometre radius of service provider	Change in use of any modern method between baseline and endline among treatment and controls (DiD)	2009 to 2010	+3.2%	+8.2% (p<0.001)
11.2	Khurram Azmat et al., 2013	Pakistan	CBA	8,995	15 to 49 years old	Married WRA living within 2 to 3 kilometer radius of service provider	Change in use of IUCDs between baseline and endline among treatment and controls (DiD)	2009 to 2010	+5.7%	+10.2% (p<0.001)

12	Meuwissen, Gorter & Knottnerus, 2006	Nicaragua	Cross-sectional	3,009	12 to 20 years old	Adolescents in poor neighborhoods	Use of SRHC over 15 months	2000 to 2001	18.9% adolescents in control used SRHC	33.5% voucher receivers used SRHC aOR = 3.07 (95% CI= 2.45-3.84)
13.1	Bajracharya, Veasnakiry, Rathavy & Bellows, 2015	Cambodia	CBA	3,922	18 to 45 years old	Married WRA with a 'poor card' ID	Adjusted odd ratio of use of LARC or permanent method (PM) among women currently using any contraceptive in voucher areas in the post-intervention period compared to women in pre- or post-intervention control groups or pre-intervention treatment	2011 to 2013	+1.6% increased use of LARC	+5.3% increased use of LARC 3.32 greater odds to use a LARC or a PM [95% C.I. =1.54 - 7.54] (p<0.05).
13.2	Bajracharya et al., 2015	Cambodia	CBA	3,922	18-45	Married WRA with a 'poor card' ID	Adjusted odds ratio of modern contraceptive use versus a traditional method or not using a method at all among all women residing in voucher areas in the intervention period compared to women in control areas or women in treatment areas during the pre-intervention period	2011 to 2013	+5.8% increased use of modern contraception	+9.2% increased use of modern contraception 1.35 greater odds of using a modern contraceptive [95% C.I. = 1.00 - 1.81] (p<0.05)
14	Chin-Quee, Wedderburn, Otterness, Janowitz & Chen-Mok, 2010	Jamaica	RCT	1,008	Older than 16 years old	Women purchasing emergency contraceptive pills (ECPs)	Uptake of oral contraceptive pills for more than 2 months with a voucher targeted to EC consumers	2006 to 2007	11%	13% NS
15.1	Ashraf, Field & Leight, 2013	Zambia	RCT	1,664	18 to 40 years old	Married women in low-income urban catchment of a primary care clinic	Probability of starting use of modern contraception (IUCD, injectables, pills, implants) for first time by endline	2006 to 2007	7%	25% ††
15.2	Ashraf et al., 2013	Zambia	RCT	1,664	18 to 40 years old	Married women in low-income urban catchment of a primary care clinic	Probability of using injectable contraception for first time by endline	2006 to 2007	4%	10% ††

† p < 0.05

†† p < 0.01

NS (not significant)

Quality of Studies

Quality of the study designs was assessed using Cochrane criteria for Effective Practice and Organization of Care (EPOC) reviews for studies with a control group, *i.e.* RCTs and CBA studies (see Table 2).

Two research assistants independently assessed the risk of bias using the Cochrane EPOC group standard criteria for RCTs and CBA studies. They checked the adequacy of randomization and concealment of allocation, blinding of patients, health care providers, data collectors, and outcome assessors, and extent of loss to follow-up. A study supervisor arbitrated any discrepancies between research assistants. Studies using a before-and-after design and cross-sectional studies were not assessed for quality.

Of the 15 sources, nine reported results from a study design that lacked a comparison group, *i.e.* cross-sectional and before-and-after designs. The other six sources reported results from RCT and CBA designs. Among the six sources, the two RCTs had a low aggregate risk of bias and the four CBAs had an unclear aggregate risk of bias (Table 2).

