

## Brief Report

# What makes health demand-side financing schemes work in low- and middle-income countries? A realist review

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## Significance for public health

This article focuses on a rare topic i.e. Realist Review, which is an emerging concept to explore causal factors behind every intervention that make it effective or ineffective. This manuscript is a first attempt on a Realist Review of health sector demand-side financing (DSF) in a number of low- and middle-income countries. DSF is a widely employed health promotion strategy in many countries to improve health seeking behaviour. However, the existing evidence explores only its effectiveness and not the determinants of its effectiveness. It is also essential to understand the causal pathways of DSF's effectiveness, i.e. what are the factors affecting its effectiveness. This Realist Review attempts to explore the causal pathways of effectiveness of many prominent DSF initiatives in the world. The study findings have policy implications and will be widely referred to in future.

## Abstract

This realist review explored causal pathways of the possible consumer effects of health sector demand-side financial (DSF) incentives, their contextual factors and mechanisms in low-and-middle-income countries. We searched six electronic data bases and identified 659 abstracts with different evaluation designs. Based on methodological rigor and content relevance, only 24 studies published up to April 2013 were selected for the final review. A conceptual framework consisting of various program theories on potential context-mechanism-outcome (C-M-O) configuration of DSF initiative was designed, tested and adapted during the review. Synthesized results were presented as a C-M-O configuration for each of the consumer-side effect. DSF was effective to improve health seeking behaviour considerably and health status to some extent. The causal pathway of DSF's functioning and effectiveness was not linear. Key demand-side contextual factors which affected DSF's consumer-side effects were background characteristics of the beneficiaries including their socio-cultural beliefs, motivations, and level of health awareness. At the supply-side, service availability status and provider incentives were contextual determinants. The mechanisms which enabled the interaction of contextual influence were consumer and provider accountability and consumer trust on providers. In order to enhance DSF programs' effectiveness, their design and implementation should carefully consider the potential contextual elements that may influence the causal pathways.

## Introduction

Currently, many low- and middle-income countries (LMIC) provide demand-side financial incentives (DSF) to improve healthcare service utilization and health-related behaviour.<sup>1</sup> The most commonly experimented DSF incentives are conditional cash transfers (CCT) and

vouchers.<sup>2</sup> It is assumed that a financial incentive raises consumers' purchasing power and choices on health providers and finally appropriate health seeking behavior.<sup>3,4</sup> A wider expansion of DSF initiatives across LMICs had happened after the decade-long success of the Latin American Countries (e.g. Mexico and Brazil).<sup>2</sup> Such countries provided CCT for health and education to low-income households and experienced improvements in health seeking behaviour and certain health indicators. Subsequently, many Asian and African countries began DSF programs to enhance the status of maternal and child health and certain infectious diseases (e.g. malaria and HIV).<sup>5</sup>

## What is unknown on demand-side financial incentives?

This review focused on government-initiated demand-side financial incentives in low-and-middle income countries (LMIC). The underlying principle of a financial incentive is that any monetary boost to change a health seeking or related behaviour has the potential to enhance population health status through different mechanisms.<sup>3</sup> For example, if an incentive triggers timely health seeking, it can reduce the complications and thereby potential deaths.<sup>2</sup> An incentive on improved life style (e.g. dietary practice) can also reduce health risks.<sup>4</sup> However, in reality, the global evidence is inconclusive on DSF's effectiveness on health status. Despite this inconclusive effectiveness of DSFs on health status, several LMICs have widely adopted them during the last decade, specifically to address Millennium Development Goals (MDG). As per the evidence, DSF schemes have been successful in improving intermediate outcomes such as health seeking behaviour.<sup>6</sup> However, it is not known why DSF schemes are effective on health seeking behaviour and do not substantially contribute to the end result, i.e. population health. One of the known reasons is that an improvement in population health status is a complex process, and apart from client behaviour adherence, it also requires appropriate quality of care.<sup>2</sup> This optimum quality of care is not being addressed in many DSF initiatives. Since DSF initiatives are targeted approaches for health improvements in a stipulated time frame, it is essential to know what really makes such incentives work and what does not?. A basic understanding of the causal mechanisms of DSF's functioning would be relevant to have an informed approach, while employing them rapidly to improve health status. Otherwise, many countries' investment on DSF might be disappointing to reach MDGs, post-MDG agenda and other unmet health goals.

## Specific objectives

This is a realist review assessing the causal pathways of the

Government initiated demand-side financial incentive programs in LMICs, as per the classification of the World Bank.<sup>7</sup> It specifically explored: i) what were the nature and forms of their consumer outcomes?, ii) what were the contextual factors and mechanisms affected such outcomes? iii) why do they produce such outcomes?

