



Effect of Pradhan Mantri Ujjwala Yojana on Women's Health and Energy Access in India.

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KEYWORDS

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ABSTRACT:

Introduction: The Pradhan Mantri Ujjwala Yojana (PMUY) is one of the most significant projects of universal access to energy and even-handed development in India. This program was initiated in 2016 and its aim was to provide liquid petroleum gas (LPG) as clean cooking fuel to low-income women. The program is meant to substitute the use of the traditional biomass-based fuels which are commonly utilized in rural areas with LPG in an attempt to minimize respiratory diseases, alleviate the health hazards that are associated with indoor air pollution, and facilitate environmental sustainability. In India, the availability of LPG has long been exclusive in urban and wealthy households, and rural dwellers have been left to use coal, firewood and dung cakes, all of which are polluting fuels.

Objectives: In this paper, PMUY is given a critical analysis in the view of its objectives, ways of implementation and impact on the socio-economic status and health.

Methods: The BPL coverage of LPG has been used in PMUY to expand LPG coverage in rural regions.

Results. Among the essential findings of the research, there are better health, less indoor air pollution, environmental protection, and empowerment of women. The BPL coverage of LPG has been used in PMUY to expand LPG coverage in rural regions, which has significantly helped in the improvement in the health of women, reduced indoor air pollution, and reduced the burden on women caused by cooking. Access to clean cooking energy has enhanced the safety of women, time management and overall well-being.

Conclusions: It also examines problems with the implementation of the scheme, including the cost of refills, its accessibility, and its awareness level and discusses how the program can contribute to India meeting its goals of public health and sustainable development.

1. Introduction

The Pradhan Mantri Ujjwala Yojana that connects females of impoverished families to LPG is run by the Ministry of Petroleum and Natural gas. The programme was launched in Ballia, Uttar Pradesh on May 1, 2016. The initial strategy was to provide 50 million LPG connections to the low-income woman. Later on, It was aimed at targeting eight crore women to LPG by March 2020. This was however the case in September 2019 seven months ago. The Union Budget of 202122 has granted Extra 1 crore LPG connections under the PMUY programme. Migration of families that existed at this

stage is given. The choice of cooking fuel is increasingly coming out as a significant determinant of the population health especially in the developing world like India. In India, the cooking gas, which is also referred to as LPG, has limited access by the poor. The rural and semi-urban households remain reliant on the traditional biomass that comprises of firewood, cow dung, and agricultural products. The WHO estimates that in India alone there are 5 lakh deaths that are attributed to the non-renewable energy fuels consumption. The use of such fuels is a major cause of preventable mortality and morbidity caused by long-term exposure to smoke emission in the indoor air. Majority of these preventable deaths were as



a result of these chronic diseases like lung cancer, heart disease, stroke and chronic obstructive lung disease. These are the health consequences that are especially catastrophic to women considering that they are the primary actors in food preparation and are always the targets of exposed contaminated indoor environments. The high level of acute respiratory infection among little infants can also be attributed to indoor air pollution. It is claimed that the uncovered fire in the kitchen is much like smoking 400 cigarettes per hour. It is in this regard that rather than being an energy subsidy, clean cooking energy such as liquid petroleum gas (LPG) is considered as preventive health measure. The availability of the BPL houses, the gas connections of LPG will make sure that cooking gas is available everywhere in the country. This will make women to be more empowered, and guard their health and then will reduce the dullness and time consumed in preparing food. Thus, with the women health and clean energy provision in India, the current research paper examines the Pradhan Mantri Ujjwala Yojana.

Significance of introduction of LPG gas in the rural zones.

India is not an exception, since as any other developing country, it has pledged the intensity of the emission reduction to 33-35 per cent, the percentage of renewable energy up to forty percentage and the improvement of its vegetation and arborol cover, which will provide an additional carbon sink of 2.5-3 GT-CO₂e considering the terms of the so-called Nationally Determined Contributions (NDC) of the 2015 Paris Agreement (UNFCCC, 2018). It is time to adopt more feasible, cleaner alternatives to fight the most burning issues of the community in relation to health and to fight the demands of reducing the carbon. In the world, natural gas and the term liquefied petroleum gas (LPG) have been mentioned as a countermeasure to curb the emission of black carbon (IPCC, 2018).