TABLE 2: Quality Measures and Risks of Bias in the Included RCT and CBA Studies

	Design	Allocation Sequence Generated	Allocation Sequence Concealed	Similar Baseline Outcome Measurements	Addressing Incomplete Outcome Data	Prevention of Knowledge of Allocated Interventions	Protection Against Contamination	Free from Selective Reporting	Aggregate Risk of Bias	Design or Analysis Limitations
Agha,2011	CBA	Low risk	Low Risk	High Risk	Unclear Risk	Unclear Risk	High Risk	Unclear Risk	Unclear Risk	None
Khurram Azmat et al., 2013	CBA	Low Risk	Low Risk	Low Risk	Unclear Risk	Unclear Risk	Unclear Risk	Unclear Risk	Unclear Risk	Measuring or controlling for important confounding variables was difficult
Chin-Quee et al., 2010	RCT	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk	None
Ashraf et al., 2013	RCT	Low Risk	Low Risk	Low Risk	Unclear Risk	Low Risk	Low Risk	Low Risk	Low Risk	None
Bajracharya et al., 2015	CBA	Unclear Risk	Unclear Risk	Low Risk	Unclear Risk	Unclear Risk	Unclear Risk	Unclear Risk	Unclear Risk	Possible design limitation could have been spurious associations due to unobserved confounders
(Chang, Liu, & Chow, 1969)	CBA	Low risk	Unclear Risk	Low Risk	Unclear Risk	Unclear Risk	Unclear Risk	Unclear Risk	Unclear Risk	Effective design hinged on matching procedure

Family Planning Outcome Variables

Table 1 lists the FP outcomes extracted from the included sources. Although there were nine primary outcomes of interest, only two types of outcomes were quantified in the literature: 1) utilization of contraceptives and 2) changes to fertility, primarily fertility rates. A third outcome (contraceptive continuation) was mentioned in a study that noted no difference between women who accessed IUDs using a voucher and similar women accessing IUDs without a voucher, but numbers were not provided (Azmat et al. 2012).

Specific contraceptives adopted in each study varied. All programs under study offered a mix of short term and long term methods, with vouchers frequently subsidizing higher cost long term methods, particularly implants and IUDs. One RCT in Jamaica tested the effect of vouchers on emergency contraception (EC).

From the 15 sources, a total of 21 outcome variables were extracted with 20 outcomes grouped under contraceptive uptake or level, and one as fertility changes. Of the 20 outcome variables on contraceptive uptake or level, 17 reported an increase or higher level of contraceptive use among the voucher exposed group; however, four studies failed to test for significance. Three studies found no significant difference in the positive trends of control and voucher groups. No studies reported a decreased utilization or lower contraceptive levels in the voucher group. The one study of fertility rates observed a statistically significant decrease in fertility in the voucher-exposed population.

SYNTHESIS OF RESULTS

Of the six studies with high quality designs (two RCTs and four CBAs), reported results were generally positive. Of the two RCTs, one found a statistically strong association between voucher use and IUD uptake, and the other found no effect between vouchers and uptake of EC. Among the four controlled before-and-after studies, there were six reported outcomes with two non-significant changes in contraceptive use among the general population and PNC clients, three significant increases in contraceptive use, and one significant decrease in fertility.