## Materials and Methods

### Rationale for a realist review on causal pathways of demand-side financial incentives

Realist review is a relatively new strategy for synthesizing research evidence with an explanatory focus. Usually systematic review is not robust enough to understand the causal pathways, rather it can only explore the causality.<sup>8</sup> Hence, realist review is utilized to unpack the mechanism of how and why complex social interventions work or fail in particular settings? It applies a *generativist* approach to causation by assuming that the programs do not work themselves, but the underlying reasons or resources that they offer populations usually generate changes.<sup>9</sup> It assumes that an intervention goes through many processes such as design, implementation and evaluation.<sup>10</sup> During such processes interventions interact with people, socio-cultural structures, hierarchies, and other endowments (*e.g.* monitoring mechanisms) and all these may not be linear and reproduce same choices or results. This causal chain is a cause-effect relation of the interaction among input, context and mechanism, leading to a particular outcome. Thus, realist reviews scrutinize the interaction between context, mechanism and outcome in a sample of primary studies. As explained earlier in the introduction section, currently, the causal pathways of the effectiveness of DSF initiatives are totally unknown.<sup>2</sup> Despite not knowing DSF works for whom, why and under what conditions, several LMICs have adopted them to address many unmet health goals. Merely concluding that DSF is effective to improve health behaviour will not make it eligible to utilize for improving population health status. If a DSF scheme is not really enhancing health status, it is essential to know what are the underpinning mechanisms and contextual factors influencing DSF's causal pathways of effectiveness.

### Changes in the review process

This realist review was initially planned to include only conditional cash transfers. However, based on the initial literature scope, the reviewers felt the need to include vouchers as well. The existing evidence indicated that in practice, the trajectory of the functioning of a voucher is more or less similar as that of a CCT.<sup>2</sup> For example, just as a CCT, vouchers also induce a behaviour change through financial incentives. The review followed the principle of pragmatism as it included only those records which the reviewers felt relevant to the study objectives and policy implications.

### Conceptual framework on program theory

As a realist review this study conducted a test of *theory integrity*.<sup>9</sup> In other words, it tested the validity of the selected program theories formulated by the study on certain expected outcomes, contextual factors and mechanisms of DSF initiatives in the reviewed papers. The term *program theory* refers to an abstracted description and/or a diagram that lays out what a program comprises and how it is expected to work.<sup>11</sup> Here, we described the program theory as *C-M-O configuration* (explained further in the next paragraph) of a consumer-side effect of a DSF program. To derive a program theory, we did not have a trace of any existing realist review on this topic. Therefore, we depended on multiple sources such as brain-storming of this review team, review of relevant literature and key actors' opinion. These actors belonged to

policy making bodies, and research and academic institutions.

The review team, first, constructed the program theory for each of the DSF's consumer-side effect in an exploratory, non-exhaustive and inductive way. The study considered three potential consumer-side effects of DSF schemes *i.e.* health seeking behaviour, health status and out-of-pocket expenditure, based on the existing literature.<sup>14</sup> Then, a framework was formulated based on the context-mechanism-outcome (C-M-O) principle and later on got validated with experts. While validating, experts were requested to either accept or refute or modify the CMO principle for each of the consumer-side effect. There was also a progressive focus during the review, as the conceptual framework was modified based on the emerging findings till the indexing of codes. However, the final contextual factors and mechanisms which were emerged during the data synthesis were not updated in the conceptual framework (rather presented in Figure 1 as part of the results).

The conceptual framework (Table 1) shows the program theory of DSF on its consumer-side effects and their C-M-O configuration. C-M-O configuration is a conceptual approach to link the elements of context, mechanisms and outcomes of an intervention.<sup>10</sup> We hypothesized that the *contextual factors* and *mechanisms* will vary according to the type of a health intervention. For this review, *Context* was referred to a broad social or geographical setting where the intervention had taken place, including the background characteristics and health awareness of beneficiaries and the prevailing service delivery status. The intent was to see how a particular context acted on a specific DSF program mechanism to produce a consumer-side effect.

*Mechanism* was considered as something not inherent to the intervention, but as a function of the participants and the context.<sup>12</sup> In DSF interventions, the actors or participants naturally include the beneficiaries and the providers as the mechanisms at both the demand- and supply-sides can affect the effectiveness of a DSF program.

### Scoping of literature

The prior experience of the authors on DSF initiatives in LMICs helped to identify the countries, initiatives, literature sources and experts. To retrieve the preliminary literature base on DSF initiatives, we searched PubMed, IDEAS and data bases of development and research agencies (*e.g.* World Bank). Based on the key literature sources, it was evident that there was a need to consult experts on developing the program theory. Searching WHOLIS helped in retrieving the recent evaluations of DSF initiatives in many countries and the relevant experts.

