



## Effects of Targeted Subsidies Policy on Health Behavior in Iranian Households: A Qualitative Study

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### Abstract

**Background:** This study aimed to explore the effects of national targeted subsidies policy on health behavior of Iranian households.

**Methods:** In this qualitative study, data were collected between January 2012 and December 2013 through face-to-face interviews (23 experts in national and provincial levels of health system and 18 household heads) and through a comprehensive and purposive document analysis. The data was analyzed using a thematic analysis method (inductive-deductive) and assisted by Atlas-ti software.

**Results:** Rising health care costs, removing some food subsidies and the increase in price of most goods and services due to the implementation of economic policy of targeted subsidies have led to significant changes in the demand for health services, changes in the consumption trends of goods and services affecting health as well as changes in the health habits of households.

**Conclusion:** Targeted subsidies and the cash subsidy policy have some negative effects on population health behavior especially among poor people. Hence, maintaining or increasing the cash subsidy is not an efficient allocation of resources toward health care system. So, it is necessary to identify appropriate strategies and policies and apply interventions in order to moderate negative effects and enhance positive effects resulted from implementing this economic reform on population health behavior.

**Keywords:** Policy, Economic reform, Health system, Health behavior, Subsidies, Targeted subsidies, Iran

### Introduction

Targeted subsidies is one of the most important economic policies and a means of support for

governments in order to balance the different sectors of production, distribution, consumption,

foreign trade and support various economic classes and sectors in general (1). Targeting the subsidies is one of the most important issues of subsidy payment system in order to distribute income and wealth more appropriately among different individuals within the society (2). In a general sense, targeted subsidies can be defined as reduction or gradual elimination of subsidies for high-income families and increment of subsidies for low-income families. This economic policy reform has benefits such as reducing exclusion and inclusion errors and more equitable distribution of subsidy resources among the target groups (3, 4,5).

Various countries such as Poland, Bulgaria, Indonesia, China and Turkey have experienced targeted energy subsidies (6-8), and Algeria, Egypt, Peru, Tunisia and Yemen have experienced targeted food subsidies (6, 7, 9, 10). Some other countries, such as Tanzania, Jordan, Iran (11), India and Egypt (12, 13), some European countries (14), African countries (15) and some poor countries (8) have also experienced the implementation of economic reform in various economic and social sectors in their countries. In general, the most important methods of subsidizing the consumer sector include cash system, commodity system, price system, and coupon system. Direct cash subsidy is an aid paid in cash. This system is especially common in developing countries and countries in transition (16).

Implementation of targeted subsidies in a country according to its extensive inclusion and high social and economic impacts may affect all its various sectors (5). The economic reforms may influence health sector as well. Changes in the type of subsidy, the amount, distribution and inclusion may have significant effects on people's behavior and consequently on their health, and the health system in general (17).

This study aimed to explore the effects of targeted subsidies reform implementation on health-related behavior of population in Iran.

### ***Outline of the Implementation of Targeted Subsidies policy in Iran***

Iran is a lower middle-income country with a population of over 72 million people mostly

young (18). After the eight-year Iran-Iraq war, Iran initiated to develop five year medium term plans in order to increase economic growth and social and cultural development. The economic growth was increased as results of the first (1989-93) and second (1995-99) development plans, known as the period of construction and structural reforms. One notable feature of Iran economy over the past two decades has been a sudden increase in government intervention in economic affairs (19). During this time, targeted subsidies were considered as an economic plan by the country policy makers. However, in the post-war period, according to the advice of the World Bank this policy was used to run in certain economic and social sectors.

