COMPARATIVE STUDY OF HMIS MANAGEMENT TOOLS WITH REFERENCE TO SANGLI DISTRICT

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The healthcare segment is one challenge for the Information Technology (IT). In the health sector, Health Management Information System (HMIS) come handy with monitoring and improving the quality and network of Health services. The usability of HMIS to support District Health System (DHS) is affected by lot of basic issues like meeting user needs in use of information for management etc.[6].

The methodology adopted is a mixture of literature review, document analysis, questionnaires and discussions with staff and officers of health centers in Sangli district. The data collected at primary and secondary level is processed by tabulation, coding and analysis using various statistical methods as required. Based on the analysis further recommendations and conclusions are given.

Researcher has taken opinion on various management tools like decision making, planning, controlling, monitoring and evaluating, directing and analyzing which are provided by HMIS. From the comparative study of staff and officers for each management tool it is observed that the monitoring and evaluating is better management tool of HMIS.

***Key Words**: Information Technology, Health Management Information System (HMIS), Health Centers, Management Tools, Health Services.*

I. INTRODUCTION

India has taken a big leap with I.T. The National Informatics Centre (NIC) has effectively taken PC to every district in the country easing government level interactions and communication processes. The internet comes further handy in circulating information even to villages. Rural education, health and agricultural system are really blooming under the I.T cover.

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. In the health sector, Information systems come handy with monitoring and improving the quality and network of Health services.

The Internet would help reaching the masses in spreading healthcare and self care awareness. The government has had a breather by Internet offering a speedy way to cost cutting and at the same time efficiency in health care delivery.

Health Management Information Ssystem (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 [6].

Restructuring the system has been a continuous process, but a need for a standard HMIS is felt. Many academicians and practitioners are continuously striving for a standard HMIS which could be used across all situations. However for designing of HMIS it is mandatory to understand the management tools of HMIS. The main obejctives of HMIS are Empowering individuals and communities with timely and understandable health-related information, monitor progress towards health goals and drive improvements in quality of services.

II. SCOPE OF STUDY

- This study is restricted to Sangli district in Maharashtra state. The area marked for research is Sangli district geographically placed in the southern part of Maharashtra and is bordered by Satara and Sholapur districts on the north, Karnataka State and Bijapur district in the east, Kolhapur and Belgaum to the south and Ratnagiri to the west [6].
- Zilla Parishad is the local self authority for district level responsible for implementing health programs and running health facilities over a spread of 10 blocks and 320 sub centers [6].
- The 10 blocks are further divided in to 724 villages and 705 Gram Panchayat villages [6].

- The usability of HMIS to support District Health System (DHS) is affected by lot of basic issues like meeting user needs in use of information for management; and the need for assimilating data from all health related organizations in the district [6].

III. RESEARCH METHODOLOGY ADOPTED

The methodology adopted is a mixture of literature review, document analysis such as government gazettes, interview with staff and officers of health centers, monthly and yearly reports of Sub Centers (SC) and Primary Health Centers (PHC) as well as Taluka Health Office (THO) & District Health Office (DHO) to understand the role and management tools of HMIS. This learning was supplemented with questionnaires and discussions with various users of HMIS such as Anti Natal Mother (ANM), Data Entry Operator (DEO), Health Assistant (HA), Medical Officer (MO), Taluka Health Officer (THO), District Health Officer (DHO) etc.

The researcher has prepared two questionnaires one for staff and one for officers. The data collected at primary and secondary level is processed by tabulation, coding and analysis using various statistical methods as required. Based on the analysis further recommendations and conclusions are given.

IV. HMIS - MANAGEMENT TOOLS

Researcher has taken opinion on various management tools like decision making, planning, controlling, monitoring and evaluating, directing and analyzing which are provided by HMIS. Comparative analysis of staff and officers for each management tool as well as test statistics for each tool is given below.

1) Decision making:

The current table shows comparative analysis on opinion of staff and officers of health centers regarding HMIS provides better management tool for decision making.

Table 2: Management tool - decision making

HMIS provides better management tool for decision making	**Staff** %	**Officers** %	**Total** %
Strongly Disagree	0.00	0.00	0.00
Disagree	0.00	0.00	0.00
Neutral	6.52	0.00	5.31
Agree	69.57	52.38	66.37
Strongly Agree	23.91	47.62	28.32
Total	100.00	100.00	100.00

H_0: Staff and Officers do not differ significantly in their opinion that HMIS provides better management tool for decision making.

H_a: Staff and Officers differ significantly in their opinion that HMIS provides better management tool for decision making.

Table 3: Test statistics - Decision making

	Value	**df**	**p-value**
Pearson Chi-Square	5.523	2	0.0253
N of Valid Cases	113		

Interpretations: The calculated Chi-square value (5.523) 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 that HMIS provides better management tool for decision making.

As shown in table 2 it is found that 69.57% staff and 52.38% officers agree that HMIS provides better management tool for decision making.