### Searching processes

Though we searched many data bases electronically, we predominantly retrieved the relevant records from three data bases namely PubMed, EMBASE and CINAHL (Appendix). Further, we also retrieved a few records from Google Scholar, WHOLIS and IDEAS. Those data bases and search engines were searched multiple times by two of the authors (SSG and AD) and retrieved around 44,484 potential records. The search was performed between December 2012 and May 2013 through a combination of MeSH and non-MeSH terms (Appendix). The thematic search focused on types of financial incentives, healthcare, and health or disease conditions. The adjunct search was for different country settings or regions. The search strategies and algorithms were revised iteratively in the light of the emerging records. A *snowballing* technique directed the hand search to retrieve certain additional documents (n=17) from the relevant references of the selected papers. In addition, a personal contact with a few experts from development and research agencies helped to identify 853 records.

SSG and AD conducted the search independently, and screened the title, abstract and subject headings against eligibility criteria. Then, SSG retrieved the full-text of potentially eligible studies and re-screened them for final eligibility. AD conducted a random verification

of few records at each stage and disagreements were resolved by discussion.

### Selection and appraisal of studies

Initially, the abstracts were selected only if they had mentioned about any causal pathway of the effectiveness of a DSF initiative. For the final review, by following the principle of a realist review, it included studies of any evaluation design. However, the study designs were expected to have adequate relevance to build the program theory and rigor (*i.e.* data under question was derived in a methodologically appropriate way). More specifically, the review included a study if it had reported on i) any existing government- initiated consumer incentive CCT or voucher program on health, of at least three year-old in an LMIC as classified by the World Bank,<sup>7</sup> ii) causal pathways on any expected outcomes of those initiatives, iii) articles, reports or working papers published up to April 2013 in English language, iv) an adequate methodological standard in generating and reporting the data. The criterion on the age of the program was to make the review suitable to explore causal mechanisms through substantial information, and relevant for policy implications. Studies were excluded if they were reviews.

### Data extraction

Data were extracted and recorded in NVIVO qualitative software. Each study was re-read to create and revise codes iteratively by two of the authors. First, certain study characteristics such as sample size and study subjects, setting and objectives were gathered. Then, the theoretical contributions such as *how, why and under what circumstances* were tabulated for each of the potential consumer-side effect of a DSF. This tabulation for each DSF consumer-side effect was initially done for particular studies individually, and then, got them merged under a particular initiative. The third phase indexed and linked all relevant recorded information (or codes) to the program theory *i.e.* in terms of a C-M-O configuration for each of the consumer effect. This indexing of codes was after a careful examination of all the extracted data on their relevance to the program theory.

### Analysis and synthesis

SSG and AD read each study individually and discussed if the emerging findings support, refute or reinterpret the preliminary program theory. While analysing, both quantitative and qualitative data were considered, as the prevailing evidence base on DSF literature was mostly

**Table 1. Conceptual framework: program theory explaining the causal pathways of the effectiveness of demand-side financial (DSF) programs through context-mechanism-outcome configuration (input + contextual elements + mechanisms = consumer effects of DSF initiatives).**

Outcome	Input factor of DSF scheme configured on causal pathway	Mechanism
Improved health seeking behavior	Design feature of programs - <i>i.e.</i> application and enforcement of conditionality directly affects behavior compliance/health seeking	<ul style="list-style-type: none"> <li>a) Current background characteristics of beneficiaries interact with <i>consumer accountability</i> and finally affect care seeking behavior</li> <li>b) Consumer cognitive assumptions, motivations, health awareness, and socio-cultural beliefs impact <i>consumer accountability</i> and <i>trust on providers</i> and thereby care seeking behavior</li> <li>c) Length of beneficiary exposure on DSF program is directly proportional to a positive <i>care seeking behavior</i> as it influences <i>consumer accountability</i></li> <li>d) Service delivery status (<i>i.e.</i> availability of supplies and drugs) can mould <i>consumer accountability</i> and <i>trust on providers</i> and thereby care seeking behavior</li> </ul> Effectiveness of knowledge dissemination under a DSF program (how appropriate, regular, timely, appealing, and effective) can impact <i>consumer accountability</i> and trust on providers towards a positive care seeking behavior
Improved health status -		<ul style="list-style-type: none"> <li>a) Current economic and educational status of beneficiaries affect <i>consumer accountability</i> towards an improved health status</li> <li>b) Service delivery status (availability and quality) can interact with <i>consumer accountability</i> and <i>trust on providers</i> and finally influence health status</li> <li>c) Provider incentives can enhance their accountability to reduce or prevent irrational prescriptions and thereby elevate health status of patients</li> </ul>
Reduced out-of-pocket spending (OOPS)	Design features of programs <i>i.e.</i> how health aspects were covered comprehensively under conditionality to minimize the scope of OOPS	<ul style="list-style-type: none"> <li>a) Consumer background characteristics (<i>e.g.</i> demographic, geographic, health awareness etc.) can interface with their <i>accountability</i> and <i>trust on providers</i> in terms of rational health seeking behavior and provider choices to reduce OOPS</li> <li>b) Provider incentives elevate provider <i>accountability</i> and this in a way can reduce informal payments and irrational prescriptions towards lesser OOPS</li> </ul>