In the late 2000s, the targeted subsidies policy was initiated through changing the trend of subsidy payments throughout the country by the policy makers. In this regard, According to Article 95 of the Fourth Development Plan, the government was required to enforce the comprehensive plans for poverty alleviation and social justice to establish justice and social stability, reduce economic and social inequalities, decrease gaps between income deciles, distribute income equitably throughout the country as well as reduce poverty and empower the poor through efficient and targeted allocation of Social Security Organization resources and payable subsidies (20). According to this act and act 155 of the Fourth Plan, the multi-sectoral document "Poverty reduction and targeted subsidies" was developed by the Ministry of Welfare and Social Security (21). Bill of Targeted subsidies in the winter 2009 was introduced by the ninth government of the Islamic Republic of Iran and was passed by Parliament after a long road and exerting changes. The bill is part of the country's economic development plan (22). This major economic reform was enforced in 9th Dec 2010 (23). The plan of targeted subsidies is considered as the biggest project in Iran economic history. Through targeting subsidies, subsidy on products including energy resources such as gasoline, diesel, gas, oil, water and some foods such as bread, wheat, sugar, rice, cooking oil and milk was removed and these products were provided at new

price (price increment) for all individuals and households throughout the country (24). The government also has implemented direct cash subsidy system for all its citizens to adjust increased costs. To do so amount of money (450000 Iranian Rial per person/ about 42 US\$ in 2010) is paid monthly on household head account (25).

## Methods

### *Design and setting*

This qualitative study explores the effects of targeted subsidies great reform implementation on health-related behavior of population. To do so, viewpoints of key informants in health area at national and provincial levels of health system and the main stakeholders groups i.e. households about implementation of subsidies targeting policy were collected. The data were gathered between January 2012 and December 2013.

### *Sampling*

Purposive sampling was conducted among experts in health area (n = 23), including policy makers

and policy analysts among the highest levels of management agencies, researchers and academics. Among the households admitted to one of the major public hospitals in Tehran, 18 families (parents) wishing to participate in the interviews were purposefully selected. Given the consent to participate in the study and according to the revenue level of participants as well as the categories of households based on the definition of Iran's statistic center (low, middle and upper), the individuals were selected. There was an attempt to select at least three individuals of each level to participate in the study. The revenue level was specified by the questioning from the individuals. Data saturation was reached within this number of interviewees. Table 1 shows the Interviewees characteristics.

The selection of the participants using heterogeneous sampling resulted in a diverse range of participants with different experiences and perspectives. We also purposefully and comprehensively collected relevant documents of various types (news, articles, magazines, newspapers and online websites).

**Table 1:** Interviewees characteristics

<b>Experts in health area</b>	<b>Households</b>
Policymakers at national level (n=8), middle level agents of ministries of health, welfare and social security (n = 3), top managers of hospitals (n = 2), academics associated with research area and researchers in the health system (n=7), insurance organization (n=3)	Father head of household (n=14), mother head of household (n=4) Mean age 42 years (minimum 28, maximum 67), low level (n=6), middle-level (n=9) and upper-middle level(n=3) in the society Education (under diploma to master)

### *Data collection and analysis*

Semi-structured in depth interviews were conducted using a Guide Form for various groups under the study that was prepared by the main team of the study during different sessions. The study questions validity was determined through initial interviewing three experts and two household heads and required changes were exerted in terms of concept, sequence and number of questions. During the study, the in-depth interviews were conducted using probing questions. The interviews with the health experts were conducted

in their offices. The household heads were also interviewed in a quiet location of hospital lobby respectively to avoid any inconvenience in interview process. Three households' responses were noted down accurately and completely because of refusal to record sound. Notes were taken during the interviews. All selected experts participated in the study while among the households, two individuals (from female headed households) refused to participate because of having little information about the subject. Interviews lasted between 41 and 72 minutes.

The content analysis (inductive-deductive) was used in order to analyze the data. In the analysis, the documents and the transcribed interviews were read several times to identify themes and subthemes. During the analysis process, themes and subthemes were developed. Coding and concepts extraction was performed by two people of the team to increase the reliability of the study. We used Atlas-ti software for analyzing data.

### **Ethical notes**

We clearly explained study objectives to all interviewees in advance. To collect data from interviewees, informed consent of them was obtained before conducting the study. Anonymity was assured to all the interviewees.

## **Results**

The study findings is described in three themes and ten subthemes including demand for health services from medical centers, trend in consumption of goods and services affecting health and changes in health habits. The extracted themes and subthemes are related to the observed behavior of individuals. Table 2 shows list of changes in health-related behavior in household individuals. Although the implementation of this policy may have imperceptible effect on the households, it has not been included in the study because of not being in the scope of study objectives.

