The Social Science Review A Multidisciplinary Journal. March-April, 2026. Vol. 4. Issue 2. 658-665

Published by: Pather Dabi Educational Trust, (Regn No: IV-1402-00064/2023), Under Govt. of West Bengal, India

The Social Science Review
A Multidisciplinary Journal
ISSN: 2584-0789
(Open-Access, Peer-Reviewed, Refereed, Bi-Monthly, International e-Journal)
Homepage: www.tssreview.in

ASSESSING THE IMPACT OF JJM ON THE VILLAGERS OF CHORMA VILLAGE IN BILASPUR DISTRICT OF CHHATTISGARH, INDIA

Pushpraj Singh [1], Rohit Raja [2], Aseena Ekka [3] & Shubham Verma [4]

RESEARCH ARTICLE

Author Details:
[1] Professor, Department of Rural Technology and Social Development, GGV, Bilaspur (CG), India; [2] Associate Professor, Department of Information Technology, GGV, Bilaspur (CG), India; [3 & 4] Field investigator, ICSSR-JJM Project, GGV, Bilaspur (C.G.), India

Corresponding Author:
Dr. Pushpraj Singh

DOI:
https://doi.org/10.70096/tssr.260402101

Abstract
By 2025, India's Jal Jeevan Mission had provided functional tap water connections to over 156.8 million rural households, covering approximately 81 percent of the rural population. Chhattisgarh state has approximately 5.012 million rural households, of which about 2.79 million (55.68%) have tap water connections. The state has achieved 55 percent coverage under the Jal Jeevan Mission (JJM). This study was conducted to assess the impact of the JJM in Chorma village of Takhatpur block in Bilaspur district. The study indicates that the expansion of functional household tap connections has significantly reduced the burden of fetching water for women and children, but many households still receive an insufficient quantity of water. Overall, this study emphasizes the need to focus on infrastructure maintenance, promoting community participation, and ensuring equitable and reliable water supply to fully realize the transformative vision of the JJM.

Keywords: *Jal Jeevan Mission (JJM), Functional Household Tap Connections (FHTCs), Swachh Bharat Mission (SBM), Village Water and Sanitation Committees (VWSCs)*

Introduction

Access to safe drinking water has long been a major challenge in rural India (NIRDPR, 2023). In 2019, the Government of India launched the Jal Jeevan Mission (JJM) with the primary objective of providing a functional household tap connection (FHTC) to every rural household. This mission emphasizes not only the provision of tap connections but also maintaining water quality, ensuring continuous supply, proper operation and maintenance, and robust community participation (Ministry of Jal Shakti, 2019). While some states and districts have reported good progress under the JJM, many areas still face challenges such as intermittent water supply, infrastructure delays, power shortages for pumping, and weaknesses in long-term operation and maintenance (Hope & Mukherjee, 2023; Paliath, 2024). By 2025, India's JJM has provided functional tap water connections to over 156.8 million rural households, covering approximately 81percent of the rural population. The JJM is now prioritizing inclusive governance with sustainable infrastructure management, water quality monitoring, and active community participation. Chhattisgarh, a resource-rich region in central India, is known for its dense forests, abundant mineral reserves (coal, iron ore, bauxite), diverse tribal cultures, and ancient temples. The state has approximately 50.12 lakh rural households, of which about 27.90 lakh (55.68 %) have access to piped water. Chhattisgarh has achieved 55 percent coverage under the JJM. Piped water is available in a total of 43,974 schools (86.78 %), 41,719 Anganwadi centers (83.39 %), and 11,658 Gram Panchayats in Chhattisgarh. This study was conducted to assess the impact of the JJM in Chorma village of Takhatpur block in Bilaspur district. The objectives of this study are (i) assess the impact of the Jal Jeevan Mission on the daily activities and socio-economic engagement of rural women in the village, and (ii) assess the impact of the Jal Jeevan Mission on the health of rural households in the village.

Method: This study employed a comprehensive mixed-methods approach to evaluate the impact and implementation status of the JJM in Chorma village. Data were collected through structured interviews with 100 randomly selected households. The survey questionnaire was designed to gather detailed information on demographic characteristics, socioeconomic status, water source utilization, access to tap connections, frequency and duration of water supply, storage and treatment methods, perceptions

of water quality, health outcomes, and community participation. Respondents were asked to report all water sources used for various household needs and incidence of waterborne diseases before and after the implementation of JJM.

Result and Discussion

Water-Source Profile of Chorma village: A survey of water sources in the households of Chorma village reveals that for general domestic use, handpumps (76 %), ponds (71 %), and JJM taps (62 %) are the primary sources, while tube wells (29 %), rivers (10 %), and springs (5 %) are also utilized by the respondents. For drinking water, households primarily rely on handpumps (76 %), followed by JJM taps (62 %) and tube wells (29 %). For bathing, ponds (67 %) are the most frequently used source, along with JJM taps (52 %), handpumps (43 %), and tube wells (29 %). For cooking, the sources are handpumps (76 %), JJM taps (62 %), and tube wells (29 %). For washing clothes, ponds (52 %) and JJM taps (52 %) are equally prominent; tube wells (29%), handpumps (38 %), and rivers (10 %) also contribute. House cleaning primarily depends on JJM taps (62%), with handpumps (38 %) and tube wells (29 %) serving as secondary sources.