Mechanisms are denoted in italics.

quantitative. The analytical process was iterative and based on the emerging findings, the program theory on DSF's causal pathway of effectiveness was reformulated, till the indexing of codes. To confine to a particular relevant program theory, the data were synthesized in the form of C-M-O configurations. For instance, for each DSF outcome, we analysed and synthesized what was the contextual element and mechanism, which interacted in a particular way to produce a given outcome? This review was reported by following the RAMSES (Realist And Meta-narrative Evidence Syntheses: Evolving Standards) developed by Wong *et al.*<sup>11,12</sup>

## Results

### Study characteristics

We identified 44,484 records and screened 86 papers for the full-text review (Figure 2). Finally 24 records met the inclusion criteria. Out of them, 9 were quasi-experimental designs, 8 employed randomized experimental designs and 7 were cross-sectional designs (qualitative, quantitative or mixed-methods design) (Table 1). The studies assessed 12 DSF initiatives across Asia (n=4), Africa (n=1) and Latin America (n=7).

### Demand-side financing initiatives: a glance through

Most of the Latin American schemes were multi-sectorial encompassing health, education and poverty similar to the Turkey CCT program. The programs in India, Nepal and Bangladesh were exclusively on safe delivery.<sup>13-15</sup> All DSF initiatives targeted low income groups based on geographical coverage, proxy-income means test, healthcare utilization or health status indicators.

### Causal pathways and effects

The review explored the possible consumer-side effects of DSF initiatives, their contextual determinants and mechanisms through C-M-O configurations. The causal pathway of DSF's effectiveness as per the refined program theory is presented in the conceptual framework in Figure 1.

### Demand-side financing improves health seeking behaviour of beneficiaries

As per the studies, DSF improved health seeking behaviour on various health aspects such as maternal care, child care, vaccination and adult health check-ups. Evidence also indicated that DSF induced certain adverse consumer behaviour in the Latin American context since there were instances of increased fertility rate and intake of high calorie food among beneficiaries.<sup>16,17</sup>