TABLE 3: Country Programs of Included Studies

Country	Donor(s)	Donor Type	VMA Partners	VMA Partner Type	Service Provider (Private, Public)	Beneficiary Type	Providers (Maximum)	Voucher Price	Transport Covered?	Verification in Program?	Reimbursement Amounts to Providers	Type of Marketing
Cambodia	KfW	Bilateral Agency	EPOS, AfH, PWC	For Profit, NGO	Public and Private	Means Tested and Geographic	20	Free	Yes	Yes	Flat Rate: ANC/PNC 1 US\$. FP Counseling 2 US\$. 10 US\$ ND. 60 US\$ CS. 20 US\$ Compl. 15 US\$ abortion. 7 IUD, 10 Implants 25 Ster.	Community-based distributors identified eligible WRA with ID 'poor card'
Kenya	KfW	Bilateral Agency	PWC	For Profit	Public and Private	Means Tested and Geographic	78	Free	No	Yes	Not Stated	Phase I distributors from (NGOs) were used, received a commission for each voucher. Phase II through salaried distributors
Pakistan	MSI	Bilateral Agency	Private Service Providers	For profit	Private	Means Tested	16	200 Pk. R.s (US \$2.27) for IUCD Only	No	No	Pk. R.s 200 per Provider for Insertion (150), Follow Up (20), Removal (30)	Providers branded 'Suraj' clinics, marketing through FWM, posters, wall paintings, leaflets, door-to-door marketing by FWs
Madagascar	SHOPS, Abt Associates	Multilateral	Banyan Global Jhpiego, MSI, Monitor Group, O'Hanlon Health Consulting	For Profit	Private	Means Tested	50	Ar. 1,000 Average Cost	No	Yes	Flat Rate, Not Stated	CHWs receive fixed stipend for voucher distribution
Jamaica	Hewlett Foundation	Bilateral	Pharmaceutical Society Jamaica,	For Profit	Private	Means Tested	21	US \$5-\$8	No	No	Coupon Discount 3 to 27%	None

			National Family Planning Board, Medimpex									
Zambia	National Science Foundation, Hewlett Foundation, Women & Public Policy Program at Harvard	Multilateral	Society for Family Health	NGO	Public	Means Tested	1	Free	No	Yes	N/A	None
Nicaragua	DfID	Bilateral	ICAS	NGO	Public and Private	Means Tested	20	Free	No	No	Agreed Fee, Not Stated	Distribution in poor Mangua neighborhoods
Pakistan	PSI	Bilateral	Greenstar Social Marketing	NGO, For Profit	Private	Means Tested		Rs. 100 (US \$1.20)	Yes	Yes	R.s 100 for 3 ANC visits, R.s 2,200 (US \$26) combined normal delivery and PNC visit, FP visit R.s 100 (\$1.2).	targeting by project outreach workers
Tunisia	Government	National	National Family Planning Program	Government	Public	Means Tested	None	Free	No	No	N/A	Household distribution
Vietnam	MSI, AusAID, IPPF	Bilateral	Bluestar	NGO, For Profit	Private	Means Tested	81	IUD US \$5.40-\$8.40, Abortion US \$11-\$16.25	No	Yes	IUD 30,000 dong (US \$1.63)	BlueStar poster, branding and IEC materials for franchisees
India	USAID, IFPS	Bilateral	Futures Group-India, Bearing Point, Sibley Int'l., Johns Hopkins University	NGO, For Profit	Private	Means Tested	31	Free	Yes	Yes	R.s 100 for 2 PNC visits, R.s 1500 for sterilization, R.s 300 for IUCD	Street plays and 50 haat (weekly markets)