2) Planning:

The current table shows comparative analysis on opinion of staff and officers of health centers regarding HMIS provides better management tool for planning.

Table 4: Management tool – Planning

HMIS provides better management tool for Planning	**Staff**	**Officers**	**Total**
	%	%	%
Strongly Disagree	0.00	0.00	0.00
Disagree	0.00	0.00	0.00
Neutral	0.00	9.52	1.77
Agree	58.70	57.14	58.41
Strongly Agree	41.30	33.33	39.82
Total	100.00	100.00	100.00

H_0: Staff and Officers do not differ significantly in their opinion that HMIS provides better management tool for Planning.

H_a: Staff and Officers differ significantly in their opinion that HMIS provides better management tool for Planning.

Table 5: Test statistics – Planning

	Value	**df**	**p-value**
Pearson Chi-Square	9.042	2	0.015
N of Valid Cases	113		

Interpretations: The calculated Chi-square value (9.042) is greater than its table value (7.38) and p-value < 0.025 at 5% level of significance. Hence it provides sufficient evidence to reject the null hypothesis and conclude that Staff and Officers differ significantly in their opinion that HMIS provides better management tool for planning.

The table 4 indicates that 58.7% staff and 57.14% officers agree that HMIS provides better management tool for planning.

3) Controlling:

The current table shows comparative analysis on opinion of staff and officers of health centers regarding HMIS provides better management tool for controlling.

Table 6: Management tool - Controlling

HMIS provides better management tool for controlling	**Staff**	**Officers**	**Total**
	%	%	%
Strongly Disagree	0.00	0.00	0.00
Disagree	0.00	0.00	0.00
Neutral	3.26	9.52	4.42
Agree	76.09	85.71	77.88
Strongly Agree	20.65	4.76	17.70
Total	100.00	100.00	100.00

H_0: Staff and Officers do not differ significantly in their opinion that HMIS provides better management tool for controlling.

H_a: Staff and Officers differ significantly in their opinion that HMIS provides better management tool for controlling.

Table 7: Test statistics – Controlling

	Value	**df**	**p-value**
Pearson Chi-Square	4.158	2	0.064
N of Valid Cases	113		

Interpretations: The calculated Chi-square value (4.158) 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 that HMIS provides better management tool for controlling.

The table 6 indicates that 76.09% staff and 85.71% officers agree that HMIS provides better management tool for controlling.

4) Monitoring and evaluating:

The current table shows comparative analysis on opinion of staff and officers of health centers regarding HMIS provides better management tool for monitoring and evaluating.

Table 8: Management tool – Monitoring and evaluating

HMIS provides better management tool for Monitoring and evaluating	**Staff**	**Officers**	**Total**
	%	%	%
Strongly Disagree	0.00	0.00	0.00
Disagree	0.00	0.00	0.00
Neutral	0.00	0.00	0.00
Agree	40.22	28.57	38.05
Strongly Agree	59.78	71.43	61.95
Total	100.00	100.00	100.00

H_0: Staff and Officers do not differ significantly in their opinion that HMIS provides better management tool for Monitoring and Evaluating.

H_a: Staff and Officers differ significantly in their opinion that HMIS provides better management tool for Monitoring and evaluating.

Table 9: Test statistics – Monitoring and evaluating

	Value	**df**	**p-value**
Pearson Chi-Square	0.984	1	0.228
N of Valid Cases	113		

Interpretations: The calculated Chi-square value (0.984) 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 that HMIS provides better management tool for monitoring and evaluation.

The table 8 indicates that 59.78% staff and 71.43% officers strongly agree that HMIS provides better management tool for controlling. This result indicates that HMIS provides better management tool for monitoring and evaluation health programs among five management tools.

5) Directing and analyzing:

The current table shows comparative analysis on opinion of staff and officers of health centers regarding HMIS provides better management tool for directing and analyzing.

Table 10: Management tool – Directing and analyzing

HMIS provides better management tool for directing and analyzing	**Staff**	**Officers**	**Total**
	%	%	%
Strongly Disagree	0.00	0.00	0.00
Disagree	0.00	0.00	0.00
Neutral	0.00	9.52	1.77
Agree	51.09	19.05	45.13
Strongly Agree	48.91	71.43	53.10
Total	100.00	100.00	100.00

H_0: Staff and Officers do not differ significantly in their opinion that HMIS provides better management tool for directing and analyzing.

H_a: Staff and Officers differ significantly in their opinion that HMIS provides better management tool for directing and analyzing.

Table 11: Test statistics – Directing and analyzing

	Value	**df**	**p-value**
Pearson Chi-Square	14.283	2	.0005
N of Valid Cases	113		

Interpretations: The calculated Chi-square value (14.283) is greater than its table value (7.38) and p-value < 0.025 at 5% level of significance. Hence it provides sufficient evidence to reject the null hypothesis and conclude that Staff and Officers differ significantly in their opinion that HMIS provides better management tool for directing and analyzing.