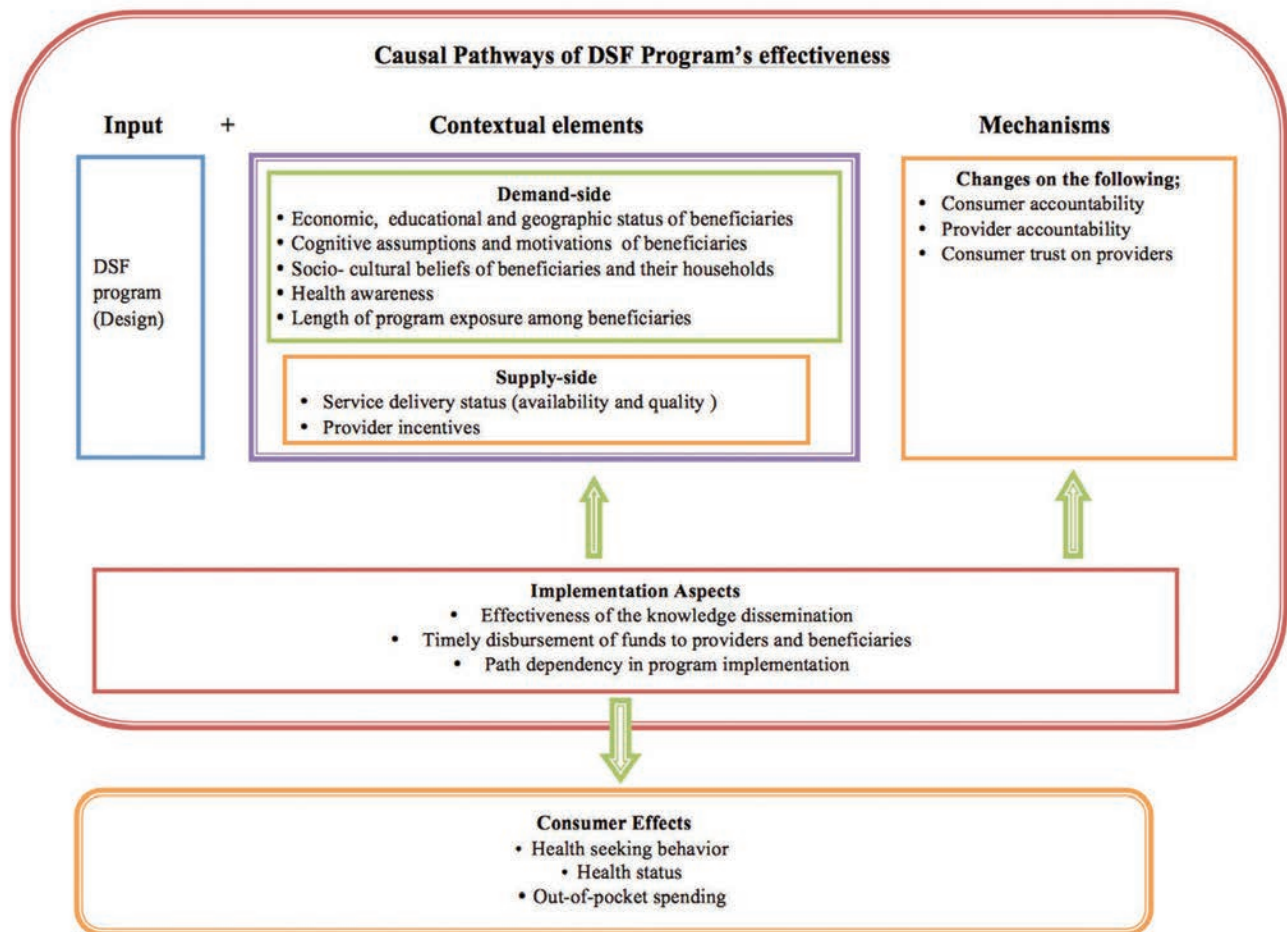


Figure 1. Causal pathways of demand-side financial programs' effectiveness.



## Context-mechanism-outcome configuration

The contextual influence on health seeking was reported in many studies. The most commonly reported contextual elements were background characteristics of beneficiaries, their cognitive assumptions and length of exposure on programs. Health awareness and availability of services were also contextual elements affecting health seeking behaviour. The reported mechanisms which directly affected health seeking were consumer accountability and consumer trust on public facilities. As per the studies, the effect of beneficiaries' economic, education and residential status was mixed on health seeking. For instance, the wealthier women had the highest uptake of incentives in India (OR 1.42) and skilled birth attendance in Bangladesh ( $\beta$ ; 0.125).<sup>13,14</sup> In India, residing far from the secondary hospitals reduced the possibility of institutional delivery.<sup>2</sup> In Tanzania, the richer pregnant women had the highest usage of insecticide treated bed nets by 47.9%.<sup>18</sup> On the contrary, the poorer children had the highest odds of health check-up in Nicaragua (+31.3) and bed net use in Tanzania (+0.18%) compared to their richer counterparts.<sup>19,20</sup> In Mexico, the children of non-literate mothers had the highest height-for-age z score growth rate (+1.5 cm).<sup>16</sup> In Ecuador, the children in the bottom quintile and upper quintile had equal chances of getting treated.<sup>21</sup> In Honduras, even the remote area habitants could enhance their health seeking, with the availability of healthcare at their door steps.<sup>22</sup> As per the stud-

ies, this differential level of health seeking among various population groups was a direct outcome of their varied level of accountability and trust on public facilities (*i.e.* mechanisms) under the DSF program.<sup>23,24</sup>

Consumer health awareness, cognitive assumptions, motivations and socio-cultural beliefs affected health seeking in mixed-ways. For example, the Indian mothers' socio-cultural barrier to approach male providers was lessened under the DSF program, in contrary to the scenario in Turkey.<sup>13-24</sup> Many Mexican mothers withheld the nutritional provision to children under the assumption that if children's nutritional status improves, the incentives would stop.<sup>16</sup> Parents' misconceptions about vaccination affected the timely vaccination of many Brazilian children.<sup>25</sup> In practice, the health awareness of beneficiaries and their socio-cultural beliefs and assumptions moulded the level of consumer accountability as a mechanism towards a particular health seeking pattern.

The beneficiaries' longer duration of exposure on the program was directly related to their positive health seeking in Nepal, Mexico and Tanzania.<sup>20,26,27</sup> The household bed net ownership in Tanzania was increased (+10%) with a longer exposure.<sup>20</sup> In India, mothers with less exposure on the program were more likely to deliver in a private facility with higher costs of care.<sup>28</sup> According to the studies, a longer exposure gradually led to an improved level of consumer accountability (*i.e.* as a mechanism) to trigger a positive health seeking under the DSF program.