TABLE 4: Country Programs of Included Studies

	Country	Program	Donor(s)	Donor Type	Initiated by	Years	VMA Partners	VMA Partner Type	Service Providers	Beneficiaries	Services Covered	Providers (Maximum)	Voucher Price	Transport Covered?	Verification in Program?	Reimbursement Amounts to Providers	Type of Marketing
1	Bangladesh	MSCS Voucher Scheme Bangladesh	European Commission	Bilateral Agency	Social Franchise, MSI	2006 to 2010	MSCS	NGO	Public and Private	Poor Pregnant Women	At Least Two ANC Visits, One Pregnancy Hospital Admittance and Delivery (normal and caesarean) with Any Medicine or Treatment, and One PNC Check Up, Travel to and from Clinic	13	Free	Yes	Yes	Flat Rate: Taka 3100 for Normal Delivery and Taka 7500 for Caesarian	Volunteers visit pregnant mothers, advocacy forums
2	Cambodia UNFPA	Health Equity Fund for Reproductive Health	UNFPA	Multilateral Agency	UNFPA	2008 to 2010	District Health Financing Steering Committee (DHFSC)	NGO	Public Only	Poor Women and Couples	RH, FP, SMH, PAC, SRH: FP, SMH, PostD, PMTCT	-	Free	Yes, for referral	Yes	Normal User Fees	-
3	Cambodia KfW	Vouchers for Reproductive Health Services	KfW	Bilateral Agency	KfW	2011 to Present	EPOS Health Consultants, OPM, PWC, AFH	NGO	Public	FP: Poor Men and Women of Reproductive Age, Poor Pregnant Women, Poor and Non-poor Women for Safe Abortion	SMH, FP, Abortion, Long and Short Term FP	70 to 80 HCs, 5 to 10 referral hospitals, a few private facilities	Free	Yes	Yes	Not Stated	-
4	Cambodia MSI	Vouchers Scheme for Reproductive Health in Cambodia	EC, AusAID, USAID	Multilateral Agency	Social Franchise, MSI	2010 to 2012	MSI Cambodia	NGO	Public and Private	Poor Rural Women	FP, IUD, Tubal Ligation, Vasectomy	43	Free	No	-	Not Stated	Village Health Support Groups awareness-raising campaigns
5	Colombia	Profamilia	USAID, State Government	Bilateral agency	Fernando Tamayo	1966 to Present	IPPF	NGO	Private	Youth (ages 10-19), Men and Women	SRH, Contraception, Gynecological Exams, Pregnancy and STI Testing, Abortion, Cervical and Breast Cancer Screenings	66	-	No	Yes	Initial distributor keeps half of price in return for services, now services reimbursed through government's health insurance scheme and subsidized between 85 and 90%	Communication and motivation by female field workers, online sexual education, IEC material
6	Costa Rica	Costa Rican Demographic Association (ADC)	IPPF	Bilateral Agency	Alberto Gonzalez	1	-	-	Private	WRA	Oral contraceptives	123 (1972)	3 colone (US 35¢) or free in 1972 depending on ability to pay	No	Yes	25 to 30% or markup (US 30-50¢) in 1972	Recruitment by national campaigns
7	China	China Basic Health Services Project	World Bank	Multilateral Agency	Government, World Bank	2005 to 2007	Government	NGO	Public	Poor People	RTIs, MCH, hypertension, immunization						
8	Dominican Republic	Red Segura	KfW, USAID, Ministry of Health	Bilateral Agency	PSI	October 2013 to Present	-	-	Private	Young Adults (ages 13-24), Men, Women, Adults of Bottom, Lower, Middle Income Brackets		5	-	-	-	-	-