Tap connection and infrastructure under Jal Jeevan Mission: In Chorma, JJM connections were provided to 28 percent of households in 2023, and the majority, 67 percent, received connections in 2024. Despite this, only 48 % reported receiving a water supply by 2024-25, while 52 percent had taps installed but no water supply. All taps were installed at a height of 3 feet. Most (86 %) had a cement platform built under the tap, while 14 percent did not. Tank height and water pressure remain a problem; 71 percent reported low pressure, and only 29 percent found it adequate. Regarding maintenance, 43 percent reported repairs being carried out by the panchayat, 14 percent said they did the repairs themselves, while 38 percent had not yet needed any repairs. The panchayat is not collecting any water bills from the villagers.

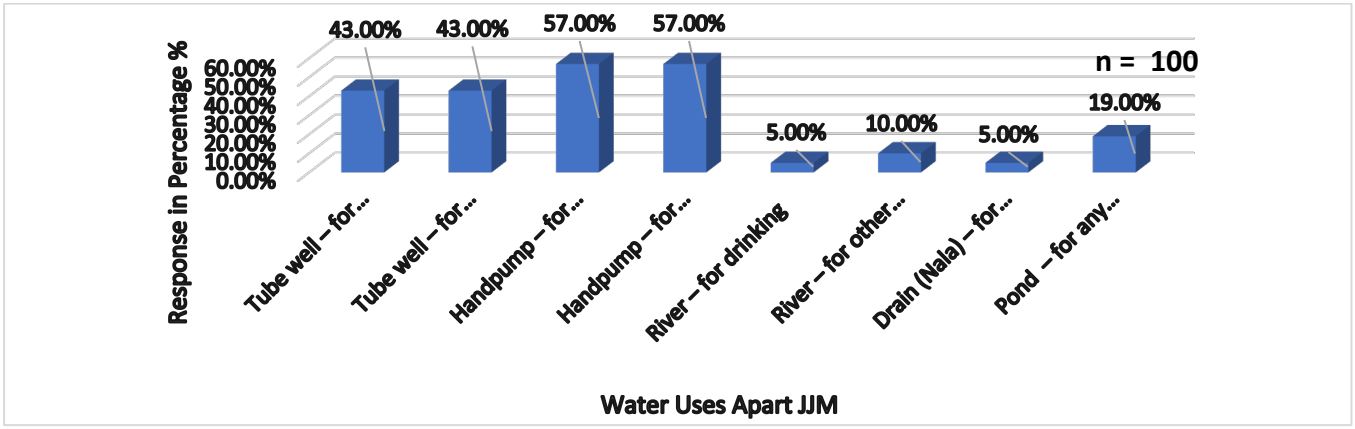
Water Quantity and Supply Methods: Under the JJM, only 29 percent of households reported being satisfied with the quantity of water supplied, while 71 percent expressed dissatisfaction. This clearly indicates that despite having connections, the supply is insufficient to meet the daily needs of most families. A majority of respondents (76 %) reported receiving water from an overhead tank, while 24 percent stated that they had not yet received any supply.

Community Participation and Socio-Economic Impact of JJM

The findings from Chorma village highlight that community participation and socio-economic impacts of the JJM remain very limited. Attendance in Gram Sabha meetings was extremely low, with only 10 percent of households reporting presence. Similarly, just 10 percent acknowledged community meetings on water and sanitation, and only 5 percent actively participated. This reflects a lack of community engagement in water governance. With regard to employment, no households reported receiving wages during pipeline construction. Women also did not report benefits in daily routines or employment generation linked to JJM. Only 14 percent expected possible employment opportunities in the future, while 86 percent did not. The impact on household income also appears marginal. Just 10 percent of households noted an increase in income, all describing it as "moderate." About 20 percent of women said they gained more time for income-generating activities, mostly in agriculture (75 %) and some in sewing (25 %). Similarly, 14 percent reported modest savings due to reduced expenditure on waterborne diseases. At the overall family income level, only 5 percent households reported an increase, with one household citing a gain of ₹1,000 per month, while the vast majority (95 %) saw no improvement.

In terms of education, 29 percent of households observed positive changes in their children's daily routine after JJM. Within this group, 5 percent reported children had more time for school, while 24 percent felt there was some improvement in education quality. Similarly, 29 percent said they could now dedicate more time to their children's education, rating this benefit as moderate. Before JJM, 19 percent households reported that children occasionally missed or arrived late to school due to water-fetching responsibilities, a problem that has since reduced. Overall, 29 percent households believed their children's education improved moderately after JJM, though 71 percent did not notice any such change.

Figure – 1 : Distribution of Respondents as per water uses apart from JJM



The data shows in Figure 1 reveled that despite the JJM, respondents still rely on traditional water sources for their additional needs. A total of 57 percent of people use handpumps for drinking and other daily activities. Tubewells are used by 48 percent of families for drinking and other purposes. Ponds are used by 19 percent of families for various purposes, while 5 percent use rivers for drinking and 10 percent for other daily needs. A small percentage (5 %) even reported using drain water for drinking. These findings indicate that while the JJM has improved access to water, traditional sources still play a significant role in meeting daily water requirements.