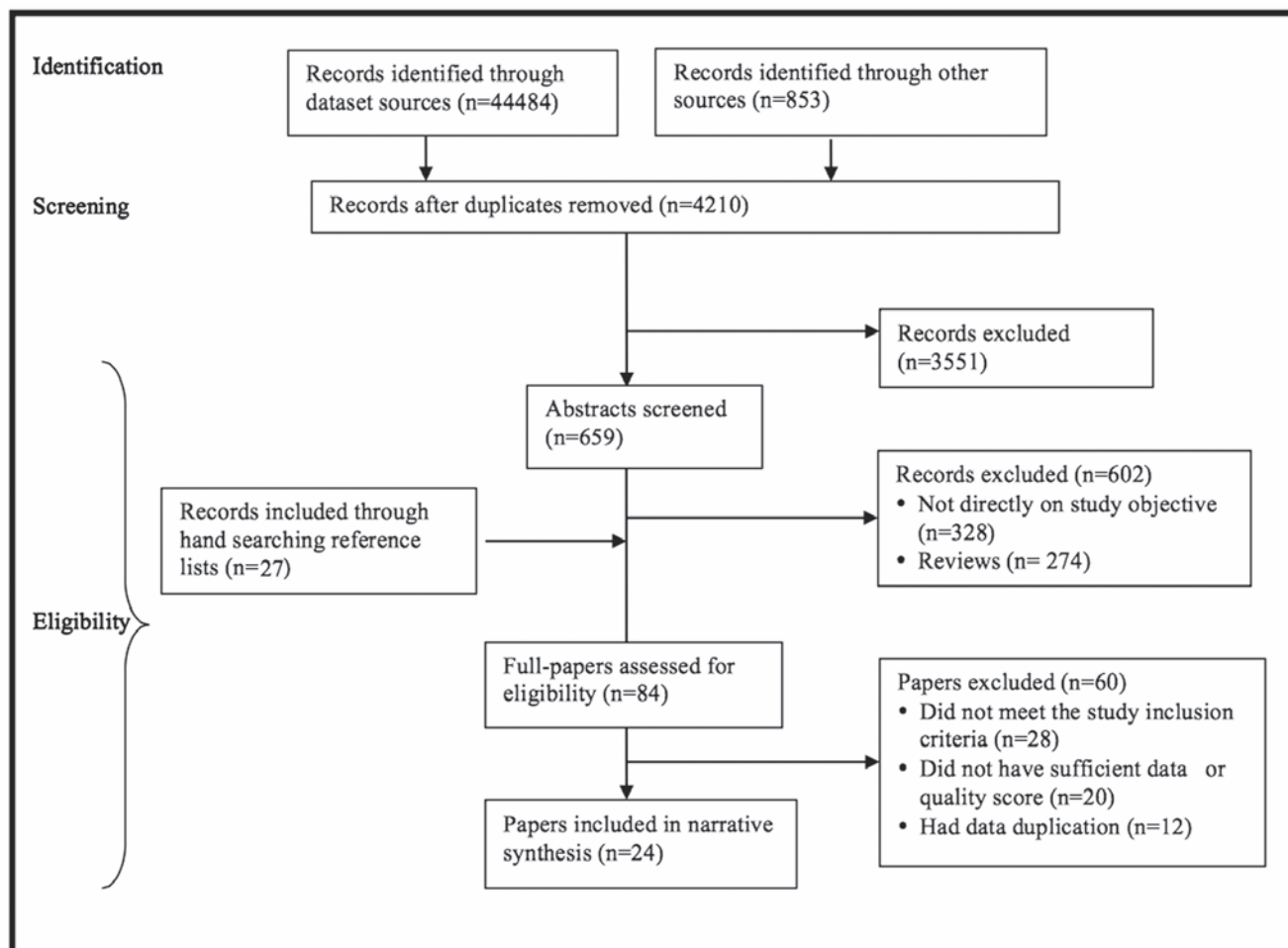


Figure 2. Flow chart on selection of studies.

Service delivery status (*i.e.* availability of services) affected health seeking behaviour under each DSF program either positively or negatively. In Honduras, many elderly could improve their routine check-ups with the establishment of new peripheral health facilities.<sup>25</sup> On the contrary, vaccine shortages affected the immunization of one-fifths of the Brazilian children.<sup>22</sup> This inadequate service delivery limited the access to care and demotivated beneficiaries from an appropriate health seeking.<sup>13,23,24</sup>

The major program implementation factor which affected the health seeking behaviour was the dissemination of knowledge among beneficiaries. Under a DSF program, incentives alone did not work to improve health awareness, rather a proper dissemination of knowledge was essential.<sup>24,28-30</sup> Sensitization of beneficiaries was non-appealing and irregular without focusing on the right behaviour change triggers in Chile, Nepal, Turkey and India.<sup>2,13,26,31</sup> Therefore, beneficiaries in these countries did not possess the proper awareness on the actual intent of the programs. An input factor *i.e.* the design feature of DSF schemes also configured with the contextual elements to improve health seeking behaviour. For instance, if conditionality was not existing or enforced on a particular health aspect, the consumer behaviour compliance in that regard was lesser. In India, since the conditionality was only on skilled birth attendance, the improvement in ante and post natal care was much lower (3.6% and 5% respectively), compared to that of institutional delivery (18%).<sup>2</sup>

### Demand-side financing improves health status of beneficiaries

The review outcomes confirmed that DSF could improve population health, but to some extent. The available evidence on DSF's positive effect on long term health outcomes such as morbidities and mortalities was not substantial. However, a few studies showed improvements in children's growth status and cognitive development, neo natal mortality and adult health status.<sup>13,32</sup> There were also negative health outcomes reported in Mexico. For example, a doubling of cumulative cash transfers to the household was associated with higher BMI, diastolic blood pressure and prevalence of overweight.<sup>29</sup>

#### Context-mechanism-outcome configuration

Beneficiary's background characteristics, availability of services and provider incentives were the contextual factors affecting the health status. The mechanisms which enabled this interaction were provider accountability and consumer trust on providers.

