

Users Participation in the Design and Implementation of Health Information Systems Programme in Indian Context - Myths and Realities

Zubeeda Banu Quraishy

Department of Informatics, University of Oslo, Norway
Gaustadalleen23, POBox.1080, Blindern N-0316, Oslo
zubeedaq@ifi.uio.no, 98 400 20114

ABSTRACT

User participation has long been considered a key variable in the successful development of information systems[1,3]. However, in practice particularly in developing countries it has been proved that involving users in design and implementation of information systems is not an easy task as both political and social structures are highly rigid, bureaucratic and hierarchical in nature. Legislations were enacted to introduce decentralization as it was felt that decentralization would bring government closer to people and also the existence of local political arenas make easier for ordinary citizens to participate and exert influence. But even the measures taken by the government have proved futile as it was difficult to break the monopolisation of power by certain elite groups which is often the consequence of centralized political and administrative structures [5, 6, 8,13].

This study provides a scenario of myths and realities of decentralization, users participation in the design and implementation of project in the Indian context.

Author Keywords

India, Decentralization, User participation, Implementation, Health Information Systems.

INTRODUCTION

Keeping in view the importance of the users participation and their involvement both in implementation of projects and local governance activities efforts were made to introduce decentralization through legislation as it was felt that it would increase efficiency and also set the stage for policy experimentation on a large scale. Moreover, with many independent decision making bodies, there will be considerable room for different initiatives. New approaches can be tried and those turn out well can be applied in other places. In this respect, a decentralized political system can function as an open market[9,10]. So, in many developing countries administrative reforms were directed at achieving decentralization of planning through use of information systems

DECENTRALISATION IN INDIA

In India after many years of debate and struggle administrative reforms took place in 1980s aiming at decentralisation of planning through the use of information systems. The policy of user involvement is now explicit in most statutory and voluntary initiatives. Democratic ideals emphasise the right to maintain a different opinion than those in power to forward opposing positions and to build knowledge on an alternative basis to support a different view. In a democracy those affected by a decision take part in the making of the decision. Historically this means giving equal rights for people with little or no power. All members in a democratic society should have the opportunity to take part in decision making through direct participation or through representatives participating or expressing opinion on behalf of them. Since this was denied to people or workers occupying the lower rungs in the occupational ladder in India and excessive concentration and decision making was vested with higher authorities in central governments decentralization was considered as a remedy. Decentralization is a term often imbued with many positive connotation such as participation of the local people, relevance of locally generated data, autonomy of decision making, accountability and democracy [2,12]. According to many writers, decentralization involves a combination of three factors: delegation, devolution and deconcentration [4, 11].

Also, decentralization not only promotes participation but also improves the controlling function held by the lower levels of the political systems making more ordinary people influence and involve in the political process thus strengthening the state's capacity for implementation.

While Scandinavian research projects in system development have traditionally put a strong emphasis on user participation as a strategy for increasing working life democracy it remains to be seen in reality how many projects meet this goal and this article analyses Health Information Systems Project(HISP) in India with respect to this goal. In the context of India since both political and social structures are strongly hierarchical and bureaucratic in nature how far the users are really involved in the design, implementation and control of the project needs to be studied. More over to improve the user participation at all levels in organizations both public and private the policies

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were framed in India to improve their involvement hoping that change occurred in organisations will not only encourage users to participate in discussions and decisions, but will focus on the issues they identify as important.

Using case study as a method this paper will decipher the myths and realities of user participation in the implementation of Health Information Systems Programme which seeks to strengthen information practices within the Primary Health Care (PHC) sector with the larger aim to improve processes concerning health care delivery for the rural community, to improve governance processes within the health sector, and to support the ongoing agenda of reform through decentralization.

Health Information Systems Programme is an ongoing action research project related to the implementation of information systems for improved local control and use of information at district and sub-district levels in the health sector in Andhra Pradesh.