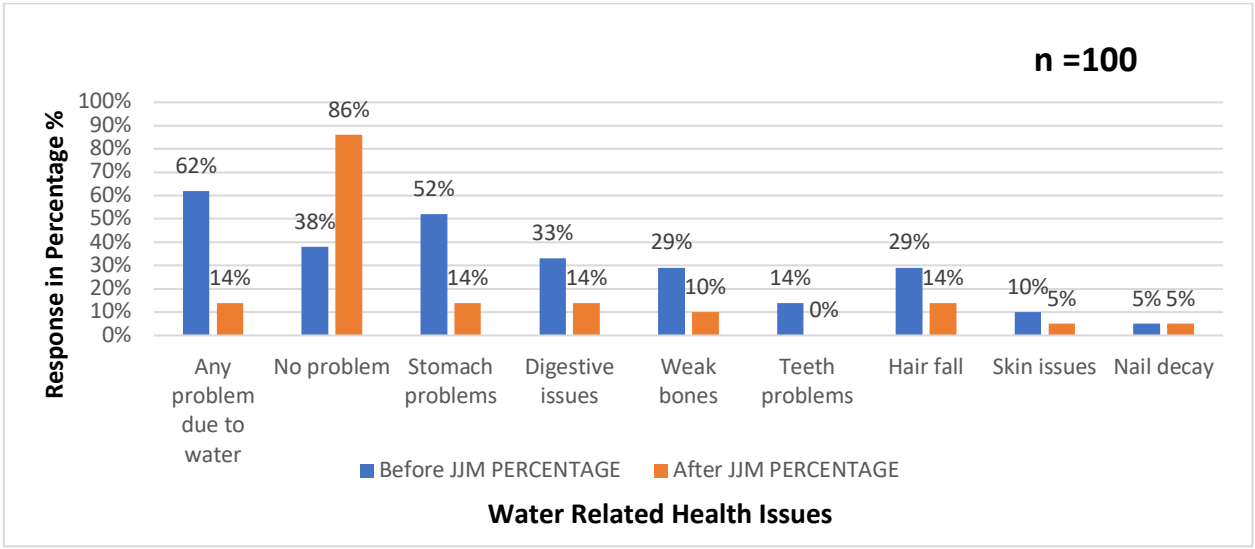


Figure – 2 : Distribution of respondents according to water related health issues

In Chorma village, health problems have significantly decreased since the implementation of the JJM as data indicate in figure 2. Before JJM, 62 percent of households experienced problems due to contaminated water, which has now reduced to 14 percent. The number of people without any health problems has increased from 38 percent to 86 percent. Stomach problems decreased from 52 percent to 14 percent, and digestive problems decreased from 33 percent to 14 percent. Other ailments such as bone weakness (29 % to 10 %), hair loss (29 % to 14 %), and skin problems (10 % to 5 %) also decreased, while dental problems were completely eliminated (14 % to 0 %). Nail problems remained unchanged at 5 percent. These results highlight the positive impact of JJM on public health.

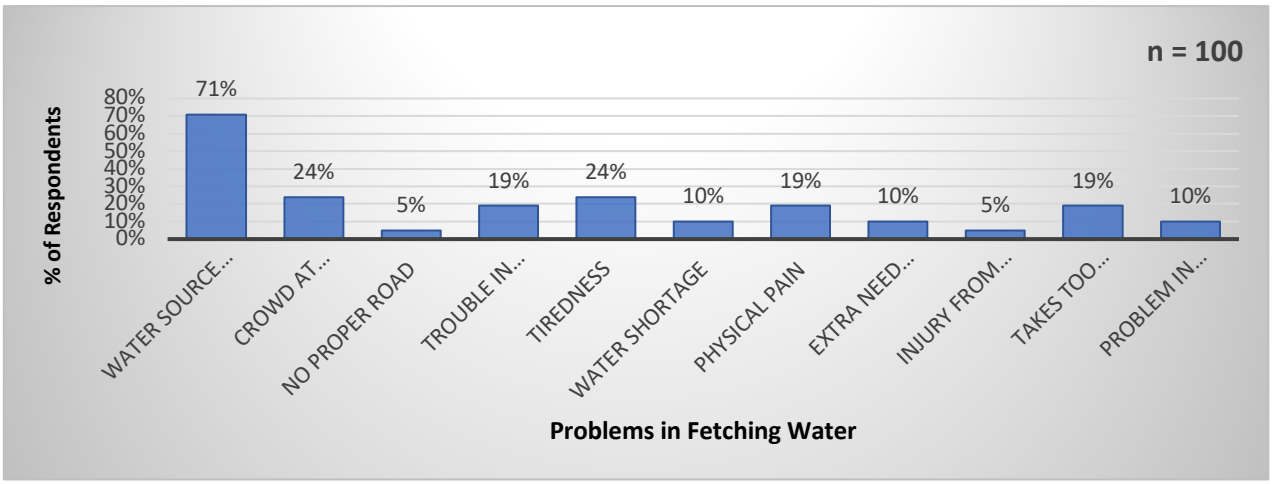


Figure – 3 : Distribution of Respondents according to problems related fetching water

