

# Assessment of Knowledge, Attitude and Practices of Health Workers on Routine Data Reporting at two Public Hospitals in Namibia

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## Abstract

**Background:** The study purpose was to assess knowledge, attitudes and practices of healthcare workers on data routine reporting where doctors and nurses from Walvis Bay and Windhoek central hospitals were participants. The aim of the study was to evaluate healthcare workers' knowledge, attitudes, and practice regarding routine data reporting.

**Method:** A cross-sectional study was conducted and quantitative method was used for data collection. Probability sampling method was used to randomly draw a sample size of 102, where 51 participants were drawn from each hospital. Respondents were given self-administered structured questionnaires, and data were analyzed using google forms and Microsoft excel. The data were compiled and summarized using cross-tabulations.

**Results:** The results indicated that among 102 respondents, the majority of respondents (n=59; 58%) were aware of the key components of data routine reporting and more than half of the respondents (n=75; 74%) have knowledge of what data routine reporting is. Workload was one of the contributors which are the highest chosen as more than 44% of healthcare workers complain of time constraints due to workload. 39% of healthcare workers indicated that they had not received proper training on the data reporting system and more than half 63% were not trained occasionally.

**Conclusion:** HCWs from both hospitals showed an excellent level of knowledge and practice toward reporting however, bad attitude was determined to be their main weakness. Finally, occasional training and hiring administrators were highly recommended.

**Keywords:** Routine Health Information Systems (RHIS) • Epidemiologic • Knowledge • Illustrated • Electronic health

## Introduction

### Background

There are frequently gaps in the recording, reporting, and efficient use of data in issue solving in many Routine Health Information Systems (RHIS). Strengthening RHIS has emerged as a global priority for tracking and addressing national health goals. Regularly collected health data are those that are gathered either without particular a priori research objectives developed before to collection or for non-research purposes. Examples include epidemiologic surveillance systems, health administrative data, illness registries,

and clinical data from electronic health records. The veracity of these facts is still in question, though [1].

These various initiatives and reforms have primarily been implemented at the operational level of the health system (health district), and include both health system capacity strengthening and disease specific control programs. It is critical to obtain estimates from the analysis and interpretation of quality routine data for rational planning, appropriate resource allocation, evidence based policy making, effective monitoring of health service delivery, and policy evaluation in order to continuously build and sustain good health system management. In June 2007, all countries were required to develop and keep surveillance, verifications, reporting and response mechanisms at local, intermediate, and national level.

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Routine data reporting is essential for day to day patients' management, health education, diseases prioritization, and allocation of resources and decision making. Poor data routine reporting in hospitals reduces realistic of data, which affect both the community and decision makers. A study conducted by Parrella, et al. also illustrated that poor data routine reporting is caused by barriers such as lack of knowledge, practices and negative attitudes toward reporting process. Bawa, Olumide and Uman added that lack of understanding of reporting requirements was highlighted as a major determinant factor routine reporting. Furthermore, they added that training of health care workers responsible for routine reporting in health facilities are recommended in order to improve routine reporting [2].

Another study conducted in South Eastern state, Nigeria by Iwu, et al. stated that major challenge health care worker care facing is lack of training, lack of equipment, and inadequate supply of forms were the existing limitations that prevented the practice of routine reporting. In addition, a lack of feedback, low employee motivation, and bad supervision are all issues. Namibia ministry of health and social services, the report of 2012 stressed that, compliance with the ministry's programmed continued to be consistently low, particularly with regard the routine of data reporting. Contrary to this background the researchers conducted the study to assess the knowledge, attitude and practices of health care workers on routine data reporting [3].

## Materials and Methods

The study aimed at assessing the knowledge, attitude and practices of health care workers on routine data reporting at the two hospitals to improve the low compliance in reporting within the MoHSS. The study had three objectives:

- To assess health care workers' knowledge on data routine reporting.
- To determine health care workers' attitudes towards data routine reporting.
- To identify practices contributing to poor routine data reporting.

### Study area

The research was conducted in the different two hospitals in Namibia. A quantitative approach design was used. Baker and Filder outlined that sampling is referred to a process by which a collection of respondents, behaviors, events or any other studied objects that are required to conduct a study are selected in case it is impossible to study the entire the population. The sample size consists of 24 doctors and 144 were nurses.