The table 10 indicates that 51.09% staff agrees and 71.43% officers strongly agree that HMIS provides better management tool for directing and analyzing.

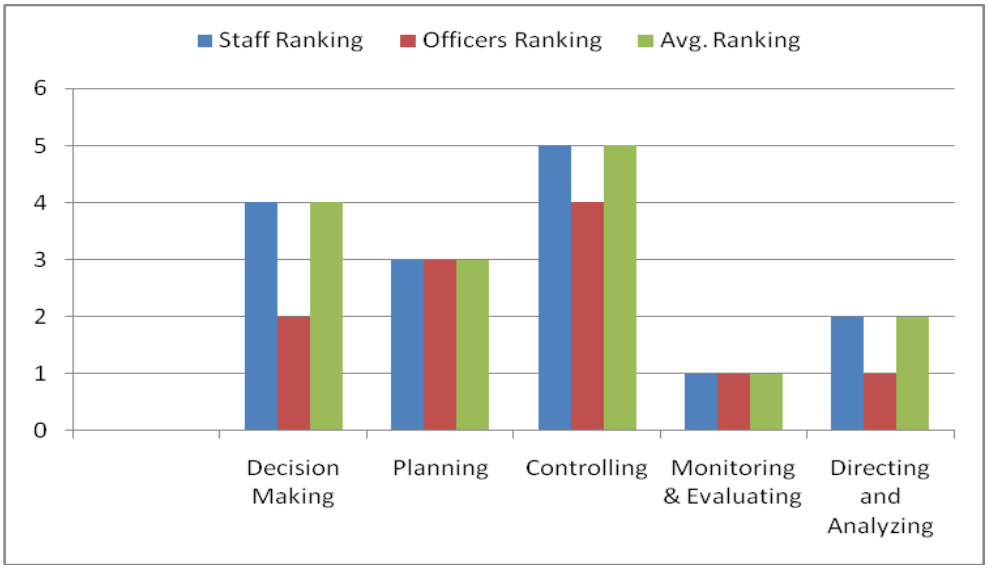
V. RANKING OF HMIS MANAGEMENT TOOLS

The table 12 shows comparative analysis of opinion given by staff and officers of health centers regarding ranking of better management tool.

Table 12: Ranking of management tools

Sr. No.	Management Tool	Staff	Officers	Total
		Ranking	Ranking	Ranking
1	Decision Making	4	2	4
2	Planning	3	3	3
3	Controlling	5	4	5
4	Monitoring & Evaluating	1	1	1
5	Directing and Analyzing	2	1	2

Graph 1: Management tools - Ranking



Interpretations: The table 12 and graph 1 indicates that monitoring & evaluating is better management tool which is provided by HMIS, as it ranks first according to staff & officers perspectives. But according to officers perspectives the monitoring and evaluating and directing & analyzing these both management tools of HMIS are equally important as both of these tools rank first in officers ranking column in above table.

VI. FINDINGS

The observations and findings drawn from comparative study of opinion of staff and officers on HMIS and its different management tools like decision making, planning, controlling, monitoring and evaluating, directing and analyzing etc. are given below:

1. It is observed that 69.57% staff and 52.38% officers agree that HMIS provides better management tool for decision making.
2. It is found that the HMIS provides better management tool for planning as 58.7% staff and 57.14% officers agree with this.
3. It is observed that the 76.09% staff and 85.71% officers agreeing that HMIS provides better management tool for controlling. As compared to other management tools it is very important tool provided by HMIS.
4. It is found 59.78% staff and 71.43% officers strongly agreed that HMIS provides better management tool for monitoring and evaluating.
5. It is observed that 51.09% staff agree and 71.43% officers strongly agree that HMIS provides better management tool for directing and analyzing. As the analysis and the direction to the staff of health centers are given at officer's level, there is more percentage [71.43%] of the officers those who strongly agree as compared to staff that HMIS is better management tool for directing and analyzing.
6. On the basis of the analysis done for ranking of better management tool provided by HMIS it is observed that the monitoring and evaluating is better management tool of HMIS, as it ranks first according to staff and officer's perspectives. But according to officers perspectives the monitoring and evaluating and directing and analyzing these both management tools of HMIS are equally important as both of these tools rank first.

VII. CONCLUSION

On the basis of the data and reports generated by the HMIS, the different authorities of the health centers and health offices can take decision for further improvement of health programs. The HMIS gives the information on various aspects, so it is used for future planning of health programs and health services.

It is revealed by the study that HMIS provides better management tool for monitoring and evaluation of health programs as compared to other management tools provided by HMIS. It is suggested based on the observations made during the study that better management tools provided by HMIS are monitoring and evaluating, directing and

analyzing should be used for monitoring and evaluation of health programs and directing and analyzing health services provided by health service providers.

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