



## CRITICAL APPRAISAL TO IMPROVE THE DATA QUALITY IN THE NATIONAL FAMILY HEALTH SURVEY

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### ABSTRACT

National Family Health Survey is one of the pillars of health planning and policy-making in the country. These surveys primarily serve to provide essential data on health to nation. However, the critical appraisal of data quality is important to improve the same. This article is based on the experience of National Family Health Survey (NFHS)-4 that includes assessing field agency, interviewers, etc. and suggests improving the quality of data.

### KEYWORDS :

#### INTRODUCTION:

The national family health survey is a large-scale, multi-round survey conducted in a representative sample of households throughout India. All National Family Welfare Surveys have been conducted under the stewardship of the Ministry of Health and Family Welfare, Government of India, with the International Institute for Population Sciences, Mumbai, serving as the nodal agency. The institute is expected to collaborate with field organizations to conduct the survey. ICF International (formerly Macro International), Maryland, USA, provides technical assistance for all four surveys conducted as on date.

#### CRITICAL APPRAISAL

The survey is not an easy job. Such large-scale surveys often face challenges in data collection, in terms of several non-sampling errors arising due to shifting of age and year of birth across the reference boundaries, interviewers' characteristics, interviewers' fatigue, length of the survey instruments, time taken to complete interviews, number of sensitive questions, presence of others at the time of interview, involvement of large number of survey organization with varied capacities etc. It is important that a scientific approach is adopted to understand and measure the possible errors and appropriate lessons are learned. So, the **critical appraisal** of data quality is important to improve the same.

This article is based on the experience of NFHS-4. All the information was collected from the field experience when one of the authors worked as a Project Officer in Tamil Nadu state.

#### Training Programme:

In 2015 NFHS-4 survey started in Tamil Nadu. 300 interviewers (male and female) participated in the survey. The training was conducted in Dindigul. The Interviewers were from different disciplines, like Pure Science, Engineering, different social sciences, but very few candidates came from Demography field.

The training place was arranged by the Field Agency (FA) in a Marriage Hall. The Hall was near Bus stand, Market Street. The interviewers were accommodated in the same marriage hall where space was not sufficient for all. Interviewers were absent most of the time during the training period as they were frequently suffering from health problems like fever, diarrhoea because of the unhygienic place. The place was not suitable for training. Time to time disturbances occurred in the buildings so the training place (Hall) was frequently changed within the building.

Different type of methods was followed to give training like Lecture, LCD projection, participatory, question session, practical session, mock interview, practical session, recollection and conducting the test. Ice break session was not conducted. There was no entertainment for trainees. They

were not given enough time to take the session. The FA was careful to keep costs low.

Mismatch of the respondent's name, address and age in the main survey in terms of several non-sampling errors arose due to the shifting of age and year of birth across the reference boundaries in mapping. Mapping was poor; some structure was not in the correct segment but in a different segment on mapping.

#### INTERVIEWERS:

Most of the interviewers were struggling to understand the terminology of the survey questionnaire. During the survey, the interviewers used English words which the rural people were unable to understand. For example, some of the medical terms (like female sterilization/ contraceptive etc.) used by the Field investigators in English was not clear by the respondents hence, they were unable to give a proper answer to them.

There was no safety for the Female Interviewers in the Training place. A large number of girls were staying at a very big dormitory and nobody was taking care of them. A brothel lady was mingling with the girls without any restrictions. Food quality and quantity were poor. There was no identity cards with them Overall field investigators did not probe well and they missed some important questions because of the language problem. Some translation from English to Tamil was bad in Computer Assisted Personal Interview (CAPI). The male interviewer was hesitating to probe regarding HIV session and sexual behaviour related questionnaire. Some people had poor handling skill in CAPI.

Field Investigators' (FI) rapport was not good, as they could not understand the local language. FI's understanding was poor as they enquired about unnecessary questions again and again, and the respondents got irritated hence, more time was wasted. FI was hesitant to ask about contraceptive methods and sexual orientation but some of them were more open.