An analysis of the problems encountered in fetching water as per data in figure 3, reveals that distance remains the biggest challenge, with 71 percent of households reporting that the water source is too far away. Crowding at the source and the resulting fatigue were reported by 24 percent of respondents, while 19 percent mentioned difficulties such as problems during the summer months, physical pain, and the excessive time required. Water scarcity, problems during the rainy season, and increased needs when guests arrive were each reported by 10 percent of respondents. Lack of paved roads (5 %) and injuries from falls (5 %)

were also reported by some households. These findings indicate that access to water has improved under the JJM and that the aforementioned problems have decreased.

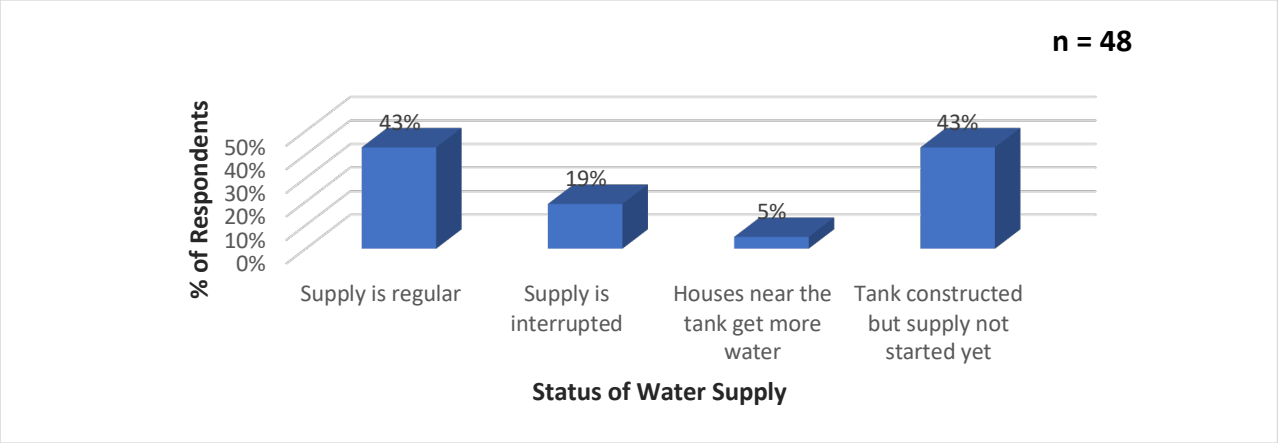
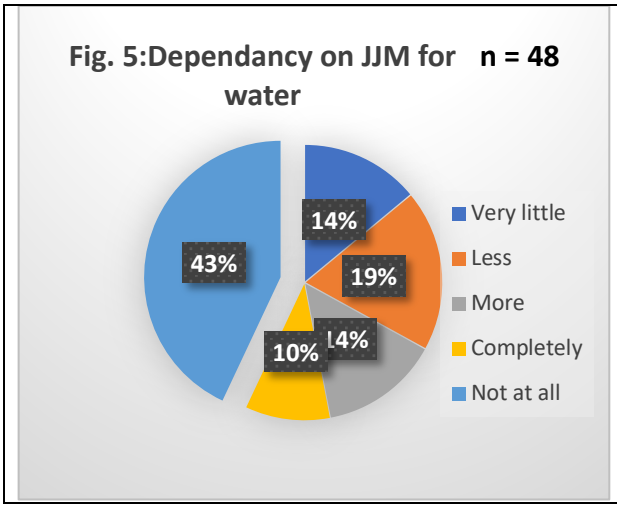


Figure – 4 : Distribution of respondents according to status of water supply

An analysis of water supply status through taps under the JJM (Figure 4) reveals the following, a total of 43 percent of respondents reported regular supply, while an equal percentage (43 %) stated that tanks have been constructed but water supply has not yet begun. Approximately 19 percent of people face interruptions in water availability, and households located closer to the tanks receive more water.



The results regarding dependence on the daily use of water (Figure 5) show that household dependence on the JJM is not uniform. While 10 percent reported being completely dependent and 14percent mostly dependent, 43 percent stated that they are not at all dependent on JJM. A total of 14 percent of respondents reported "very little" dependence and 19 percent reported "little" dependence on the Jal Jeevan Mission. This indicates that while JJM has improved access to piped water, many households still rely on other or traditional sources to meet their daily water needs.