9	Ethiopia	Ethiopia Blue Star	Royal Netherlands Government, DfID, USAID, Large Anonymous Donor	Bilateral Agency	MSI	2008 to Present	-	-	Private	Young Adults (ages 13-24), Men, Women, Military of Bottom, Lower, Middle Income Brackets	FP, HIV/AIDS, PAC, Safe Abortion, Other Services	585	-	-	Yes	-	-
10	India, Agra, UP	Agra Voucher Scheme, Developed by Sambhav Branding	USAID	Bilateral Agency	USAID, State Government	2007 to Present	District Project Management Unit (DPMU)	NGO	Private	Married Women (ages 15-49), Men of Bottom 20% Income	SMH, FP, RTI/STI, Long Term FP	148	Free	Yes	Yes	Negotiated, Rates at 35 to 50% Below Market Prices	Branding, leaflets, house visits by Accredited Social Health Activists
11	India, Kanpur, UP	Sambhav	USAID	Bilateral Agency	USAID, State Government	2006 to 2012	Hindustan Latex Family Planning Promotion Trust (HLFPPT)	NGO	Private	Married Women (ages 15-49), Men of Bottom 20% Income	SMH services, FP, STI/RTI Similar to Agra+, Ultrasound, Blood Test, Immunization	75	Free	Yes	Yes	Negotiated, Rates at 35 to 50% below market prices	Branding, leaflets, house visits by volunteers
12	India, Jharkhand	Sambhav	USAID	Bilateral Agency	USAID, State Government	2006 to 2012	Jharkhand Health Society, Government	NGO	Private	Married Women (ages 15-49), Men of Bottom 20% Income	FP, Short and Long Term (only one with injectable)	2	Free	Yes	Yes	Negotiated, Rates at 35 to 50% below market prices	Branding, leaflets, house visits by Sahiyyas
13	India, Uttarakhand	Sambhav	USAID	Bilateral Agency	USAID, State Government	2006 to 2012	Uttarakhand Health and Family Welfare Society	NGO	Private	Married Women (ages 15-49), Men of Bottom 20% Income	SMH Services, FP, Infant Care (last probably part SM)	35	Free	Yes	Yes	Negotiated, Rates at 35 to 50% below market prices	Branding, leaflets, behavior change communication by ASHAs
14	Kenya	RH-OBA Program	KfW	Bilateral Agency	State Government	2006 to Present	PwC	For Profit	Private and Public	Poor Women ages 15-49 (WRA, pregnant), GBV Services (All Women)	Safe Motherhood, Long Term FP, Sterilization, GBV	74	KSh. 100 (US \$1.25) for FP, KSh. 200 (US \$2.50) for Safe Motherhood GBV Free	no	Yes	Flat Rate for All Services (vary in districts) Excluding Complications	Radio commercials, posters
15	Kenya	Friends of Youth	Rockefeller Foundation, US CDC	Bilateral Agency	PC, Family Planning Association of Kenya (FPAK)	1997 to 2010	Family Health Options of Kenya (FHOK), formerly Family Planning Association of Kenya (FPAK)	NGO	Private	Young Poor (ages 10-24) and Influential Adults	SRH	12	US 50¢ to \$1.50	No	No	Underwritten by Association and Collaborating Service Providers	Group discussions, role playing, drama and lectures by FOys
16	Korea	Korean Family Planning Programme	81% by Government, 19% by Donors (50% by PC), up to 68	Bilateral Agency	Government	1964 to 1985	Planned Parenthood Federation of Korea	State Government	Public	Women (ages 15-44) and Men of Reproductive Age	IUD, vasectomy, oral contraceptives	Not Mentioned	Not Stated	No	Yes	15% for IUD insertion, 30% vasectomy, 60% to FP worker, 40% to supervisor	Door to door by FP Field workers, Mothers Clubs, Happy Home FP magazine, Mobile teams
17	Madagascar	Top Reseau	SF funded by USAID, Global Fund	Bilateral Agency	PSI	2005 to Present	Jhpiego	NGO	Private	Youth (ages 15-24), Men and Women of Reproductive Age	FP, STIs or VCT	170 in 173 clinics	Ar 2,000 (\$1.00) for IUD insertion	No	Yes	US 75¢ to \$1.00 per General Voucher Consultation, 50¢ for VCT-Specific Voucher	branding, billboards, flyers, brochures, posters, radio, TV and peer educators
18	Madagascar	BlueStar	SF funded by USAID	Bilateral Agency	MSI	2011	-	NGO	Private	Youth (ages 15-24), Men and Women of Reproductive Age	FP	70	Unknown	No	Fraud Check on Small Sample of Vouchers	Unknown	Bluestar branding and marketing. Peer education in community distribution too.