Under a DSF program, the effect of the economic and educational status of beneficiaries was mixed on their health status. In Ecuador, the bottom quintile under-five children had the highest improvement ( $\beta$ : 0.220) on cognitive score.<sup>21</sup> On the contrary, the Mexican wealthier women had reported more reduction in depression symptoms ( $\beta$ : -2.05), than their poorer counterparts.<sup>33</sup> In India, peri-natal mortality was more among the children of poor and less educated mothers.<sup>13</sup> Limited availability and access to quality services and inappropriate care seeking among various population groups were reported to fetch this poor health status for them.

Inadequate availability of quality services had affected health seeking and health outcomes in many programs.<sup>21-22,28</sup> The Indian program could not show a convincing contribution to maternal health status.<sup>2</sup> One of the causal factors in this regard was that though the incentive induced institutional delivery, the program could not offer proper availability of quality services. Many Indian mothers compromised their post partum care as they had to vacate public hospitals due to limited accommodation facilities.<sup>2</sup> Further women were willing to neglect incentives as they had more trust on certain private facilities, which were not part of the DSF program.<sup>2</sup>

A key implementation aspect which affected the access to services

was the *path dependency* of implementation approaches. For instance, in Honduras, though plans were made to train the *quality of care monitoring teams*, they could not innovatively plan to achieve this target. The prevailing traditional strategies on the planning and implementation of training human resources prevented a timely training of the entire quality supervision team.<sup>25</sup> Consequently, the limited supervision skills of the monitoring team did affect the quality of services in the program. Conventional implementation approaches also prevented the scope of the Indian DSF program to offset the structural bottlenecks (*e.g.* transportation issues) in service delivery system.<sup>2</sup>

### Demand-side financing reduces out-of-pocket spending

The existing evidence on the impact of DSF on out-of-pocket spending (OOPS) is limited. Yet, there is an indication that DSF does not substantially reduce OOPS, rather it can trigger more OOPS.<sup>2</sup>

#### Context-mechanism-outcome configuration

The contextual factors which influenced the odds of OOPS were geographic status, provider incentives and service delivery status (*i.e.* services and commodities) of health facilities. The mechanisms which enabled this interaction on OOPS were provider and consumer accountability. In India, rural mothers had incurred more OOPS (USD 80), compared to their urban counter parts (USD 48).<sup>2</sup> In practice, the distance barriers to care still existed in Turkey, Mexico, India and Honduras.<sup>2,20,25</sup> Services were not available at convenient locations in Brazil and Ecuador as well.<sup>21,34</sup> In India, despite having an opportunity for home-based skilled birth attendance, many women from forest villages preferred institutional delivery, as they did not want to miss the incentives conditional to an institutional delivery.<sup>2</sup> However, what they had received from incentives was much lesser than their actual OOPS on transportation. The non-availability of care at convenient locations demanded many beneficiaries to spend out-of-pocket on transportation in many countries. Hence, those who were poor had ended up with larger OOPS. In Bangladesh, the provider unaccountability reflected through informal payments and irrational provider prescriptions added to OOPS, while in India they induced fresh OOPS.<sup>2,35,36</sup> Lack of adequate provider incentives was reported to be the reason for this unaccountable provider behaviour under a DSF program.<sup>5</sup> Further, due to insufficient supplies at health facilities, Indian women had to spend out-of-pocket on medical consumables and drugs.<sup>2</sup> The major input factor configured with the contextual elements to reduce OOPS was the design feature of DSF programs. The scope of OOPS was more if incentives were not provided on all components of care such as transportation. A key implementation factor which affected the effectiveness on OOPS was the untimely payment of cash incentives to beneficiaries and lack of proper incentives to providers for the additional work under the DSF program.<sup>35,36</sup>

## Discussion

### Summary of findings

Review outcomes tested and validated the contextual elements and mechanisms which affected the possible consumer-side effects of DSF programs in LMICs. The results reiterated that the causal pathway of DSF's functioning and effectiveness was not linear. This means that there were multiple contextual determinants and mechanisms for a particular effect of DSF and these factors often could be inter-linked to each other. The consumer-side effects were also influenced by supply-side factors (*e.g.* service delivery). For instance, improving health seeking was a demand-side effect, but it was contextually affected by the beneficiaries' motivations (demand-side) and service delivery status