Mwatondo, et al. described data collection method as the process of gathering information/data from the set of selected/sampled respondents of the study. Data was collected using self-administered

structured questionnaires that consisted of close-ended questions, open-ended questions, and link list questions. Data was analyzed using google forms and excel spreadsheet. Descriptive statistics were used to describe the data. Cross-tabulations were used to summarize the data towards accomplishment of the study's aim [4].

## Results

### Demographic data (N=102)

**Age:** The Table 1 indicates the age interval of the respondents who took part in the research. At least 54% of the respondents were in the 20-29 age range, 34% were in the 30-39 age range, 6% were in the 40-49 age range, 4% were in the 50-59 age range, and 20 and 60 + had 2% and 0%, respectively. This suggests that the age range of the study's respondents, who made up the majority, was 20 to 29.

**Sex:** As indicated in the Table 1, male respondents were 56 (55%) and female were 46 (45%). The data indicated that more male population participated in the study compared to female population.

**Marital status:** In the below Table 1, is shows that 70 (69%) respondents in this study were single, 30 (29%) were married and 1 (1%) belong to others. This shows that more single respondents took part in the study.

**Level of education:** Regarding the level of education of respondents, majority of the health care workers (n=67; 66%) had degrees, followed by (n=12; 12%) who had diploma and certificates, then, (n=8; 7%) who had master's degree and the least was (n=3; 3%) those with PhD.

**Working experience:** As for the work experience, the Table 1 indicated that more respondents (n=40; 39, 3) their work experience ranged between 2-3 years, followed by (n=17; 16.7%) who worked <2 years, (n=9; 8.9%) worked for 6-7 years, (n=7; 6.9%) worked for 10 years and above and only (n=6; 5.9%) worked for 8-9 years.

**Professions:** As shown in the Table 1 below, most of the respondents were nurses, having been represented by 86 (84.3%). The rest of the respondents were doctors represented by 16 (15.7%) responses.

**Training on data routine reporting:** The below Table 1 shows that (n=69; 67.6) of the respondents have been trained on data routine reporting, while (n=33; 32.4%) have not been trained.

**When were you trained?:** Based on the results on Table 1, more (n=38; 37.3%) respondents indicated they were trained occasionally, (n=32; 31.4%) respondents were trained at the beginning only, (n=7; 6.9) were trained after a year and quarter of the respondents were never trained [5].

Questions	Variance	Frequency	Percentage
Age	<20	4	3%
	20-29	54	53%
	30-39	34	33%
	40-49	6	6%

	50-59	4	3%
	60+	0	0%
Gender	Male	56	55%
	Female	46	45%
Marital status	Single	70	69%
	Married	30	29%
	Other	2	2%
Level of education	PhD	3	3%
	Masters' degree	8	7%
	Degree	67	66%
	Diploma	12	12%
	Certificate	12	12%
Working experience	<2	17	17%
	2-3	40	39%
	4-5	23	23%
	6-7	9	9%
	8-9	6	6%
	10+	7	7%
Professions	Doctor	16	16%
	Nurses	86	84%
Trained on data reporting	Yes	69	68%
	No	33	32%
When were you trained	At the beginning only	32	31%
	After a year	7	7%
	Occasionally	38	37%
	Never trained	25	25%

**Table 1.** Shows demographic information of respondents.

### Knowledge of health professional on routine data reporting

The understanding of health professionals on routine data reporting is reported in this section B. The segment consists of a total of 16 questions that evaluate the expertise of healthcare professionals about routine reporting of data. There are four open ended questions, seven closed ended questions, and six likert scale questions.

### Open ended questions, responses from healthcare worker regarding their knowledge on routine data reporting

The information from open ended questions on health care workers' knowledge on routine data reporting is summarized in the Table 2 below.

Most of the respondents 66 (64.7%) said that communicable diseases are the data that are expected to be reported, and the majority of them n=87; 85.3% said that they obtain the data for reporting from registers and tally sheets. Less than 15 of the healthcare professionals identified their coworkers (n=13; 12.7%) and other (n=2; 2%) as their data sources, despite the fact that (n=9; 8.8) of them mentioned that data on communicable diseases are anticipated to be reported [6].