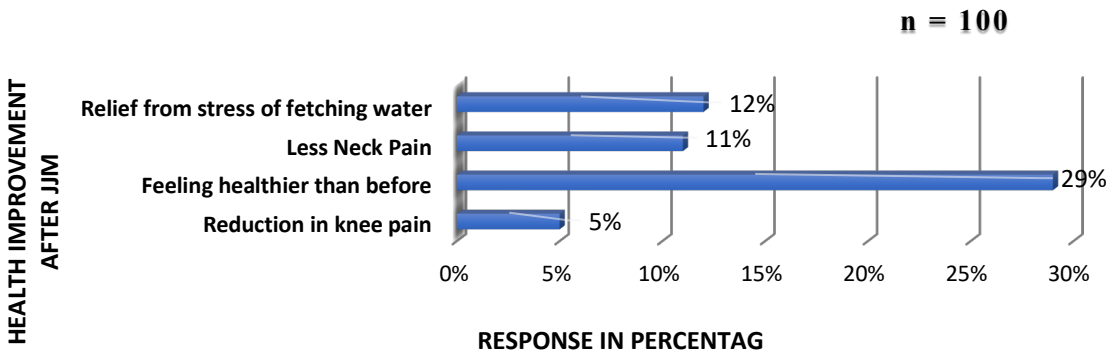


Figure – 6 : Distribution of respondents on the basis of health improvement after JJM

As evident from the above (figure 8), approximately 29 percent of respondents reported feeling healthier after the implementation of the JJM, while 12 percent experienced relief from the stress of fetching water. Specific physical benefits included reduced neck pain (11 percent) and reduced knee pain (5 %). These results indicate that easier access to water has not only improved overall health but also alleviated the physical strain associated with water collection.

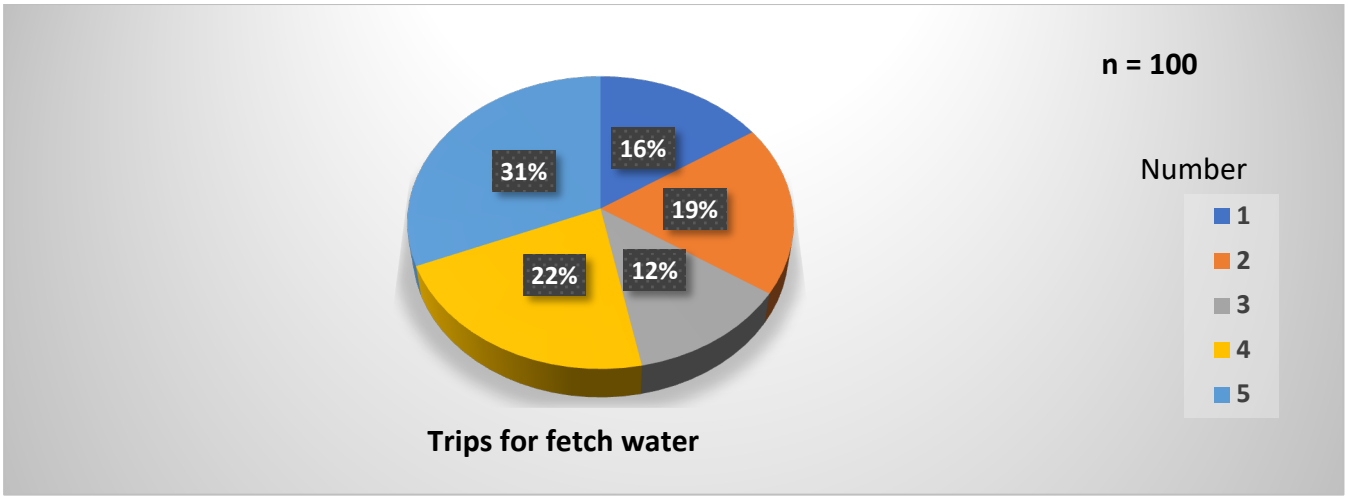


Figure –7 : Distribution of respondents on the basis of trips for fetch water.

The data shows in figure 7 indicate that 31 percent of families fetch water five times a day, while 22 percent do so four times and 12 percent three times daily. These results indicate that most families manage with fetching water three to five times a day, reflecting a continued reliance on available sources and a lack of sufficient water storage capacity, despite the implementation of the JJM. Responses to the question about the time spent collecting water reveal that 43 percent of families spend 1-2 hours each day fetching water, while an equal percentage (43 %) spend 2-3 hours. These findings indicate that although most families manage with 1-3 hours, a significant segment still faces the burden of spending considerably more time, highlighting persistent inequalities and varying levels of dependence on water sources even after the implementation of the JJM.