(supply-side). Among the possible effects of DSF programs, the review found that DSF was effective to improve health seeking behaviour, particularly when conditionality was tied to a particular health aspect. However, plausibly it could bring in adverse consumer behaviour as well. The magnitude of positive effect on health seeking behaviour was not equally translated into health status primarily due to limited quality of care and inappropriate package of services. DSF was not considerably effective to reduce OOPS and it could even induce additional OOPS. The status of the availability, access and quality of care was mixed and impacted many possible consumer-side effects of DSF in mixed-ways. DSF's effect on health seeking behaviour was contextually influenced by the background profile of the beneficiaries (*i.e.* demographic, geographic and economic). In addition, their socio-cultural beliefs, motivations, cognitive assumptions, length of exposure to program and level of health awareness were the other contextual factors. All these contextual factors determined the level of consumer accountability and consumer trust on public facilities (*i.e.* mechanisms) to trigger a positive health seeking behaviour. DSF's effect on health status was contextually influenced by the beneficiary's background characteristics, availability of services and provider incentives. The mechanisms which enabled this interaction were provider accountability and consumer trust on providers. The contextual factors which influenced the odds of OOPS were geographic status, provider incentives and service delivery status (*i.e.* services and commodities) of health facilities. The mechanisms which affected this contextual influence on OOPS were provider and consumer accountability. In addition, certain input factors such as the design of DSF program and the enforcement of conditionality influenced the effectiveness. Some implementation aspects such as timely disbursement of funds, effectiveness of knowledge dissemination and path dependency in implementation approaches also affected the effectiveness.

### Policy implications

As DSFs could considerably prove their effect on targeted preventive care outcomes, they certainly hold potential to augment the access to primary healthcare.<sup>5</sup> However, to make them suitable to improve health status, the design and implementation of DSF initiatives should adequately consider the potential contextual elements that may configure in their causal pathways of effects.

DSF initiatives need to ensure that they maintain an optimal provider and consumer accountability to reduce behavioural risks.<sup>29</sup> Further, the consumer's trust on providers needs to be enhanced to bring in an adequate level of service utilization.<sup>37</sup> If providing purchasing power to clients does not translate into healthcare utilization, it indicates that DSF could not establish optimal synergy between the demand-and supply-sides for various reasons. Improving the community mediation could be helpful in this regard especially as a watch dog to ensure the availability of effective care, upholding consumer rights and provider and client accountability.<sup>2</sup> It may be worth providing performance-based incentives to providers as many of them complained of their additional work without a corresponding level of incentives. These incentives may also help reducing irrational prescriptions and informal payments.<sup>2</sup> The demand-side contextual factors need to be considered appropriately in the design and implementation of DSF programs. It may be relevant to have differential approaches for various vulnerable groups (*e.g.* economic and geographical). In particular, these differential approaches are critical in targeting, dissemination of knowledge, geographical access and availability of care. Without these differential strategies, DSF programs may not be able to achieve their intended outcomes in a stipulated time-frame.<sup>5</sup> The *path dependency* in policy design and implementation could be an impediment for the effectiveness of these differential strategies. For instance, in Turkey, around half of the real poor were excluded from the program due to an inappropriate targeting strategy.<sup>20</sup> Further, irrespective of the background characteristics of

the beneficiaries, everybody needs to get care with an acceptable quality.<sup>37</sup> If a person's enhanced motivation on health seeking through incentives is not coupled with appropriate availability and access to quality care, it can create additional OOPS and monopoly of private sector.<sup>3</sup> As the current evidence on DSF program's causal mechanisms are limited, their evaluations need the application of mixed-methods design to substantiate how, why and under what circumstances they are useful. Qualitative studies may be useful to explore the process monitoring of health programs, and programs' interface with consumer and provider cognitive assumptions and behaviour patterns.

### Strengths and limitations of the review

This review included studies with various evaluation designs as it required a vast evidence on the contextual factors and the effect of incentives with their causal pathways. Review has wider policy implications as it combined both theoretical thinking and empirical evidence to underpin the causal pathways of DSF interventions. The consumer effects selected for exploring the causal pathways in this review can be limited and there can be many more potential outcomes. The existing literature focused more on the effects of DSF than their causal pathways and hence retrieving robust evidence on the latter was a challenge. The included studies predominantly provided quantitative data. Studies with *mixed-methods design* would have provided more validated data on casual mechanisms. Given the limited literature on the functioning of DSF initiatives, we relied more on expert opinion to develop the program theory. Therefore, there can be a possibility of subjectivity influencing the program theory. However, it can be also argued that these experts' opinions were based on their contextual experiences, hence may be more grounded to the reality. The recommendations drawn are of limited scope, and should be carefully adapted to local context.

### Conclusions

This realist review synthesized the most unknown aspect of the DSFs *i.e.* the causal pathways on their consumer effects. DSF holds potential to improve healthcare access and population health with a focus on equity. However, in order to enhance DSF's effectiveness, their design and implementation should carefully consider the potential contextual elements that may influence the causal pathways.

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