More than half of respondents (n=58; 57%) said that it is very easy to obtain data reporting sources, 43% said it is sometimes difficult to do so, and 1 said it is impossible. When asked how often do they think data routine reporting should be done, more people (n=32; 31%) chose weekly, followed by (n=27; 26.7%) who chose both daily and monthly reporting, and (n=2; 2%) who chose alternative options.

Question		Response (n)	Percentage %	
2.1	What type of data is you expected to report?	Communicable diseases	66	65%
		Non-communicable diseases	9	9%
		Any other data	27	27%
2.2	Where do you get data that you are expected to report routinely?	Colleagues	13	13%
		Registers and tally sheets	87	85%
		Others	2	2%
2.3	How accessible are the reporting sources of data?	Very accessible	58	57%
		Not always accessible	43	42%
		Not accessible at all	1	2%
2.4	How often do you think data routine reporting should be done?	Daily	27	28%
		Weekly	32	31%
		Monthly	27	27%
		Quarterly	14	14%
		Others	2	2%

**Table 2.** Open-ended questions, responses from healthcare workers on data routine reporting.

**Closed ended questions, responses from healthcare worker regarding their knowledge on routine data reporting**

Table 3 reveals that (n=75; 74%) of respondents said they have an idea about data routine reporting, whereas (n=27; 27%) of respondents said they had no understanding about data reporting. Only (n=59; 59%) of individuals with an idea on data reporting are aware of the most crucial part of data quality, while (n=43; 42%) are unaware of the crucial elements of routine reporting's data quality.

Respondents reported that (n=81; 79%) knew when to report, whereas (n=21; 21%) do not. Only (n=75; 74%) of the 91 (89%) respondents know if there is a specific channel for reporting. The remaining 11 (11%), along with 27 (27%), have no idea where to report or if there is a particular route for reporting. Only (n=23; 23%) of the n=102 respondents are unaware of the significance of reporting, whereas (n=62; 61%) of respondents have knowledge of data reporting duties [7].

Indicate your opinions regarding the following statements:		Yes	No	
<b>Questions</b>				
2.5	Do you know or have an idea what is data routine reporting?	N	75	27
		%	74%	26%
2.6	Do you know the most important data quality aspects of routine reporting?	N	59	43
		%	58%	42%
2.7	Do you know when are you expected to report your data?	N	81	21
		%	79%	21%
2.8	Do you know where to report?	N	91	11
		%	89%	11%
2.9	Is there a specific channel/route for data reporting?	N	75	27
		%	74%	26%

2.1	Do you have knowledge about routine N data reporting obligations?	N	62	40
		%	61%	39%
2.11	Are you aware of the importance of N routine data reporting?	N	79	23
		%	77%	23%

**Table 3.** Closed ended questions, responses from healthcare workers on data routine reporting.

**Liker scale questions on knowledge of healthcare workers on data routine reporting**

Based on a four level likert scale, Table 4 shows the information gathered from respondents about healthcare workers' awareness of routine data reporting.

The chart demonstrates that the majority of respondents (n=100; 98%) indicated that they agreed on reporting, with 32% agreeing that it is crucial to share data and 66% strongly agreeing. Since more than half of respondents agreed or strongly agreed with each statement in this Table 4, it really demonstrates a favourable result for the expertise of healthcare professionals [8].

			Strongly disagree (1)	Disagree (2)	Agree (3)	Strongly agree (4)
2.12	It is important to report routine data	N	1	1	33	67
		%	2%	2%	32%	66%
2.13	There is a routine of data in the hospital	N	3	9	53	37
		%	3%	9%	52%	36%
2.14	Anyone has a responsibility of routine data reporting regardless of the position	N	10	20	41	31
		%	10%	20%	40%	30%
2.15	Compliance to routine data reporting will help timely Mohs response	N	12	2	28	59
		%	12%	2%	27%	58%
2.16	Quality data reporting is essential in decision making in health sector	N	1	1	22	78
		%	2%	2%	22%	76%

**Table 4.** Shows knowledge of healthcare workers on routine data reporting.

**Attitudes of health professional on routine data reporting**

The attitudes of health professionals on routine data reporting are reported in this section C. The segment consists of a total of 13 questions that evaluate the attitudes of healthcare professionals about routine reporting of data. There are two open ended questions, five closed ended questions, and six likert scale questions.