SITUATION ANALYSIS

The Primary health care sector in Andhra Pradesh which is the main interface between the community and the health sector is fragmented and there is no cohesion between the various health departments for whom enormous amount of data is collected at the grass root level. The main duty of the health worker is to perform out reach services to the communities under her purview such as providing AnteNatalCare(ANC), performing institutional deliveries, giving immunization to infants and children, providing treatment on minor ailments, and motivating eligible couples for adopting spacing methods and sterilisations, conducting sputum tests of suspected TB patients, reporting and providing immediate care to patients on outbreak of epidemics etc. But now instead of performing outreach services the health worker is burdened with achieving targets on performance indicators mainly sterilisations, immunizations, ANC, Post Natal Care and institutional deliveries etc and then on the 28th of every month all the health workers assemble in primary health centres to collate data collected on the above performance indicators into different registers. Generally the health workers enters the data after performing services into her field diary and then from her field diary the data is aggregated and entered in to the comprehensive register and then from the register the aggregated data is again entered in to different reports like CNA(Community Needs Assessment) report, school health and hostel reports, immunization, Eligible Couple report, Blindness control, Leprosy, Iodine deficiency, malaria and TB programme reports etc. It is quite tedious work and the health workers who are now used to this dull work cull out the figures from the registers and enter into reports to be sent to the various officers in charge for the different vertical programmes thus resulting in monotonous collection, collation , duplication and manipulation of data.

The data collected by the health worker at the cutting edge level is sent vertically upwards with little or no feed back and support from the top to the health worker in the field who needed the information most. In spite of the fact that

community use, feedback and feed up is essential for a successful sustainable information system particularly in cases of sensitive issues such as Reproductive Tract Infection(RTI),Sexually transmitted Infections(STI), HIV/AIDS cases and epidemics like Gastroenteritis(GE) and diarrhoea it never happened in the health sector of AP. It is at this local level that the information is available and where immediate action needs to be taken. On contrary, the use of information is minimally used at the top. Communities and service providers need to share relevant information on the local situation to develop and prioritize strategies together to improve the health situation. Sharing respectful dialogue and resources between communities and service providers can produce positive and lasting improvements by creating a shared vision, goal and objective through approaches that foster equity and shared responsibility.

The transition to an information system that is an integral part of local governance and part of a social process for development is not only a question of changing of structures and technologies but it challenges deeply rooted values and perceptions with regard to society, technology and health care.

The quality of existing information management practices within the Primary Health Sector in AP is extremely poor as the data collected is of poor quality, redundant, aggregated at every level and by the time it reaches the top the situation in the peripheral areas is completely masked. The health workers are under tremendous pressure for data collection and transmission to the top where it is used minimally. Also, major portion of the time of health workers gets wasted in duplicating the data as they have to report almost the same data to various departments using approximately forty forms thus leading to poor quality and fragmentation of the data. The above work is done at the cost of neglecting of providing essential services to the community which is the prime duty of the grass root health worker.

Except for making the field staff attend routine camps to train them how to motivate eligible couples for sterilizations there were no attempts at all to equip them with additional technological skills, develop a culture of use of information, enhance their capacity in decision making at the PHC level. The structure is so bureaucratic and hierarchical that there is no way of participation of health workers even at the PHC level while participation in the decision making at the higher level is almost a dream. Decentralization which was so much talked about in India about not only promoting participation but also improving the controlling function held by the lower levels of the political systems making more ordinary people influence and involve in the political process thus strengthening the state's capacity for implementation remained only on paper with little or no effect. Thus, in this case too the health staff at the cutting edge level in all terms were marginalized.

INTRODUCING HISP:

It is in this context HISP(Health Information Systems Programme), a global initiative was introduced initially as a

pilot study in Kuppam, a small geographical area consisting of 9 PHCs spread over 5 mandals in the state of Andhra Pradesh.

As the main objective of our project is to strengthen information practices within the Primary Health Care (PHC) sector with the larger aim to improve processes concerning health care delivery for the rural community initial months were spent in trying to understand the structure and functioning of the PHCs along with the complex and multi-level flows of health information from the rural community to the department in state head quarters through the intermediary layers of the PHCs and district offices.

