QUALITIES OF HMIS PRODUCED INFORMATION

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ABSTRACT

Another area where IT can be very important in rural places is health care. At the local Primary Health Centre (PHC) or Sub-Centre(SC), medical professionals and paramedics can obtain up-to-date information about health programs and consult specialists with illnesses or conditions they are unable to diagnose or treat. The village PC may eventually be utilized as a telemedicine node and as a disease surveillance system. Many experiments are currently underway to bring the PC and the Internet to rural areas. Individuals have shown a great deal of enthusiasm[1]. The creation of pertinent material in regional languages, the accessibility of low-power computers, and the education of local government representatives about IT can all significantly improve health services. The standard of living of the rural people in India is also rising in light of technological advancements in the fields of agriculture, health, education, and medicine. Modern information technology offers advancements over antiquated duplication and recording methods. Significant advancements in the fields of data processing, sharing, and administration have also reduced costs. Reviewing the current systems in order to find better answers and embracing upcoming difficulties with the help of our incredibly potent "Information Technology" tool is necessary [3]. Today's health issues require an information technology approach to be solved. The web application might operate as a catalyst by providing a range of reactions. The Internet could aid in educating the public about healthcare and self-care. The Internet has given the government a reprieve by providing a quick and efficient means of reducing costs while also improving the quality of healthcare services [2]. There is a need to enhance the system's quality and betterment in light of the growing need for the use of the Health Management Information System (HMIS) to raise the standard of healthcare services. Researcher has taken opinion on various HMIS quality factors like – accuracy, completeness, timely information, relevancy of data etc. From the comparative analysis of staff and officers for each quality factor of HMIS it is observed that accuracy is the most important quality factor of HMIS.

Keywords *– Information, Health Management Information System (HMIS), Health Centers, Health Services, Role of HMIS, Accuracy of data.*

1. Introduction

These days, information technology appears to be the key to everything. Simplifying duties, the IT boom has benefited businesses, government agencies, schools, and stock markets alike. The internet is crucial in this situation and is a lifesaver for serious problems. With IT, India has advanced significantly. By bringing PCs to every district in the nation, the National Informatics Centre (NIC) has successfully streamlined government-to-government contacts and communication procedures. Even in villages, the internet is helpful in spreading knowledge. Under the umbrella of I.T., the rural health, education, and agricultural systems are truly thriving.

Every area of industry, including education, healthcare, libraries, entertainment, and even agriculture, is being revolutionized by information technology. Over the past twenty years, there has been a variable increase in the automation and computerization of procedures, which has made life easier. The standard of living of the rural people in India is also rising in light of technological advancements in the fields of agriculture, health, education, and medicine. Even if a computer is only a tool for processing information, it can still be useful to the villagers by providing information on government programs, employment possibilities, nearby medical and educational facilities, agricultural inputs, and seasons[3].

The healthcare segment is one challenge for the I.T and can work wonders with the village paramedic staff being able to get access to latest schemes and seek advice with specialties and ailments they cannot diagnose or treat at rural level [1].

Internet can help boosting the health awareness in India. The healthcare systems come under a huge digital divide of people who can access internet and are well informed, whereas the other category reels under meeting basic necessities. The e-Health concept works best for international patients, by helping them choose healthcare facilities worldwide at the

touch of a button. Internet is a source to providing updated data, in tracking epidemics and natural disasters and providing timely & relevant resources [2].

Health Management Information System (HMIS) is responsible for scrutinizing many factors like drug stocks, equipment status & availability, personnel & finances involved. This factors needs to be monitored on regular basis. Timely and accurate information is required to improve serviced delivery. The HMIS renders data recording, retrieval and storage. This data is available at National, State and institutional level facilitating planning, organizing and control of health care facilities [3].

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2. Research Methodology

2.1 Objectives:

The specific objectives of this paper are as under –

- To take overview of staff and officers from health centers about quality factors of HMIS.
- To find out most important quality factor of HMIS according to staff and officers point of view.
- To give findings & suggestions on HMIS quality factors based on comparative study.

2.2 Methodology Adopted

The approach used combines a review of the literature with document analysis from government gazettes, questionnaires, and interviews with health center officers and workers. Through the use of questionnaires, the information needed for this paper was gathered. Two surveys, one for officers and one for staff, have been produced by the researcher. When necessary, a variety of statistical techniques are used to tabulate, code, and analyze the primary and secondary data that has been gathered.