19	Myanmar	Vouchers Sun Quality Health Franchise	SF: BMGF, Anonymous Donor, USAID, 3DF, Danish Government Fund, UNFPA	Bilateral Agency	PSI	2001 to Present	Sun Quality Health (SQH) private physician network	Private for Profit	Private	FP (IUD), STI Treatment Discounts	FP (IUD), STI Treatment Discounts	1,579 clinics	US\$0.050 for RH,STI services	No	Yes	41 to 95% Subsidy on Different Products	Promotional materials
20	Nicaragua	Vouchers for Adolescents	DFID, Dutch Government, USAID	Bilateral Agency	ICAS	2000 to 2005	ICAS	NGO	Public and Private	Poor Adolescents	SRH: Counseling, FP, Pregnancy Test, First Pregnancy RTIs/STIs	35 Total: 20 Managua, 10 Chinand, 5 Rivas	Free	No		Flat Rate	Adolescents talked to at markets, near schools, house-to-house in barrios
21	Pakistan MSI	Suraj Private Provider Partnership	Anonymous Donor	Bilateral Agency	MSI	2008 to 2012	MSS, MSI	NGO	Private	Low Income Rural Women	IUCD Insertion, Follow Up, Removal	100	Free	Yes	Yes	200 per Provider: Insertion (150), Follow Up (20), Removal (30)	Household visits and counseling by CHWs
22	Pakistan	Sehat Sahulat Card (SSC)	District Governments of Kasur and Rawalpindi	National	Contech International	2009 to Present	Zahanat Foundation	NGO	Private	Underprivileged Pregnant Women, Children Under Five Years Old	ANC, Delivery, PNC	100	-	Yes	-	-	-
23	Pakistan, DG Khan, Punjab	Greenstar Voucher in DG Khan, Punjab	USAID	Bilateral Agency	Greenstar	2008 to 2009	Greenstar	NGO	Private	Poor pregnant Women in DG Khan, Jhang, Sindh (Badin and Shikarpur).	SMH (Deliveries, ANC, PNC), FP	22	\$1.20	Yes	In DG Khan, Identification for selection of women to join voucher scheme verified by elected Union council	FFS Scheme with Same Fees for All	Lady Health Visitors
24	Pakistan, Jhang, Punjab	Greenstar Voucher in Jhang district, Punjab	PSI	Bilateral Agency	Greenstar	2009 to 2012	Greenstar	NGO	Public	Poor Pregnant Women	SMH Including FP	29	\$1.20	Yes	Sample household verification survey by external research agency	Flat Rate	Field workers market vouchers
25	Pakistan KfW (Charsadda district in KP province)	Greenstar III	KfW	Bilateral Agency		2010 to 2011			Private	Poor Women	SMH, FP Within SMH Services						Door to door visits
26	Sierra Leone	Healthy Life, Healthy Baby	MSI	Bilateral Agency	MSI	2009	MSI	NGO	Private	Poor Pregnant Women, Poor WRAs	FP (LAPM), SMH (ANC, delivery, ultrasound, PNC with FP)	20		No	Exit Interviews	Flat Rate	
27	Taiwan	Taiwan Population Studies Center Coupon System	USAID, PC	Bilateral Agency	Government	1964 to 1985	Taiwan Provincial Institute of Family Planning, Ministry of Health	Government	Public and Private	Couples Needing FP	IUD, Sterilization	800 Clinics for BTC+VS	Free	No	After 2 to 3 Months, Field Worker Checks if Coupon Used	Subsidy	mass media, group education in schools and markets, group education
28	Uganda KfW GPOBA	Healthy Life, Healthy Baby Family Planning Voucher Project	KfW, Government of Uganda, World Bank Global Partnership for Output-Based Aid	Bilateral Agency	KfW, GPOBA—MSI implemented	2006 to 2012	MSI	NGO	Private	Poor Women and Men	STI Treatment, ANC, Delivery, PNC	130	Healthlife 1500 Ush (US 75¢), Healthy Baby 3,000 Ush (US \$1.50)	No	Yes	Flat Rate, Not Specified	Radio talk shows, program announcements, meetings, FP brochures, community sessions, mobile cinema, posters, flyers, leaflets