The encouragement of the use of environmentally friendly cooking solution, such as LPG, would contribute to the realization of the goals in 5/17 SDGs (Sustainable Development Goals): SDG 3: Good health and well-being; SDG-Goal5), Gender equality; SDG-Goal 7) Affordable and clean energy; SDG-Goal 13) Climate action; SDG-Goal 15) Life on land [IPCC 2018]. LPG is an inescapable byproduct which are generated during extraction of natural gas and oil, as well as during

refining of crude oil. It occurs naturally. In the past, LPG was being burned or released at the sites, which wastage of fuel and release of carbon monoxide in the atmosphere. When compared to other substitutes like solid biomass fuels, it has been established that its usage is friendlier and cleaner to the environment and human beings because of the fact that it does not generate so much methane and black carbon. According to the research carried out in 2016, an approximate eight hundred and nineteen million individuals (almost sixty percent of the population in the country) in India use their daily cooking needs; coal, cow dung, and fuelwood, which are either biomass or a subset of biomass (mostly forests and forested areas). The large use of these fuels is harmful to health of the population due to the high proportions of linking with heart diseases and difficulties in breathing. Home air pollution (HAP) is as a result of imperfect combustion of fuels in inefficient stoves and other heating, cooking and lighting appliances. The pollutants that are known to destroy health like carbon monoxide and small particles have harmful impacts on the health of women and children since they are the ones who are exposed most to house air pollutants daily in the process of cooking food [IPCC,2007]. The two SDG 5 (gender equality) and SDG-Goal 3 (better health). are critical to the attainment of alleviating the negative experiences of high-protein diets (HAP).

These are the areas that improve the health and empowerment of women by consuming cleaner fuels like LPG and shortening the time spent by cooking and gathering fuel. Research has shown that in the ambient setting, the HAP causes the climate disaster in India by exposing between 22 and 52 per cent of PM_{2.5} (Intergovernmental Panel on Climate Change [IPCC], 2018). Burning of fuel wood releases any of the following (IPCC, 2007): Fine particulate matter, natural gas and CO (Incomplete combustion gas and other ozone-depleting gases are also emitted during combustion of fuel wood). The biggest provider of black carbon in South Asia is the cook stoves that kill the monsoon and hasten the melting of the Himalayan and Tibetan glaciers. The use of biomass-based cooking of 49.0 GtCO₂-eq (in 2004) in rural developing country areas was one of these areas (IPCC, 2007). This should be promoted as the cleaner one until renewable sources are introduced though LPG has been termed as a fossil fuel. This would reduce the 49.0 GtCO₂-eq of emission



to 0.70 GtCO₂-eq. This would immediately contribute to the attainment of the targets and NDC commitments of the lowered emissions in SGD 3 (Good health and well-being) and SGD 13 (Climate action).

In addition, the cutting of trees to produce fuel wood and fuel are a great cause of deforestation as well as endangering the health of the forest and the other woody regions in general. One estimate made across the world is that it is 30 percent of un-sustainable harvesting of wood fuel. In 2010/11, India burnt 216.4 million tonnes of fuel wood in a year (FSI, 2011). The LPG usage will be able to alleviate the pressure on the resources available in the surrounding area since it provides safeguards to the forest against the exploitation of the fuel wood and charcoal to ensure that the carbon fixation process takes place.