3. Data Analysis and Interpretations

The data collected from varied sources was analyzed in a systematic way through tabulation, percentage and graphical presentation by using Microsoft Excel. Similarly testing of hypothesis is done with the help of software tool 'Statistical Package for Social Science (SPSS) by referring to statistical tools such as t- test, post hoc (Duncan's test), ANOVA. and the interpretation of test result is given.

3.1 Qualities of HMIS produced information:

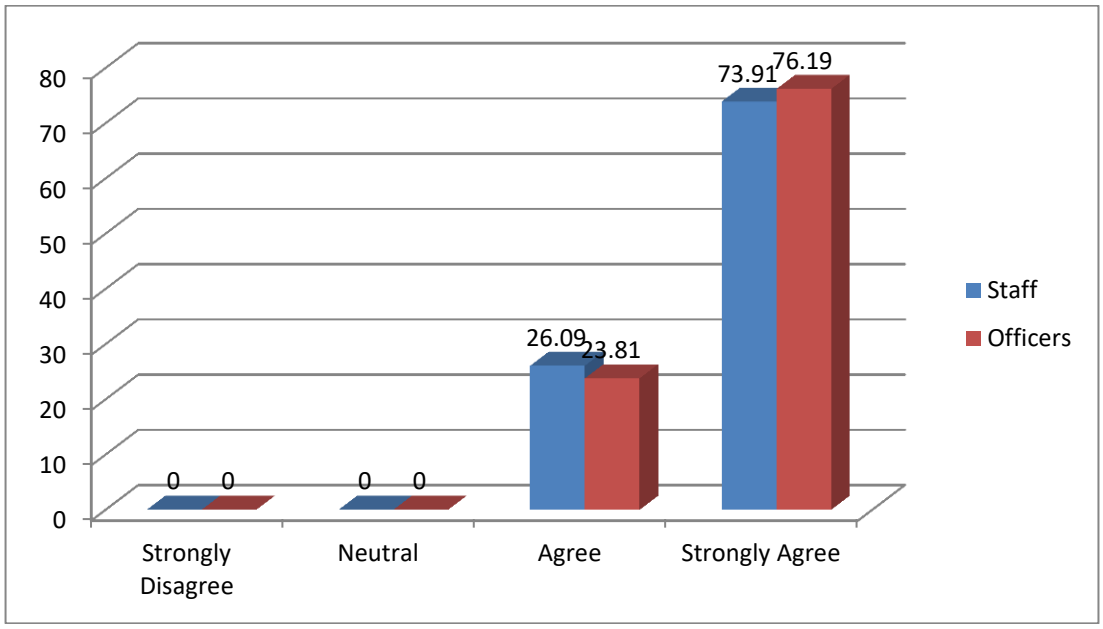
The opinion of staff and officers on various qualities of HMIS produced information like accuracy, timeliness, completeness; relevancy etc. is taken and presented as given below.

3.1.1 Accuracy of HMIS produced information:

The current table shows comparative opinion of staff and officers for information being accurate.

HMIS produced information is accurate	**Staff**		**Officers**		**Total**	
	Count	%	Count	%	Count	%
Strongly Disagree	0	0.00	0	0.00	0	0.00
Neutral	0	0.00	0	0.00	0	0.00
Agree	24	26.09	5	23.81	29	25.66
Strongly Agree	68	73.91	16	76.19	84	74.34
Total	92	100	21	100	113	100.00

Table 1: Accuracy of HMIS produced information



Graph 1: Accuracy of HMIS produced information

H_0: Staff and Officers do not differ significantly in their opinion for information being Accurate.
H_a: Staff and Officers differ significantly in their opinion for information being Accurate.