On the state's front, people were speaking the mixed language, and FI got confused and could not explain the subject to the respondents. Most of the women were hesitant to explain about their sexually transmitted infection (STI)/reproductive tract infections (RTI) problems with the unmarried girls. (e.g) Vellore, Kanyakumari, Krishnagiri, Mahe.

Health Investigator (HI) did not follow the protocol to measure Blood Pressure (BP). (e.g) In NFHS-4 HI the measurement instrument should be kept in her/his hand at the heart level when measuring BP, but the device was not placed at Heart level. Hemoglobinometer (HB) meter closed very fast, Microcuvette could not check for bubbles, Microcuvette container expiry date was not mentioned.

The survey team did not follow proper disposal of biohazards waste as per the protocol. They did not hand over to the health centre (PHC/GH) to burn the biohazards. HI could not handle weighing machine properly.

The supervisor in monitoring the CAB process with Lack of Supervisor's training and knowledge about the Clinical Anthropometric Biochemical (CAB) caused difficulties in monitoring the CAB process. Some supervisors forget to fill the biomarker questionnaire cover page and were not playing their role properly. Some supervisors misbehaved with the investigator, particularly female investigators. Some of them misused their power without understanding their responsibility. Hence, some qualified interviewers had to leave the survey.

#### Field Agency

Mapping listing was poor. FA tried to complete the survey in haste. FA staffs were more ignorant regarding national level health survey. They did not understand the value and importance of the data, and their field experience was also very poor. Moreover, they could not understand the local language, this drawback created more problems between FI and FA. They acted inhumanely. (e.g) in NFHS-4 the FI waiting for food with an empty stomach but the coordinator was eating in front of them.

Field Agency (FA) failed to provide the required vehicle to each team separately. CAB materials, health card, referrals forms of Anemia, blood glucose, blood pressure, and ICTC for main survey field work were not adequately provided to investigators. supervisor provide, iodine test kit, sample of ORS powder, IFA/syrup, Iron, Vitamin A tablet, coulometer battery, List of social service organizations, List giving Hindu/Muslim months for age calculation etc. were not provided adequately. insufficient space for storage of the CAB materials and USB card/Data card for internet usage was also inadequate.

During the survey the supervisor, met with many problems like accommodation, moving from one place to another. (e.g) the survey was not getting permission from local officials, like district, block and rural was not easily provided for the survey'. within the town, the vehicle used for the survey team was stopped by a policeman who asked many questions with the supervisor about the sticker on the van (sticker named "On Duty Govt"), the supervisor explained the policeman but he was not convinced and told that 'no information came to my station and without proper information you cannot move in the town'. Finally, the supervisor personally contacted with their senior and then the problems were solved.

FA was not properly recruiting the Field Investigator, the selection was not based on their educational qualification and field experience. Not even sufficient and good food was provided to investigators. Supervisors were not allowed to use their mobiles.

Team composition (one supervisor, one male investigator, three female investigators and two for CAB) was not according to the protocol. FAs coordinators were not visiting the Primary sampling Unit, did not discuss the field issues, no surprise visits.

FA was not rechecking the FI data, did not monitor the CAB activity. Delayed in IT persons' service which further delayed the completion of the Primary sampling Unit.(e.g) NFHS-4, in any (PSU), when there was a failure in FIs' CAPI, the IT person came late. FA and other partners never met to discuss field situation during the main survey. (E.g) International Institute for Population Sciences (IIPS), ICF, Ministry of Health and Family Welfare (MoHFW).

#### Interviewers faced the problems:

The language was the main problems for them, the FA

coordinators were not domicile of the state and no staff were there who could speak the regional language Tamil. After the start of the survey, researchers were either not paid or paid less than mandatory minimum wages and had to work in unsafe conditions. They were not allowed holidays and were issued letters saying that if they leave their work midway, they were not entitled to any payment.

Most of the interviewers were hungry when the author visited the team because of the delay of DA. Field agencies often violated labour laws with regard to payment, accommodation, travel and insurance.