29	Vietnam	BlueStar Vietnam	MSI, AusAID, IPPF	Bilateral Agency	MSI	2008 to Present	MSI	NGO	Public and Private	Poor People	Access to Gynecological Exam and Cervical cancer Check Through Visual Inspection by Acid Acetic (VIA), IUD, Safe Medical Abortion	299	Free	-	Yes	Subsidy	information was disseminated by community health care workers and Bluestar website and call centres
30	Vietnam	<i>Tinh Chiem</i> (Sisterhood)	European Commission, Atlantic Philanthropies	Multilateral Agency	MSI	2007 to Present	-	-	Public and Private	Young Adults (ages 13-24), Men, Women	Cervical and Breast Cancer Screening, Safe Abortion, FP (IUD)	181	-	-	-	-	Branding and brand ambassadors
31	Zambia	Zambian Contraceptive Access Study (ZCAS)	National Science Foundation, Hewlett Foundation, Women & Public Policy Program at Harvard	Multilateral Agency	SFH	2006 to 2007	SFH	NGO	Public	Married Women (ages 18-40) in One Low Income Urban Area	Implants, Injectables	1	Free	No	Yes	N/A	No
32	Zambia	Vouchers for Sexual and Reproductive Health for Young People Participating in a Youth Programme	DfID	Bilateral Agency	PC	2012	PCI	NGO	Public and Private	Adolescent Girls	General Health, FP		Free			N/A	

Discussion

Evidence on the effectiveness of vouchers for contraceptive products and services has largely focused on metrics for contraceptive use, the reported outcomes of which this review found most to be positive and statistically significant. The one study of fertility in Taiwan from 1969 found a positive and significant decrease in fertility of voucher acceptors compared to a similar group of women matched on age and parity. A voucher is a useful means for tallying contraceptive service visits to determine utilization outcomes. It is not surprising that nearly all studies reported on changes in utilization and most studies found a significant and positive improvement in contraceptive utilization.

The literature is largely consistent on utilization outcomes; there are, however, missing metrics on other dimensions of performance and failure to synthesize insights from program operations. Discontinuation is an important but underreported area. One Pakistan study found IUD discontinuation the same in voucher and non-voucher populations but offered no numbers, and no other study has reported on this outcome (Azmat et al. 2012).

Aside from one study in Nicaragua on simulated clients receiving their preferred methods in a before-and-after design, no studies report on supply side effects of FP vouchers, which are critical to successful service delivery. The FP voucher, with its quality assurance mechanisms and financial reimbursement for service delivery, is an underappreciated strategy for addressing supply side challenges.

Synthesis of findings from program operations is beyond the scope of this review, but would be a valuable contribution to the literature. The Marie Stopes experience in Madagascar included a small follow up on 65 voucher clients and found two vouchers issued at a Bluestar facility, contrary to program requirements for voucher distribution to beneficiaries in the community (Kemplay et al. 2013). That study's results were not sufficiently rigorous to meet this review's inclusion criteria, but the findings would be of interest in a scoping review of program design and functionality. Another programmatic area for inclusion in future scoping reviews is the unused percentage of distributed FP vouchers. Several reports present data on non-use but do not present before-and-after results, time trends, or a comparison to alternative forms of community outreach to determine whether non-use of some percentage in that programmatic context was above or below a given standard.

LIMITATIONS

Although this review found largely positive effects, there are limitations to consider when synthesizing the results. In screening search results, this review found 31 contraceptive voucher programs; however, only 13 had one or more studies (see Table 4 for a list of identified FP voucher programs). As the publication years indicate, most studies were published after 2000. Many early voucher programs in the 1960s and 1970s were not well documented and could not be included in this review, a limitation that has been noted elsewhere.

Of the 21 study outcomes in 15 source reports, 13 outcomes were reported from before-and-after or cross sectional designs. These are weak designs that offer little ability to attribute causation. Even CBAs cannot control for potential unobserved confounders. Albeit weak, the study designs did provide a consistent story with the direction and significance of positive effect. Such evidence, however weak, indicates a need for further research with better designs.