**Table 2:** List of changes in health-related behavior in household individuals

<b>Theme</b>	<b>Subtheme</b>
Demand for receiving healthcare services from health care centers	Demand for curative and preventive health services Actual demand (avoid indiscriminate visit to the doctor and the pharmacy) Out of pocket payment for receiving health services The trend of demand in the public and private health sector
Trend in consumption of goods and services affecting health	Reduce inclination towards Non-subsidized food consumption Incomplete and selective purchase of medicines Change in household food basket
Changes in health habits	Health culture (consumerism economic condition in the country) Change in activities affecting health Self-treatment and self-care

### **Demand for healthcare services**

Changes in the demand for health care services by individuals and households are an obvious consequence of the implementation of targeted subsidies policy. Many respondents believed that the demand for healthcare services has decreased since the implementation of policy. Some experts considered this issue because of ineffective treatment costs management in the targeting subsidies. Some participants stated that the manner of implementing targeted subsidies policy has led to that health has not been taken into account as a priority in their cost basket anymore and consequently the demand for healthcare services has been decreased. Similarly, many participants be-

lieved that the increment of household costs due to remove goods and services subsidy and insufficient cash subsidy allocation to households and low income households in many cases have resulted in reduction of visiting to clinical centers for clinical services in the early stages, as well as in the areas of public health and prevention and visiting to clinical centers just in case of emergency and acute care, particularly in deprived areas.

*"When the inputs of household are expensive, health is the first thing omitted. This means that they do not seek checkup and dental care. When they are sick, bear and just go to a doctor in case of emergency. As a result, the burden of disease will change and probably people get worse"* [National policy maker, N; 1].

"The price of everything has gone up though we get subsidy but it is extremely small compared to the increased costs, our income does not cover the costs... If there is an illness in my family we do not go to a doctor unless in case of acute illness" [Father of household, N; 12].

The analysis of the findings showed that although the demand for preventive health services has been reduced in the short term, the demand for health care services has increased due to exacerbating health problems in the long term.

"Demand for types of health services is based on the elasticity. Indeed, people health behavior has changed and while in short term, the demand for health care has been decreased, in long-term demand for curative services to treat complex and acute diseases has been increased" [Senior policy maker, N;3].

Changes in the demand in various healthcare sectors such as the public and private sectors, has been another effect of the implementation of targeted subsidies policy. The data from the study indicates that the overall demand for services in the public sector compared to the private sector, especially in relatively deprived areas, has been increased since the implementation of the economic reform. According to some experts' opinion, in the case of significant increase in prime cost of services in the public sector, the inclination towards the private sector due to high-quality services will be increased, especially in large cities.

"Currently, there is a huge demand for services in public sector, not because of the quality of services in the public sector but due to lower prices" [Senior policy officer, N;4].

Some experts believed that the implementation of targeted subsidies policy has created a positive change in the demand trend among the population, which in long term may promote proper culture in services demand and avoid unnecessary demand among the population.

Similarly, some experts stated that although increased prices may decrease double and unneeded demand, in long term the population cannot afford curative services and even necessary healthcare services due to lower income and lower purchase power and this can exacerbate the persistence of diseases.

### ***Trend in consumption of goods and services affecting health***

Some respondents believed that the targeted subsidies, lead the society from utility-based consumption to need based consumption and in long term can lead to modification of consumption patterns and make a modified society rather than a consumerist society and the health sector is not exempt from this trend. Some experts have considered it to somehow as management in goods and services consumption.

"This trend is one of the shadow effects (marginal or consequential) resulted from implementing the targeted subsidies which is not a function of supply and demand curve and changes, but it is related to change the consumer willingness or elasticity in order to change consumption management i.e. the shift in time of demand and supply based on consumer pattern"[health policy researcher, N; 2].

On the other hand, some other participants pointed to that food and drug subsidy removal and their increased prices cannot correct bad eating habits and related problems. Some participants believed that implementing this great economic policy has changed pharmaceuticals consumption significantly. Some has noted the positive effects while some other has pointed to negative ones.