	Value	df	p-value
Pearson Chi-Square	0.046	1	1.000
N of Valid Cases	113		

Table 2: Test statistics - accuracy of HMIS

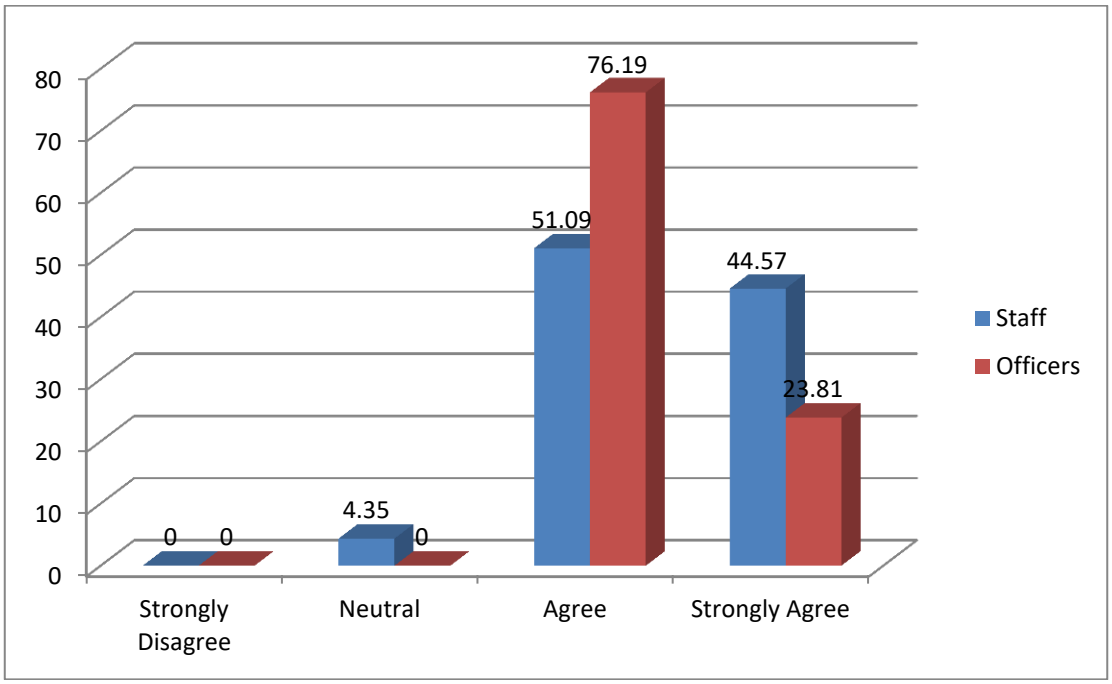
Interpretations: The calculated Chi-square value (0.046) is less than its table value (5.02) and p-value > 0.025 at 5% level of significance. Hence it provides sufficient evidence to accept the null hypothesis and conclude that staff and officers do not differ significantly in their opinion for information being accurate.
The table 2 and graph 1 indicates that 73.91% of staff and 76.19% of officers strongly agree for information being accurate.

3.1.2 Completeness of HMIS produced information:

The current table shows comparative opinion of staff and officers for information being complete.

HMIS produced information is Complete	Staff		Officers		Total	
	Count	%	Count	%	Count	%
Strongly Disagree	0	0.00	0	0.00	0	0.00
Neutral	4	4.35	0	0.00	2	1.77
Agree	47	51.09	16	76.19	66	58.41
Strongly Agree	41	44.57	5	23.81	45	39.82
Total	92	100	21	100	113	100.00

Table 3 Completeness of HMIS produced information



Graph 2: Completeness of HMIS produced information

H_0: Staff and Officers do not differ significantly in their opinion for information being complete.
H_a: Staff and Officers differ significantly in their opinion for information being complete.

	Value	df	p-value
Pearson Chi-Square	4.655	2	0.102
N of Valid Cases	113		

Table 4: Test statistics – completeness of HMIS

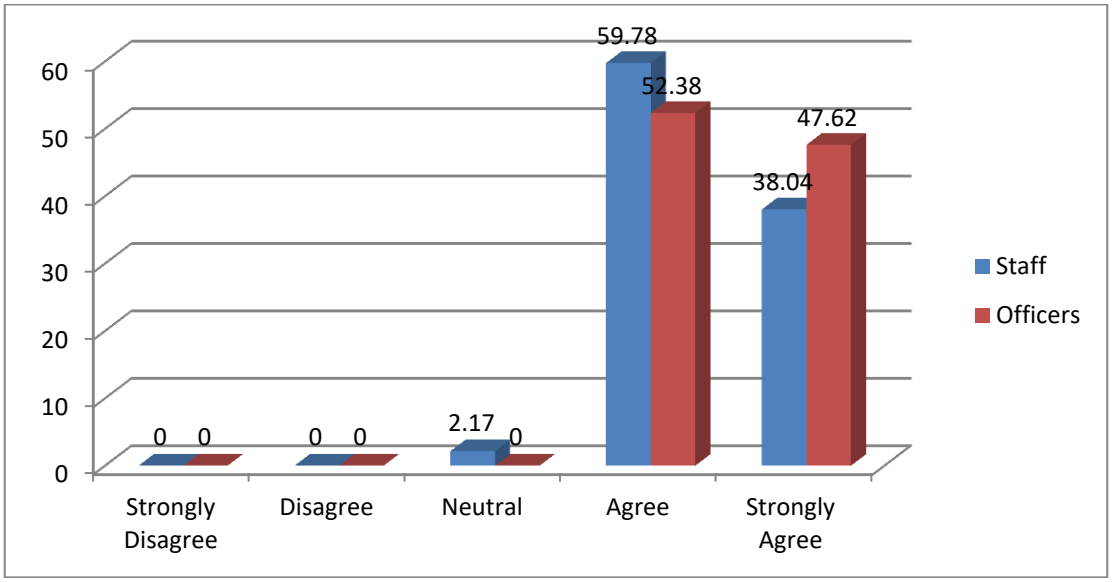
Interpretations: The calculated Chi-square value (4.655) is less than its table value (7.38) and p-value > 0.025 at 5% level of significance. Hence it provides sufficient evidence to accept the null hypothesis and conclude that staff and officers do not differ significantly in their opinion for information being complete.
The table 3 and graph 2 indicates that 51.09% of staff and 76.19% of officers agreed for information being complete.