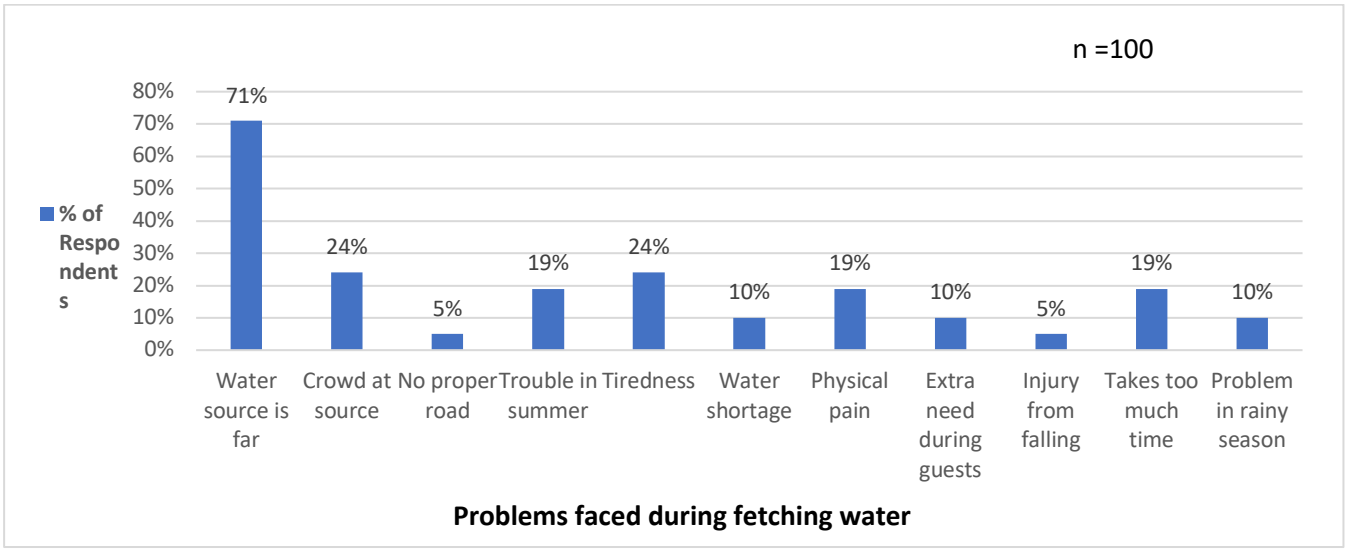


Figure – 8 : Distribution of respondents according to problems faced in fetching water.

Before the JJM, households faced numerous challenges in accessing water. The most common problem was the long distance to the water source, reported by 71 percent of respondents. Other common problems included crowding at the source (24 %), fatigue (24 %), difficulties during the summer months (19 %), physical pain (19 %), the excessive time required to collect water (19 %), water scarcity (10 %), increased need when guests arrived (10 %), difficulties during the rainy season (10 %), lack of proper roads (5 %), and injuries from falls (5 %). These findings highlight the importance of the Jal Jeevan Mission in alleviating these water-related problems.

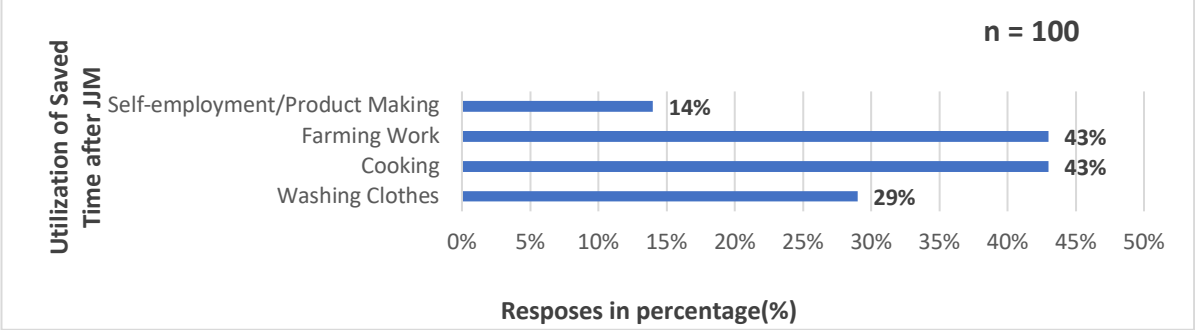


Figure – 9 : Distribution of respondents according to utilization of saved time after JJM

Among the 35% of households that reported saving time due to the JJM, the saved time is primarily used for cooking (43 %) and agricultural activities (43 %). Additionally, 29 percent of people use the extra time for washing clothes, while 14 percent engage in self-employment or income-generating activities. These findings indicate that the saved time is mostly utilized for essential household chores and livelihood-related activities.