Health hazards

Such a monumental physical heaviness does not necessarily involve the lost opportunity at developmental activities. It is the long and hard employment conditions that are harmful to the health of the women. Men tend to move to urban areas to seek employment thus forcing the women to work in the long term to meet the domestic demands. Women face various health complications in old age and some of such complications are debilitating. Their health is in very bad conditions and destroys their living conditions. The genital, spinal, and musculoskeletal issues in these women are extremely high [Rawar and Kumar, 2022]. Vaginal and rectal prolapse - the protrusions of internal organs through the vaginal or anal orifice are more frequent in such women. They are usually aggravated by the fact that women who engage in physically challenging household chores in villages are more likely to encounter with health problems. The commonly experienced ones include disc prolapse in the lower back, neck, sciatica, or the compression of the so-called sciatic nerve in the lower back and down to the back of the thigh, back of the knee joints, and shoulder pain. Otherwise, this situation can result in disabilities. There are also few partially or totally disabled women who would be found growing older. Women were identified to be smacking chewable tobacco as a coping mechanism of their pain. They find it too baffling and expensive going to the city clinics where they undergo tests, and physiotherapy. They lack information regarding the health insurance programme of the government. They lack the voice and the ability to

break the red tape barrier. It is stated that, 40 percent of the rural poor in the world cook on traditional fuels and this does not auger well with the environment, society, economy and health. A CFO on LPG gas as a cooking source remains poor, as per the ACCESS survey of 2014-2015 [Yadav, 2020). Majority of the houses burn biomass, coal, dung and wood in their daily food. The most frequent wellness issues of women and children are still Tuberculosis and pulmonary respiratory disorders although solid fossil-based cooking could also pose a significant threat to human health. One has sufficient data to conclude that the use of clean fuels as opposed to the use of coal or wood burners in the rural areas should be used to reduce the air pollution to the WHO recommended standard. The state of West Bengal has 97 percent in conformity to the National Family Health Index Survey (World Health Organization [WHO], 2016). This is minimized to around 40% on usage. This malalignment is brought about by three conditions such as reduction of dealerships resulting to a lapse in distribution, rising up of cost of subsidies and insufficiency of knowledge. It appears that the health issues of these women are caused by the limited access to water, cooking fuel and medical services (World Health Organization [WHO], 2018). Nevertheless, the rural families have 21 percent of LPG connection as compared to 71 percent of the families in the urban areas as reported by the NSSO report on consumption of products and services by the households. The situation has been altered with the introduction of the Pradhan Mantri Ujjwala Yojana which has not benefited considering the large number of people. These interdisciplinary health researchers discovered the need to have interventions like access to clean cooking fuel as part of programs like PMUY that should seek not only to relieve physical labour load but also reduce the burden of air pollution at home.

Notable attributes of PMUY scheme.

The Government of India program is the Pradhan Mantri Ujjwala Yojana (PMUY) under which women who are above the Below Poverty Line (BPL)-identified households, who took part in the socio-economic and caste census (SECC-2011), are to receive free LPG connections without deposit. According to the Ministry of Petroleum and Natural Gas (2024), through the program, a security deposit of 1600 rupee is offered to obtain an LPG cylinder and regulator. Subsidy of LPG



(DBTL) enables the recipients to borrow a loan with no interest at Public Sector Oil Marketing Companies to offset the price of the hot plate and the first refill (Mall & Rani, 2020). The clean cooking, dignity of women, and good health are under the slogan of Swachh Indian, Behtar Jeevan - Mahila on ko Mila Samman that is encouraged by PMUY. The program was initially to cover 5 crore households, and then it was introduced to cover 8 crore beneficiaries, including backward classes, forest dwellers, SC/ST households, and PMAY (Gramin) beneficiaries, and other disadvantaged groups (PMUY Official Website, 2024).

Review of literature

The growth indicators of Pradhan mantra ujjwala yojana have been established (Pillai & Ammal, 2017) and (Swain and Mishra, 2019). The research of (Ahmad, Sharma, and Singh, 2018) has indicated that PMUY should affect the economic strength and social disadvantaged households. R Ranjan, S Singh (2020) researched the advantages and disadvantages of PMUY. Yadav, Y. (2020) has researched the predictors of woman empowerment under Pradhan mantri ujjwala yojana. Mall, R., & Rani, S. (2020). In their findings, the PMUY benefactors are not happy with the subsidy or the cost of LPG refill, and females are rather content with the ease of house chores. Yadav, Y. (2020) explored how PMUY affected socioeconomic change and empowerment of women in the rural sectors in India. Research conducted by World Health Organization (2016) and Smith et al. (2014) confirms that a transition to clean cooking such as LPG reduces health risks drastically, and solid fuels contribute to respiratory diseases in households largely.