The agency violated several labour norms. Researchers were not paid during their four-week training and were made to wait another month and a half without any emoluments before the survey was initiated.

#### Suggestions to improve the Quality of Data:

The biggest shortcoming was an insufficient number of poorly trained and poorly paid field agents to collect data who received very little logistical support and work under harsh conditions. This adversely affected the quality of the data collected as the design of the survey was made by untrained field agents. To avoid such problems, the study proposes the followings.

#### To Field Agency:

- Involve the government institution as FA like National Institute of Rural Development (NIRD), State Institute of Rural Development (SIRD), Population Research Centre, and Universities.
- The trainer should be Demographer, as the Demographer role is important during the training period to complete the survey.
- Should be given honorarium without delay as well as vehicle and other facilities to the Demographer.
- Field Agency (FA) should get proper cooperation from the state, district and local authorities, and authenticate the permission through official emails.
- Prepare the permission letter both in English and Local language to get permission easily from the state, district and local bodies to conduct the survey.
- Recruitment should be done in the proper manner, like give add in newspapers; local channels etc, the interviewer should be a Postgraduate. Also, preference should be given to the research scholars with the background of population studies and social science students.
- Should assure the Interviewers safety, Should give ID card, incentives, mobile, diesel, allowance, food accommodation, without delay.
- FA should appoint qualified and a sufficient number of the coordinators to help and monitor the Survey Team. If the Coordinator will be research scholars it will improve the survey quality.
- Should give referral card to the respondents.
- Field Agency should ensure the safety of women investigator.
- Field Agency coordinator when visiting the team should discuss with the survey team about their accommodation, food, TA, DA, incentives, health conditions etc. Should be given refreshment to the interviewer in the field.
- Should monitor during mapping listing to avoid variations of non-sample error.

#### To Nodal Agency:

- Should appoint their field survey team Project Officer (PO) and Senior Project officer (SPO) with the background of Demographic/Population studies for the field candidates.
- Nodal Agency's Field survey Team (PO, SPO) should closely monitor the Field Agency. This may affect the

quality of the survey.

- The Nodal agency referee should re-interview at least once in a week.
- The Nodal agency PO, SPO when going for the field visit, should approach the Field Investigator carefully and covertly and speak appropriately to avoid abuse of power. They need to act in a fair and reasonable manner, without any possibility of hatred and reprimanding the field investigators with understanding. (e.g) some PO misbehaved with the Interviewers and Supervisors during the NFHS-4 survey, this caused the qualified Supervisor and interviewers to leave the survey.
- The PO, SPO should avoid blaming the colleague, misinterpreting the colleague, as well as the Nodal Agency should analyze their (PO, SPO) statement before taking any action against.
- The Nodal Agency should arrange the place for the Trainers (PO, SPO) at the institute. If it is not possible, they should arrange training elsewhere or other institutions. (e.g) Staying is a problem in IIPS during the training period.
- On the states frontier level, involve the native district persons as Field Investigator, it will avoid language problems.

**Others:**

CAB and Supervisors' oral and written exam questions were not in the local language. After completion of the training, they conducted the exam. The test question paper was in the English language. But the training was in the Tamil language. The interviewer were confused and could not understand the test questions properly.

In addition, add some topic in the questionnaire to improve the uses of data. For e.g., in Household questionnaire add about the agricultural system, type of fertilizer, Plastic usage, disposal of their wastage from home.

**CONCLUSION:**

NFHS data .is important to all' with 'The main objective of the NFHS has been to provide essential data on health and family welfare and other related issues in India. NFHS data are useful in research and policy-making particularly in health planning of the country. hence, controlling the quality of data collection is the most important task of the survey. The shortcomings of the survey should be explored without any bias. Interest of the interviewer is a must while collecting data. Field Agency should keep in mind that the survey is not a job but his services to the nation. A huge amount is spent to collect the Health Information, if the workers are not interested in their work, the time, energy, money all will be wasted.