Based on the information and interaction with the health staff and officials at various levels strategies were devised for capacity building of the staff keeping in mind that users possess domain knowledge and attitude for acquiring new skills and what they require is the training, motivation and support to build capacity in them which will lead to empowerment. As Johnson [7] notes "all capacity development should be empowering. This requires that people, who are poor, i.e. lacking certain capabilities, should be recognized as key actors in their own development, rather than passive beneficiaries of transfers. Since Multi Purpose Health Assistants working at the grass root level are the main interface between the community and the PHC they were focused as main targets for the training along with medical officers and other para health staff.

Thus participation in this context is considered a key issue both in terms of understanding not only existing capacities but also in developing new capacity. At the same time keeping in view the existing structures both political, social and economic the participation of users in the design, development and implementation of information systems is not an easy task but a challenging one. More over the health sector in India is highly complex with many levels of hierarchy and all fragmented. So targeting the users for participation in implementation of HIS needed a multi pronged strategy.

With the above perspective, training sessions for capacity building of users were organised. Initially majority of the health staff mostly females and those working at the community level attended the training programme though many of them did not understand the concept of Health Information Systems(HIS) but they still participated in the training programme because there was pressure from their immediate superiors. Not undermining their lack of understanding or disinterest the training programmes continued both at 'on-site' and 'off-site'.

During these training programmes apart from imparting technical skills in operating computer systems and working on DHIS software, training on use of information was provided. This helped them quickly realise that with the vast amount of data collected information on various issues and indicators could be easily developed through simple analysis. The health workers particularly at the cutting edge level who were keen in taking part in the decision making

particularly relating to getting their targets reasonably fixed for important performance indicators and in making rational demands for drug supply to their PHC realised the need for decentralised information.

But unless access to information and use of information culture was developed the health workers had no choice but to routinely collect and collate data and they soon realised that this could be done through a computerized application and also by developing an information culture.

Many health staff in all seriousness started to learn to use the application and how to make use of information. And within seven months of initiating the implementation of HIS in many PHCs in Kuppam the data was entered into the application and regularly updated. They soon realised the benefits of using the application which not only reduced their manual work, duplication of collecting and collating data but helped them to analyse both individual and institutional performance both across time, indicators and institutions. Based on the initial success of the implementation of HIS the Commissioner of Family Welfare gave permission to generate reports using the application. Reports were designed taking the inputs of the health staff at all levels and were given demo to the staff and as well to the higher authorities. But when it came to actual practice the senior staff within PHCs and authorities at the PHC level did not participate in the use of generating reports thus putting the whole process of implementation of HIS at stake. In AP the health sector has selected 16 performance indicators such as Sterlisations, immunisations, institutional deliveries, successful cases of ECs being motivated for undergoing button hole tubectomy(BHT), number of pregnant women registered for ANC before twelve weeks etc are some of the important performance indicators against which the PHCs are given targets which again filter down to the field staff. Without taking into consideration the ground realities such as size, type and composition of the population and other duties of the health workers the authorities fix the irrational targets based at the health workers based at the field to achieve them. In one case a health worker responsible for a Population Project(PP)unit in Kuppam constituency was asked to complete 11 cases of sterlisations per month. To achieve that target the PP Unit should have a population of 11000 population but the above unit has only 5000 population and while many times the health worker has highlighted the mismatch between the size of the population and the targets fixed on sterlisations and pleaded with the authorities to fix the rational targets it has not been taken into consideration and in turn the authorities keep pressurising the health worker in achieving the targets. These targets have been unrealistic in the sense that in majority of the cases they are beyond the stage of being fulfilled. Instead of questioning the irrationality of targets and demanding for rational targets from higher authorities the practice for years has been to manipulate the data particularly at the time of collating and reporting in the formats at the PHC level. This is done mainly by the