Another limitation was the lack of disaggregated outcomes by provider type. Private and public providers could respond differently to reimbursements for FP voucher services. Studies failed to report results from sub-group analysis, however.

POLICY IMPLICATIONS

In spite of these limitations, this review has yielded important information on the effectiveness of voucher programs subsidizing contraceptive products and services. Voucher programs are intended to target subsidies to beneficiaries who, in the subsidy's absence, would have lower probabilities of service utilization. In most studies, beneficiaries were defined by economic status; in two programs adolescents were identified as disadvantaged and provided vouchers. This review found that contraceptive uptake did increase among targeted beneficiaries in most studies.

Vouchers demonstrate a productive mechanism for governments to engage private providers. Of the 31 programs identified during this review, 18 contracted only private providers, while seven other programs contracted a mix of public and private providers, and six programs engaged only public providers. The results suggest that voucher programs can expand client choice by reducing financial barriers to contraceptive services and make private providers an option for disadvantaged clients previously restricted by cost.

FUTURE DIRECTIONS

Future research is needed to focus on both supply- and demand side outcomes. Equally important, research is needed to explore how variation in program design can impact outcomes. Promising areas for future research demand side, supply side, and policy issues:

Demand Side Questions

1. Do voucher programs influence users of less effective contraceptive methods to switch to more effective long term methods?
2. What are voucher programs' effects on contraceptive uptake and contraceptive continuation rates?
3. Is the introduction of vouchers associated with improved continuation rates?
4. What should be the minimum duration of voucher interventions for a sustainable change in contraceptive behavior?
5. Is a single method FP voucher more effective than a comprehensive voucher for contraceptive uptake?
6. Do contraceptive vouchers programs introduce acceptance (acquiescence) bias?
7. Are expiration dates associated with improved uptake of distributed FP vouchers?
8. Which FP voucher program distribution strategies are associated with reaching the greatest proportion of the poorest 40 percent, within specific countries?
9. Is there a significant difference in FP voucher uptake among the bottom two quintiles and adolescents when vouchers are sold rather than distributed for free?
10. Is there any effect of voucher interventions on FP-related health outcomes such as changes in FP methods? Does this have an impact on patient choice or lead to coercion?
11. Are free (*i.e.* fully subsidized) contraceptives less valued by clients than partially subsidized or unsubsidized contraceptives?

Supply Side Questions

1. What is the level of suspected fraud and waste in FP voucher programs?
2. Does competition among facilities (or CHWs/CBDs) increase after introducing an FP voucher program?
3. Does patient satisfaction with FP services change after the introduction of a FP voucher program?
4. What happens to provider behavior after the removal of a FP voucher program?
5. Do voucher programs have any influence on health worker performance, service delivery, and quality in FP? If so, how? How can payments and targets be set more efficiently?
6. What is the influence of vouchers on quality of services and the right to choose desired contraceptives?

Policy Questions

1. What is the cost-effectiveness of FP voucher programs?
2. What is the role of vouchers when FP methods are provided at no or little cost?
3. What type of provider mix is optimal in voucher programs for contraceptive uptake?
4. How do vouchers support women's empowerment?
5. What can strengthen male involvement in FP voucher programs?

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AUTHOR CONTRIBUTIONS

Ben Bellows drafted the research protocol, discussed the scope of the review with Dr. Bajracharya, with substantial contributions to the concept and design, led the acquisition of data and its analysis and interpretation, and participated in multiple rounds of the manuscript draft.

Ashish Bajracharya drafted the research protocol, discussed the scope of the review with Dr. Bellows, made substantial contributions to the concept and design, participated in analysis and interpretation of the data, and participated in multiple rounds of the manuscript draft.

Carol Bulaya implemented the search strategy process, provided suggestions on iterations of the search, screened articles in consultation with Ms. Inambwae, and drafted early versions of the report.

Sophie Inambwae implemented the search strategy process, provided suggestions on iterations of the search, screened articles in consultation with Carol Bulaya, and drafted early versions of the report.

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