3.1.3 Timeliness of HMIS produced information:

The current table shows comparative opinion of staff and officers for information being timely.

HMIS produced information is timely	Staff		Officers		Total	
	Count	%	Count	%	Count	%
Strongly Disagree	0	0.00	0	0.00	0	0.00
Disagree	0	0.00	0	0.00	0	0.00
Neutral	2	2.17	0	0.00	2	1.77
Agree	55	59.78	11	52.38	66	58.41
Strongly Agree	35	38.04	10	47.62	45	39.82
Total	92	100	21	100	113	100.00

Table 5: Timeliness of HMIS produced information



Graph 3: Timeliness of HMIS produced information

H_0: Staff and Officers do not differ significantly in their opinion for information being timely.
H_a: Staff and Officers differ significantly in their opinion for information being timely.

	Value	df	p-value
Pearson Chi-Square	1.011	2	0.750
N of Valid Cases	113		

Table 6: Test statistics – timeliness of HMIS

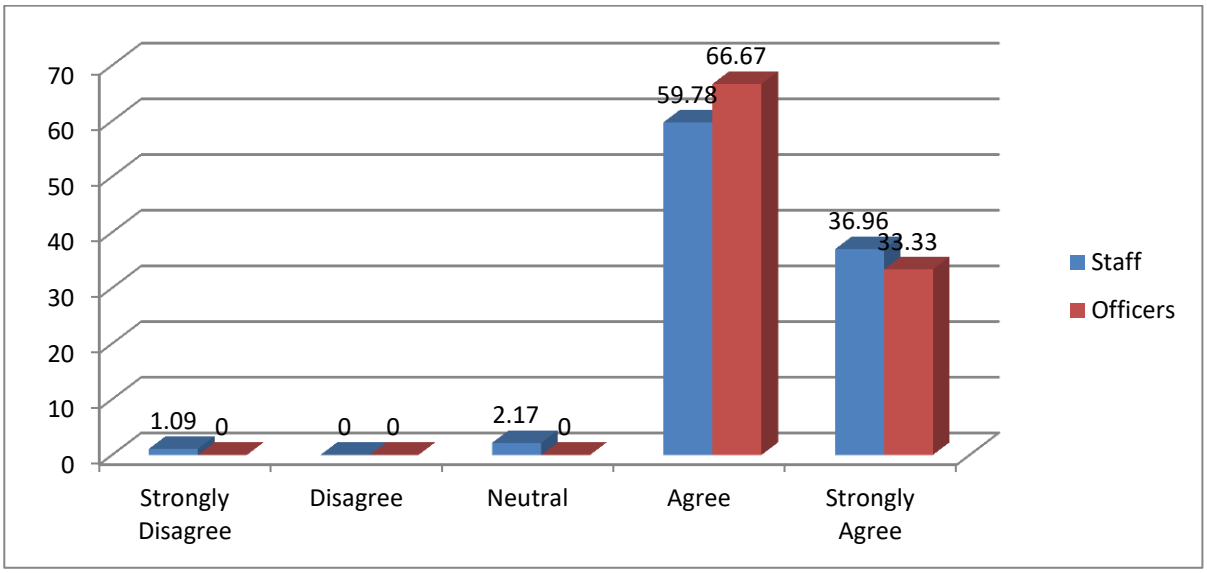
Interpretations: The calculated Chi-square value (1.011) is less than its table value (7.38) and p-value > 0.025 at 5% level of significance. Hence it provides sufficient evidence to accept the null hypothesis and conclude that staff and officers do not differ significantly in their opinion for information being timely.
The table 5 and graph 3 indicates that 59.78% of staff and 52.38% of officers agree for information being timely.