"In general, medicines consumption has been slightly controlled... It seems that in the case of removing drug subsidy and increasing a pill price up to 10000 Iranian Rial/ (about 0.93US\$), nobody seeks it without reason but it is dangerous if this has impact on essential medicines". [Former senior health policy maker]

The targeted subsidies have had a great effect on food. In many participants' opinion, the consumption of foods affecting population health such as milk, yoghurt and cooking oil has been decreased. Many households participating in the study noted that increased prices of the goods because of their removing subsidy have been one of the reasons of consumption reduction of these foods.

"Before targeting subsidies, there were long queues to buy milk from the shops but now there is packaged milk in the shops with no queue and customer not so much" [Father of household, N:7].

"We used to cook food with liquid or solid cooking oil because it had been said that animal oil is not healthy, but



*after increasing cooking oil price, we have to use the former cooking oil (animal oil)*" [Mother of household, N:3].

### **Changes in health habits**

Many experts believed that in the current consumerism economic condition, paid cash subsidies to households may be spent on nonessential goods or filling gaps household expenditure and in such situation the consumption of essential goods will be definitely decreased which this can be significant in terms of endangering public health.

According to the expert's opinion and based on what noted by the households head, the population particularly in the middle class and lower levels of the society have attempted to save their health costs. The findings of the study showed that even in households in which a significant proportion of household income is from subsidies paid to family individuals, dominant consumerism culture has caused these people do not attempt to meet their own health needs.

*"I have 7 children; my husband is a construction worker... When my child gets a toothache, I try to reduce tooth with homemade ointment... When the pain becomes more severe, we ask the doctor to extract the tooth rather than repair. Despite our income has been increased but my husband thinks we should spend the money coming from subsidies on our other needs".* [Mother of household, N: 4].

Some participants acknowledged that Implementation of targeted subsidies has caused more people to be careful of their health and try to treat the disease in its early stages, although in many cases they are not able to do this. The opinions indicated that in the middle-class and upper-middle class in the society and among middle and high-educated persons, treatment of certain diseases at an early stage, before severe condition through visiting clinical centers has been more common, however, self-treatment has been more common among individuals with low education levels, especially the poor.

*"The extremely high rate of self-medication is one of the problems in our healthcare system and it can be said that this has been recently increased through targeting the subsidies"* [Senior health officer, N: 3].

Some experts believed that the problem of lack healthcare market entrance by the households has been a danger threatening our healthcare system, which is far more complicated than reducing demand. Self-treatment and using homemade traditional medicines are some activities done by some households to treat some diseases. Some participants acknowledged that in some provinces particularly those in deprived area, this phenomenon has been exacerbated through implementing the targeted subsidies economic policy.

*"When a member of my family gets sick, we try to treat him by homemade pharmaceuticals or what we learned from our ancestors. Previously we were supposed to do it this way, but currently we cannot even think of visiting doctor because of current expensive services"* [Father of household, N:6].

### **Discussion**

The ninth government in 2010 developed a comprehensive plan named "Economic development plan" based on awareness of fundamental economic problem in the country. This plan involves fundamental reform in seven areas including tax system, customs system, banking system, the framework of valuing of the national currency, productivity, distribution of goods and distribution and allocation of subsidy (16). To do so, removing subsidy of energy resources and some goods such as food as well as paying cash subsidy to the population were enforced as one of governmental intervention tools in order to advance economic policies including production and domestic consumption or export, and social policy such as the public welfare in general and protect the vulnerable groups in particular.

According to the principles of system thinking and connection of everything to everything else, it is obvious that adopting every policy outside the health system may influence this system and its components (26). Developing and implementing a reform or changing a policy is considerably complex; hence, predicting the behavior of the health care system components becomes difficult (27, 28). This consideration will help to adapt the policy interventions and limit unintended negative effects while promoting positive consequences (29).

The findings of the study showed that the implementation of targeted subsidies has effect on individuals' health behavior and health care system in general. It is, therefore, necessary that the social consequences of these policies on health and people health behaviors be taken into account by politicians and policy-makers. Paying cash subsidies in a society such as Iran which is under demand pressure not only has changed household cost mechanisms, but also reduce individuals' inclination towards non-subsidized food consumption, particularly in middle class and the poor in the society. In the case of elastic goods such as food, due to direct relation between price and consumption, increased price may decrease the consumption significantly (9). The evidence from other studies indicates that the increased price of food led to a significant reduction of food consumption, particularly in poor countries (7, 30,31). Some of these food including milk, vegetables and fruits have a significant effect on human health. So, applying required nutritional interventions such as allocation of subsidies (cashes) on this group of food and prevention of raising their prices has a significant effect on individuals' nutritional behavior (32-34). The consumption of this group of food particularly in children, women and youths plays an important role in protecting them against chronic diseases and some diseases such as osteoporosis (35, 36).