2. Objectives

- Assess the performance of PMUY in order to target the desired beneficiaries with special focus on rural and socioeconomically marginalized women.
- Interrogate the role of PMUY in reducing household air pollution and health risks in women, and the empowerment of women and the enhancement of energy access.
- Identify the barriers and challenges in PMUY implementation that limit the use of LPG over time playing the role of limiting the resulting health benefits.

3. Methods

The Pradhan Mantri Ujjwala Yojana (PMUY) secondary data serves as the sole basis for this study. The information was gathered from published literature, official websites, government papers, and research articles. Relevant data was thoroughly examined and arranged from sources including policy documents and ministry publications. Using the information at hand, the study examines how PMUY affects women's empowerment. The conclusions are predicated on the validity and dependability of the secondary sources consulted.

4. Results

About the scheme PMUY

In May 2016, the Ministry of Petroleum and Natural Gas (MOPNG) launched the PMUY: Pradhan Mantri Ujjwala Yojana. The program was launched on May 1, 2016, in Ballia, Uttar Pradesh, by the Honourable Prime Minister of India, Shri. The aim of the program was to reduce dependency on traditional biomass fuels and improve the health of women, by supplying clean cooking fuel, mainly LPG, to the rural and disadvantaged households. Narendra Modi. The Union Government introduced a program known as Ujjwala Yojana Scheme under the slogan of Swachh Jeevan, Behtar Indhan. The PMUY initiative is aimed at providing five crore rural Indian households particularly those headed by women under the poverty threshold (BPL) with a decent home. Billed LPG connections by 2019 to promote a smoke free environment. In turn, addressing indoor air pollution and respiratory health risks associated with it.

The Ujjwala Yojana will enhance the adoption of a safer and cleaner alternative to solid fuels by use of LPG, as well as address the health challenges, deforestation and air pollution.

The Ministry of Petroleum and Natural Gas has to adopt the "Ujjwala Scheme. Along with interest-free loan that can be used to purchase gas burner and fill up the cylinder, the program also gives financial relief of rs. 1,600 per connection.

The administration expenses of the connection of the LPG will be paid by the government. The Ujjwala initiative, as was put by the finance minister, will cover one crore or more people. The plan will be expanded to 100 districts in the next three years aiming at supplying



municipal gas. Through the "LPG" initiative, about 8 crore families are already beneficiaries, and people have already noticed the positive effects of change in rural women, as they are now able to cook better and perhaps change their health in the long term.

Goals of Pradhan Mantri Ujjwala Yojana.

This initiative of the Prime Minister was meant to enable the economically disadvantaged women to have access to clean and safe cooking fuel. The continued use of the traditional and polluting cooking fuels has a dire effect on the health of the people particularly women and children. The objectives are the following:

- To minimise health risks that are caused by use of dirty and polluting cooking fuels.
- To empower women and protect their health.
- To make sure that the purity of the environment is not undermined by the massive consumption of filthy cooking fuel.
- To control indoor pollution due to the use of fossil fuel that results in respiratory disorders.



“The Procedures”:

- BPL ladies older than eighteen years and who do not have a LPG affiliation at the time can get a one through the regional LPG distributor.
- At the time of application, one will require basic information like the address, bank account details and Aadhaar or any other identification data.
- SECC-2011 database is a database which is used by LPG authorities in order to determine the eligibility of the applicant. The beneficiary information is verified and entered into the system of the Oil Marketing Companies (OMCs).
- OMCs ensure that the same is verified and de-duplicated before issuing LPG connection.
- The connection charges and the households that are eligible are subsidized freely by the government and the LPG connection is given out without any fees. The repayments with the LPG subsidy being relieved

when the recipients opt and buy the stove and charge it first in instalments which are without interest.

- The funds to pay the initial refill, or even purchase of the stove, can be also assumed by state governments, non-governmental organizations or even by the individual businesses.
- Due to the research-based nature of the study, quantitative research approach is the most appropriate methodology.