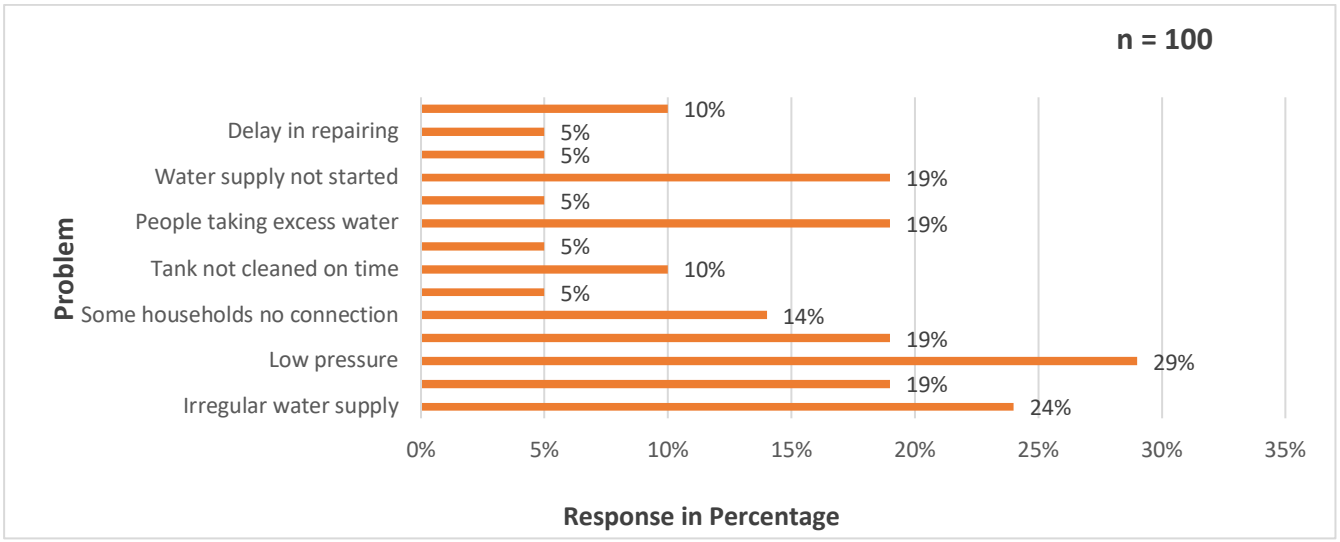


Figure – 10 : Distribution of respondents according to problems expressed by villagers regarding JJM

Data reveals as per figure that households continue to face several challenges even after the implementation of the JJM. The most commonly reported problems were low water pressure (29 %) and irregular water supply (24 %), both of which directly impact daily water availability. Approximately 19 percent of respondents reported issues such as pipeline leaks, no fixed supply schedule, excessive water usage by some households, and in some cases, no water supply at all. Other problems included delayed repairs (5 %), dirty or foul-smelling water (5 %), brackish or undrinkable water (5 %), and infrequent cleaning of water tanks (10 %). Furthermore, 14 percent of households reported having no connection at all, and 5 percent reported that their connection was located outside their home.

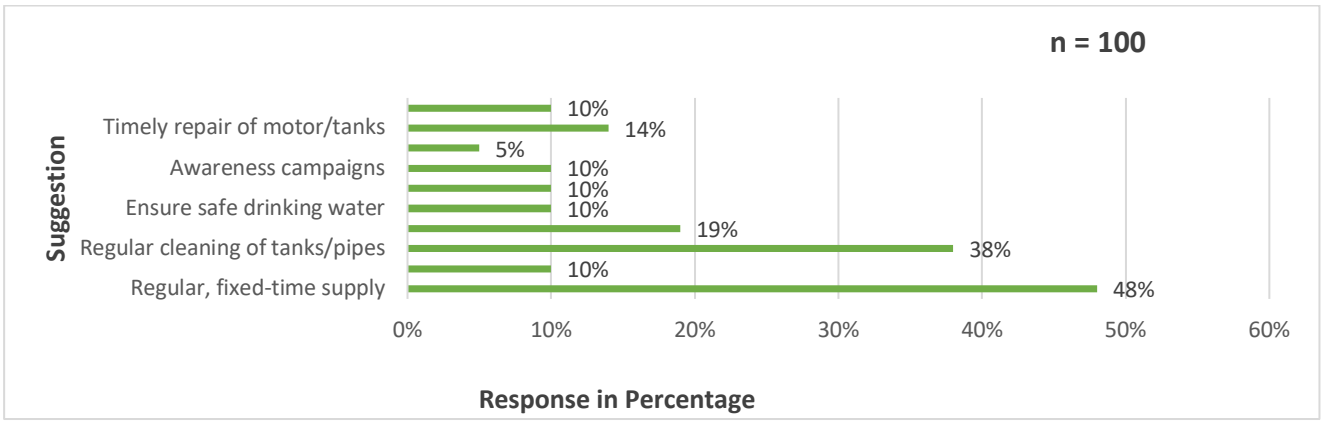


Figure – 11 Distribution of respondents according to suggestion expressed by villagers regarding JJM

Respondents offered several valuable suggestions to improve the functioning of the JJM. A total of 48 percent of respondents emphasized the need for regular and timely water supply, while 38 percent highlighted the importance of regular cleaning of tanks and pipes. Approximately 19 percent suggested appointing a responsible operator to ensure consistent management. Other suggestions included timely repair of motors and tanks (14 %), installation of meters to prevent wastage (10 %), regular water quality testing (10 %), and awareness campaigns to promote responsible water use (10 %). Only 5 percent emphasized the importance of rainwater harvesting as a supplementary measure.

Conclusion

This study indicates that the expansion of functional household tap connections has significantly reduced the burden of water collection on women and children, but many households still experience intermittent water supply and receive insufficient quantities of water. This aligns with previous studies (Singh and Naik, 2024; Hope and Mukherjee, 2023) and points to persistent challenges in service delivery despite the availability of infrastructure. Traditional water sources such as handpumps and ponds continue to play a crucial role in meeting daily water needs, highlighting the importance of a comprehensive water management approach that integrates new infrastructure with existing community resources, as also found in other studies (Wells, 2023; Bhatt and Banerjee, 2024). The JJM has yielded limited socio-economic benefits, such as increased employment and income, highlighting shortcomings in governance and social inclusion (Kumar, 2024; Chaudhary, 2022 also found similar results). However, health outcomes have improved with a reduction in waterborne diseases, supporting the positive impact of the mission on public health (WHO, 2023; Tata Trusts, 2024) studies also support this result

The experience of Chorma village highlights the complexities of rural water supply, including challenges such as irregular water supply, insufficient service duration, and continued reliance on traditional water sources like handpumps and ponds. Furthermore, limited community participation and unequal socio-economic benefits indicate the need to strengthen governance and adopt an inclusive approach for sustainability. While improvements in health indicators demonstrate the positive impact of the program. Overall, this study emphasizes the need for focused efforts on infrastructure maintenance, promoting community participation, and ensuring equitable and reliable water supply to fully realize the transformative vision of the JJM.