3.1.4 Relevancy of HMIS produced information:

The current table shows comparative opinion of staff and officers for information being relevant.

HMIS produced information is relevant	Staff		Officers		Total	
	Count	%	Count	%	Count	%
Strongly Disagree	1	1.09	0	0.00	1	0.88
Disagree	0	0.00	0	0.00	0	0.00
Neutral	2	2.17	0	0.00	2	1.77
Agree	55	59.78	14	66.67	69	61.06
Strongly Agree	34	36.96	7	33.33	41	36.28
Total	92	100	21	100	113	100.00

Table 7: Relevancy of HMIS produced information



Graph 4: Relevancy of HMIS produced information

H_0: Staff and Officers do not differ significantly in their opinion for Information being relevant.
H_a: Staff and Officers differ significantly in their opinion for Information being relevant

	Value	df	p-value
Pearson Chi-Square	0.879	3	0.895
N of Valid Cases	113		

Table 8: Test statistics – relevancy of HMIS

Interpretations: The calculated Chi-square value (0.879) is less than its table value (9.35) and p-value > 0.025 at 5% level of significance. Hence it provides sufficient evidence to accept the null hypothesis and conclude that staff and officers do not differ significantly in their opinion for relevancy of HMIS information.
The table 7 and graph 4 indicates that 59.78% of staff and 66.67% of officers agree for information being relevant.

3.1.5 Ranking of quality factor of HMIS:

The current table shows ranking of HMIS quality factors based on the strongly agree opinion given by staff and officers.

Sr. No.	HMIS produced information is	Staff		Officers		Total	
		Count	Ranking	Count	Ranking	Count	Ranking
1	Accurate	68	1	16	1	84	1
2	Complete	41	2	5	4	46	2
3	Timely	35	3	10	2	45	3
4	Relevant	34	4	7	3	41	4

Table 9: Ranking of HMIS quality factors

Interpretations: Table 9 indicates that all the staff and officers are commonly agree on the accuracy being most important quality factor of HMIS produced information as its rank is first. But there is difference in ranking of other quality factors according to staff and officers perspectives respectively.

4. Observations, Findings & Suggestions

1. It is observed that all the staff and officers commonly agree on the accuracy being most important quality factor of HMIS produced information as its rank is first

among 4 (four) quality factors of HMIS produced information i.e. accuracy, completeness, timeliness and relevancy.

2. It is suggested that, staff and officers of the health centers and health offices should use and increase the quality of data gathering. It is also suggested to de-centralize data entry and to reduce duplication of information gathering by sharing common information and data access at different levels of health units. It is suggested to give data access at different levels of health units of the government for decision making and deciding further health policies for further health programs of the government.
3. It is suggested based on the observations made during the study that manual system of evaluation of health indicators should be replaced by HMIS to increase accuracy of current evaluation system. The data should be integrated through HMIS which is generated at various levels of health units i.e. health service providers like SC, PHC, THO, DHO etc. and the information generated by the system after processing of the data should be used for improving health services of the rural people.
4. It is suggested to provide health care data which is generated by HMIS, creation and management of a comprehensive knowledge database, provide IT support to enable government health program and to improve effectiveness of existing public health system in rural area.

5. Conclusion

Rural development is a continuous process that requires several accomplishments. In the process, a large number of inaccessible geographic areas must be covered, a large number of volunteers must be assigned, and most importantly, their work must be overseen. ICT could be useful in this situation for data processing, monitoring, and consolidation. This may significantly lessen the amount of labour required in inaccessible places. By providing quicker and simpler services for data collecting, reporting, comparison, processing, and implementation, the HMIS supports the health sector as a whole.

Based on the study's conclusions, it is recommended that HMIS be used in place of the manual system currently in place for evaluating health indicators in order to improve its accuracy. The information produced by the system after processing the data should be used to improve the health services provided to rural residents. The data should be integrated through HMIS, which is created at various levels of health units, i.e. health service providers like SC, PHC, THO, DHO, etc.

The provision of health care data produced by HMIS, the building and administration of an extensive knowledge base, the provision of IT assistance to enable government health programs, and the enhancement of the efficacy of the current public health system in rural areas are all recommended. Since accuracy ranks highest among the four (four) quality elements of HMIS-produced information—completeness, timeliness, relevancy, and accuracy—it is the most significant quality component.

6. References

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