“ELIGIBILITY CRITERIA”:

The benefits of the Pradhan Mantri Ujjwala Yojana are provided to the targeted adult women aged 18 years and above and have their households that are economically and socially disadvantaged. All Scheduled Castes and Scheduled Tribes households, rural housing scheme population, food security scheme population, and community such as forest, tea and former tea garden workers, and the population of the islands and riverine areas are all eligible. To further claim eligibility, poor households are identified by using the Socio-Economic and Caste Census (SECC-2011) database. They also do not permit multiple connections of LPG to any household so as to duplicate the program.

Source: <https://www.pmu.gov.in/>

Records were required to receive an LPG connection under PMUY:

- Under Pradhan Mantri Ujjwala Yojana, a basic identification and banking information would be needed to enable the applicants to have an LPG connection. These are Know Your Customer (KYC) data, self-declaration (when it comes to applicants who are migrants) or a ration card issued by the respective State Government, and another document, which will specify the household structure. The app will need the Aadhaar information of the beneficiary and any other adult member of the family required to be registered in the given household paper. Proof of address is required; Aadhaar card can be used as an address and identity proof when one wants to have an LPG connection installed at the address given in Aadhaar.

“PMUY”: - 2.0’ a phase II expansion

- The Ujjwala 2.0 will make LPG connections available to a greater number of households. This especially applies to the poor and rural population.
- The programme will cover households which continue to use old-fashioned fuels as their cooking fuels which



could prove very dangerous to the environment and health of people.

- The Ujjwala 2.0 offers financial assistance to deserving beneficiaries to get connected to a LPG, gas cooker, and gas cylinder.
- The women whose families have below poverty line (BPL) incomes are the ones who get the privilege in the programme.
- Ujjwala 2.0 is targeted towards the elimination of indoor air pollution in a bid to enhance health and wellbeing of the households.
- The plan is also productive to the environment. It lowers the carbon emission and deforestation as a result of the conventional cooking system.
- Ujjwala 2.0 will target getting to our more remote and remote-to-reach locations with clean cooking fuel.
- The programme entails provision of financial aid to eligible beneficiaries. It includes gas cooker, the LPG connection and their first refill.
- Besides, the sites enable advertisement and marketing of products and services of various businesses.

The benefits of Pradhan Mantri Ujjwala Yojana.

The Pradhan Mantri Ujjwala Yojana offers financial assistance in the shape of below poverty line (BPL) families to allow them to have LPG to cook. The initial price of the support of installing LPG connection; the security deposit of the cylinder, pressure regulator, safety hose, and the charges required in terms of inspection and installations are all incorporated in the initial cost of the support. The beneficiary selects the size of the cylinder that affects the level of the assistance the person receives. Instead of connection assistance, Oil Marketing Companies (OMCs) have an adoption scheme in low-income households where beneficiaries are given the facility of purchasing a cooking burner and the initial LPG refill on instalment interest-free basis to accompany the connection assistance. The administrative expenses are incurred in the supply of the LPG connection by the government and decreases the upfront costs of the beneficiaries. The plan will enable the flexibility of choosing the size of the cylinders to be used according to the local needs and conditions of the houses; this might be normal or smaller cylinders. Geographically problematic and priority areas such as the hilly states and Northeastern parts were given special concern as this area had long been characterized by a low supply of clean cooking fuel. Himachal Pradesh, Uttarakhand, Sikkim,

Assam and other states within the North-Eastern region of India have improved the health outcomes and availability of energy within the houses by alleviating the conventional constraints to the utilization of LPG.

Budget and financial plan:

Pradhan Mantri Ujjwala Yojana is a project based in India that is directly sponsored by the Ministry of Petroleum and Natural Gas. This program was to be implemented on an allocation of 2000 crore in 2016-17 fiscal year and the move is targeted at providing LPG connection to more than 1.5 crore families below the poverty line. The program was approximated to have cost over 8000 crore that would be paid in a span of three years. The subsidy also got a share in savings with the Give-It-Up subsidy program in which the higher-income users had agreed to forgo their subsidies. The target of the program to women is supported by the provision of financial support of 1600 per connectivity that is given to the qualified households under the name of the adult female household member. The beneficiaries can also have an opportunity to select instalment-based payment plan to the related equipment and refills to eliminate the first financial burden.