medical officers and health supervisors to escape the wrath of the higher authorities and to get good grading for their institutions. The participation of the users in the process of implementation of HIS remained fine till the point of data entry but little did they realise that manipulation of data cannot be done while generating reports. (The DHIS generated monthly progress reports of PHC, PPU, UFWC, UHC, Family Welfare Performance report, Family welfare performance institution-wise report and MTP (Medically Terminated Pregnancy report) and many more required by the DM&HOs office). After completing data entry and when reports were generated both the supervisor and medical officer were shocked that figures shown in the reports were far below the targets given by the authorities. Since the reports were printed using the application they could not change the figures. And there was no option to generate empty formats of the reports in the DHIS software and so the opportunity of filling the figures manually was not present. Soon the staff at the PHC realised that computerised reports designed with their participation did not allow them to manipulate the data which they had been used to.

Within short span of time the numbers of PHCs generating reports using DHIS software dwindled. Initially they gave excuses but soon they came with the request of developing the option in the software to manipulate the figures. Since improving quality of data is one of our main objective the team discussed the above issue with the medical officers in getting their targets fixed rationally using the information about their geographical area, population and other criteria but it is of no use as the concept of decentralised information which is much spoken is still far behind in practice. The state proclaims several things but rarely reaches down to the base level of society [6].

At that time, implementation team continuously motivated the users to complete the data entry in the DHIS software and generate the reports using the above application and then using the information demand for rational targets to be fixed from the higher authorities. But the users were in dilemma. Since the users at the higher level did not participate in the implementation of HIS the staff at the field level reverted back to manual systems of collecting, collating and making manual reports. Thus implementing change is more difficult and contrary to the notion that in developing countries anything which comes free particularly technology will be easily accepted and can be implemented is a myth. More over, initial rhetoric about participation and local autonomy first through local representatives and later through elected representatives promoting participation and encouraging the controlling function by the lower levels even through decentralisation never happened. And the reality is central governments have guarded their power and people were not allowed to decide, control and manage their own development [12].

REFERENCES

1. Aarhus. *The Aarhus conference January 1975. Forms of working in system development* (Aarhus-konferencen januar 1975. Arbejdsformer i systemudvikling) DAIMI PB-46, University of Aarhus.
2. APDC. *Reaching Out Effectively: Improving the Design, Management and Implementation of Poverty Alleviation Programmes* (Getubig, I and Shams., K, eds) Asian and Pacific Development Centre. Kuala Lumpur, Malaysia. 1991.
3. Bjerknes, G. and Bratteteig, T. *Implementing an idea—cooperation and construction in the Florence Project (Å implementere en idé—samarbeid og konstruksjon i Florence-prosjektet)* Florence Report no 3, Department of Informatics, University of Oslo. 1987a
4. Conyers, D. and Hills, P. 1984. *An introduction to development planning in the third world.* John Wiley and Sons, Chichester
5. Grindle, M., 2000. *Audacious Reforms. Institutional Invention and Democracy in Latin America,* John Hopkins University Press
6. Hadenius, Axel. *Decentralisation and Democratic Governance. Experiences from India, Bolivia and South Africa.* ed. Almqvist & Wiksell, International, Stockholm. 2003
7. Jonsson, Urban. UNICEF East and Southern African Office (ESARO) Regional Director's, *Presentation at the Second Regular Session of UNICEF's Executive Board,* (2000) 18 - 20 September.
8. Lijphart, A. 1977. *Democracy in Plural Societies,* Yale University Press.
9. Manor, J. Crooke, R., *Democratic Decentralization,* OED Working Paper, No. 11, The World Bank, Washington D.C. 2000
10. Oates, W., "An Essay on Fiscal Federalism", *Journal of Economic Literature*, vol. 37, no. 3, (1999) 1120-49
11. Rondinelli, D. A. *Development projects as policy experiments.* Routledge, London. 1993
12. Turner, M and Hulme, D. *Governance, administration and development: making the state work.* Macmillan Press Ltd. UK. 1997
13. World Bank, 1977, *World Development Report 1977. The State in a Changing World,* Oxford University Press, Oxford.