Acknowledgment: We express our deep gratitude to the Indian Council of Social Science Research (ICSSR), New Delhi, for their invaluable financial support in funding this research project. We wholeheartedly appreciate ICSSR's unwavering commitment to advancing this research, as well as the provision of the necessary funds that made this work possible.
Author's Contribution: *Aseena Ekka*: Data Collection; *Shubham Verma:* Data Collection; *Rohit Raja*: Literature Review, Data analysis; *Pushpraj Singh:* Methodology, Analysis, Drafting, Referencing.
Funding: Indian Council of Social Science Research (ICSSR), New Delhi
Declaration: All the authors have given consent for the publication
Competing Interest: The authors have no relevant financial or non-financial interest to disclose.

References

1. Bhat, A., & Banerjee, S. (2024). Impact of Jal Jeevan Mission on rural households of Maharashtra: A comparative study between NRDWP and JJM. *International Journal of Scientific Development and Research, 9*(1), 145-156. https://www.ijsdr.org/papers/IJSDR2401022.pdf
2. Bhattacharya, P., Welch, A.H., Ahmed, K.M., Jacks, G., Naidu, R., (2004). Arsenic in groundwater of sedimentary aquifers. Appl. Geochem. 19, 163–167. https://doi.org/ 10.1016/j.apgeochem.2003.09.004.
3. Chaudhary, A. (2022). Jal Jeevan Mission and women empowerment. *International Journal of Scientific Development and Research, 7*(10), 435-438. https://doi.org/10.1234/IJSDR 2022.ISSN2455-2631
4. Hope, R., & Mukherjee, M. (2023). Keeping piped water flowing in rural India (Working paper). Smith School of Enterprise and the Environment, University of Oxford / Uptime Global. https://www.smithschool.ox.ac.uk/sites/default/files/2023-03/Keeping-piped-water-flowing-in-rural-India.pdf
5. Kapaj, S., Peterson, H., Liber, K., Bhattacharya, P. (2006). Human health effects from chronic arsenic poisoning–a review. J. Environ. Sci. Heal. Part A, Toxic/hazardous Subst. Environ. Eng. 41, 2399–2428. https://doi.org/10.1080/ 10934520600873571
6. Kumar, R. (2024). Impact assessment of the Jal Jeevan Mission in rural Jharkhand: An analysis of tap water supply. *International Journal of Enhanced Research in Educational Development, 12*(5), 6-10. https://www.erpublications.com/uploaded_files/download/dr-ranjeet-kumar_GkKLN.pdf
7. Ministry of Jal Shakti (2019). Operational guidelines for the implementation of Jal Jeevan Mission. Government of India. https://jaljeevanmission.gov.in/sites/ default/files/ guideline/JJM_Operational _Guidelines.pdf
8. National Institute of Rural Development & Panchayati Raj (NIRDPR). (2023). Jal Jeevan Mission 3 day training module. https://nirdpr.org.in/nird_docs/sb/JJM-3dayTraining Module% 28 English %29.pdf
9. Paliath, S. (2024, May 18). Jal Jeevan Mission faces challenge to ensure water flow. IndiaSpend. https://www.indiaspend.com/governance/ensuring-sustainable-water-supply-for-tap-connections-a-challenge-for-jal-jeevan-mission-908372
10. Ravenscroft et al., (2011). Arsenic contamination of drinking water supplies, reported from more than 70 countries is a serious health hazard to an estimated 150 million people world-wide.
11. Singh, A., & Naik, G. (2024). Rural drinking water supply program and societal development: Evidence from the early implementation phase of India's Jal Jeevan Mission. *PLOS ONE, 19*(11), e0312144. https://doi.org/10.1371/journal.pone.0312144

12. Tata Trusts. (2024). The impact of the Jal Jeevan Mission on rural communities in six states [Impact assessment report]. https://www.tatatrusts.org/insights/survey-reports/the-impact-of-the-jal-jeevan -mission-on-rural-communities-in-six-states
13. Wells, T. (2023). Drinking water for every rural household: Tamil Nadu village highlights challenges. WELL Labs. https://welllabs.org/jal-jeevan-nadiyam-tamil-nadu-piped-water-access/
14. World Health Organization. (2023). Health benefits and cost savings from universal safely managed drinking services following the Jal Jeevan Mission initiative, India: Summary report. Ministry of Jal Shakti. https://jaljeevanmission.gov.in/sites/default/files/2023-06/Jal-Jeevan-Mission-Summary -of-report.pdf