Scheme implementation:

- The women of the homes under poverty line (BPL) would be able to go to the nearest LPG distributor to request an LPG connection.
- The application requires basic information regarding Aadhaar, ration card, bank details and KYC. The eligibility is confirmed using SECC-2011 database.
- The connection fees are billed by the government therefore a free LPG connection is given on the approval.
- One method through which the cooking stove and initial refill can be purchased is through the easy installments payments by Oil Marketing Companies (OMCs).
- there are also local enrollment and distribution camps of OMCs in order to produce a broader coverage. The suitable cylinder size based on the requirement of the beneficiaries can be selected and the program is executed by all forms of LPG distributorships.

5. Discussion

Impact of pmuy women and their Empowerment and Health Outcomes.

Pradhan Mantri Ujjwala Yojana (PMUY) was an energy intervention program whose objective was to encourage



rural women to use clean cooking fuel (LPG) as a measure to curb the social health problems. The program speaks to the close relationship between well-being of households, health of women and energy poverty, specifically rural areas and low income areas. Women have also been able to alter their consumption of biomass fuels to LPG with the availability of PMUY that caused a decrease in the air pollution (HAP) in the household. The outcome has been the time saved on the monotonous activities linked to food preparation and collection of fuel, improved breathing and reduced incidences of lung diseases and eye sensitivity. The free time has enabled the women to be empowered both socially and economically because they have time to take care of the children, education and other income generating tasks. The community-based programs like LPG Panchayats and Ujjwala Didi programs have played their part by enhancing the behavioural change, the safe and regular usage of LPG, and understanding the clean cooking practices. Such peer-based programs have enabled women at the ground level and have improved their agency and self-esteem.

LPG and health cover among the citizens.

To a large extent, LPG penetration has rocketed throughout India due to PMUY especially in under-serviced and rural communities. Since the LPG connections are spreading rapidly, combustions of hazardous cooking fuels have significantly decreased, which improves the quality of the indoor air. The plan can be relatively applicable in terms of preventive health because indoor air pollution is a serious risk factor of respiratory diseases, chronic obstructive pulmonary disease, TB, and other respiratory diseases of the lungs.

Environmental, economic and social benefits:

Regarding economy, PMUY has minimized the tediousness and time taken in collecting fuel that disproportionately impacts young ladies and women. Excessive use of biomass has resulted in deforestation, emission of black carbon, and environmental degradation which has been mitigated as a result of using LPG. The availability of clean energy within the society has empowered women, made them safer and dignified and enabled them to make decisions at their own houses.

Weaknesses and issues:

Although PMUY has been a success, it has a number of issues that can restrain its health reward benefits in the long-term. The cost of the LPG refills continues to be a

significant bottleneck and it causes occasional use or as a result of the persistence on the use of the traditional type of fuel. The number of refills is reducing among the recipients based on the studies and audit reports, which brings up the issue of the ongoing costs and the manner in which the subsidies are being availed. Other challenges as opposed to continued use of traditional fuels other than the LPG include ignorance, safety of the first-time users and availability of refill in remote places. These considerations weaken the possibility of the program to eliminate air pollutant in the homesteads and health related problems.

Recommendation/ Policy implications:

In order to improve the health outcomes of PMUY, one should pay more attention to:

- Sustainability in the past and transfers of subsidies in time.
- Behaviour change communication that is based upon using just LPG only.
- Periodic review of pattern of refills in order to ascertain consumption.
- Safety education and awareness community based.
- Assessments of results with references to the quality of the indoor air and the health of women.

Conclusion:

The Pradhan Mantri Ujjwala Yojana is one of the key areas of governmental and gender-oriented energy initiative in India. Because of PMUY, more women are empowered, a decrease in indoor air pollution and improvement in respiratory health by having access to clean cooking fuel. The increase can be immensely contributed by enhancing the process of implementation and encouraging its long-term usage. The significance of scheme in increasing the health and environment of women and energy equity, irrespective of the infrastructure and affordability.

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