The results of experimental studies also suggested that food subsidy reform and lowering the price of healthy food along with increasing the price of those food harmful to the health have been considered as one of the most effective interventions to increase buyers' willingness to consume healthy food and improvements in some indicators of health status among disadvantaged people (31, 37-41).

Inappropriate management of costs and lack of attention to some factors such as the social context of the country may reduce the demand for health care and in long term and can create weak health culture and habits. Implementation of the economic reform has influenced the population health behavior and in long term, this situation may change the pattern and outbreaks of chronic

and non-communicable diseases and increase the health care costs.

Similarly, reviewing countries experiences showed that each of these countries has adopted specific method or various mixed methods for targeted subsidies based on their certain circumstances (42, 43); Therefore, policymakers should adopted a proper method for implementing this economic policy according to social, cultural and economic characteristics of the various localities and country (7, 44). In the current healthcare system in the country, lack of full coverage of insurance (45) and increased goods and services costs due to this policy have led to increased prime cost of services and increased services delivery in curative centers or increased rates of hotelling in such centers. For patients who are forced to go to these centers, this may have a significant effect on their out of pocket payments and in some cases may put households below poverty line (45, 46). It should be noted that the health system and related costs requires special attention to protect people against extra cost (42).

Governments generally have preferred price subsidies program rather than cash payment (11). The experts acknowledged that all developed systems have used adjustment and correction formula for subsidies rather than removal of subsidy on food and goods affecting health and all industrial powers have initiated subsidies engineering depending on their needs and economic conditions (9, 47). It is suggested that when developing and implementing a subsidy program, policy makers and managers should consider the balance between subsidy and other efforts, by taking the characteristics and specifications of the context into account and with price elasticity of demand in mind (48).

Similarly, it seems that the allocation of assigned revenue from targeted subsidies to the health and social security for people may be another way to reduce the negative impacts of this great policy on the health area in the country.

### ***Strengths of the study***

This study is the first study exploring the effects of the economic reform of targeting subsidies on health behavior in the country. Enjoyment of the

views and opinions of different groups of people led to a better understanding of the studied subject. The findings of the study can be considered as evidence regarding health behavior changes resulted from a major economic policy in a developing country

### *Limitation of the study*

The limitations of this qualitative study should be taken into account. The issue of generalization is the main concern in this study. However, the study goal was not to expand the analytic generalization to the statistical generalization. In addition, we considered research team bias in conducting study stages through using different strategies such as the documents analysis; interviewing and member check strategy to increase trustworthiness. In addition, we sent some transcripts to participants in order to increase the validity of findings.

It should be noted that although some described changes are entirely due to the policy of targeted subsidies, other factors such as the economic / economic sanctions, political, social and cultural factors could also affect people's health behavior and exacerbate their changes and the precise distinction between them was not so possible.

It seems that using quantitative, comparison analysis methods and comprehensive sampling of various social groups and classes can be used to help for accurately understanding the influence of targeted subsidies on different types of people's health behavior.

### **Conclusion**

Our findings show this economic policy cannot help poor households to expend more on their health needs. Therefore increasing the cash subsidy in other sections cannot be effective on health sector because people try to expend that on other important needs instead of improving health. Maintaining or increasing the cash subsidy amount is not an efficient allocation of resources toward health care system.

The results of the study imply that complex and multidimensional social issues such as health

should not be a subject to pure economics. So, targeting subsidies with the aim of increasing the economic efficiency of the system should be run along with considering a systemic viewpoint and all the dimensions, especially its effects on the country's health sector.

It is, therefore, necessary to identify government essential interventions and policies of population health improvement in order to reduce the risks and prevent undesired effects of targeting subsidies on the population health related behavior.

### **Ethical considerations**

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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