Table 5 shows that the majority of respondents (n=44; 43%) cited having a high level of workload as a major cause of inaccurate or

delayed reporting. Additionally, more than half of the respondents (59) advocated for hiring more staff; specifically, (n=15; 14%) advocated for hiring more nurses, (n=19; 19%) advocated for hiring more administrative staff to handle paperwork, and (n=25; 25%) advocated for hiring more HIS officers. Additionally, respondents (n=39;38%) and (n=43;42%) who advised greater training on routine data reporting ranked lack of reporting knowledge as the second-highest contributing cause. One healthcare worker mentioned other factors, and 7 respondents cited an excessive number of reporting channels as a significant factor [9].

**Open-ended questions, responses from healthcare workers on routine data**

Question	Response (n)	Percentage %
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3.1	What are the contributing factors to misreporting or late reporting	Lack of knowledge on reporting	39	38%
		Too much responsibilities	44	43%
		Think is not necessary	7	7%
		Too many reporting channels	11	11%
		Others	1	1%
3.2	What do you think can be done to improve data routine reporting	More training on routine data reporting	43	42%
		More nurses to be employed	15	14%
		Employ an admin for paperwork	19	19%
		Employ more HIS officers	25	25%

**Table 5.** Attitudes of healthcare workers on routine data reporting on open-ended questions.

More healthcare professionals (n=77; 75%) said they did not believe reports were sent on time, compared to only (n=60; 59%) who believed the ministry's channels did not cause delays in routine reporting. Over 50 respondents (n=53; 54%) said they didn't think the data sources were good enough to produce comprehensive and

timely reports (Table 6). However, less than a quarter of healthcare workers (n=21; 21%) do not know where or how to extract data, whereas more (n=81; 79.4%) do. Health care professionals have a high level of confidence in the ministry of health's ability to improve routine data reporting, as evidenced by the 82 respondents who gave a positive response and the 20 who did not [10].

Indicate your opinions regarding the following statements		Yes	No	
<b>Questions</b>				
3.3	Do you think reports are being submitted on the expected time?	N	25	77
		%	25%	75%
3.4	Do you think reporting channels employed by ministry causes delay in routine data reporting?	N	42	60
		%	41%	59%
3.5	Do you think data sources are of quality to compile complete and timely reports?	N	47	53
		%	46%	54%
3.6	Do you know where and how to extract data necessary to compile your reports?	N	81	21
		%	79%	21%
3.7	Are you confident that the ministry of health can improve data routine reporting in Namibia?	N	82	20
		%	80%	20%

**Table 6.** Attitudes of Healthcare workers on routine data reporting on closed-ended questions.

Respondents' opinions on the data report showed that 29 individuals agreed with the statement, while 61 respondents highly agreed with it. However, 7 respondents strongly disagreed, and 5 respondents disagreed. Regardless, 72 respondents (71%) agreed, 28 respondents (27%)

agreed, and only 2 respondents disagreed that data reporting must always be accurate and on time (Table 7). 92 respondents also agreed that routine data reporting should be welcomed and supported, with 51 (50%) strongly agreeing and 41 (40%) agreeing [11].

		Strongly disagree	Disagree	Agree	Strongly agree	
3.8	Routine data reporting systems gives healthcare workers additional work while	N	5	7	29	61
		%	5%	7%	28%	60%

	they are already busy with the patient care.					
3.9	Routine data reporting systems should be embraced and encouraged.	N	7	3	41	51
		%	7%	3%	40%	50%
3.10	Routine data reporting need to be complete and timely every time.	N	1	1	28	72
		%	1%	1%	27%	71%
3.11	It is necessary for the health workers to know the routine data reporting.	N	2	3	33	64
		%	2%	3%	32%	63%
3.12	Routine data reporting is only necessary if the supervisor is not around.	N	39	31	9	23
		%	38%	30%	9%	23%
3.13	The current data being reported is sufficient to plan and make well informed decision.	N	9	24	46	23
		%	9%	24%	45%	23%

**Table 7.** Shows attitudes of healthcare workers on routine data reporting on linked list questions.

**Practice of health professional on routine data reporting**

The practice of health professionals on routine data reporting was reported in this section D (Table 8). The segment consists of 8

questions that evaluate the practice of healthcare professionals about routine reporting of data. This section only consists of likert scale questions [12].

			Never	Sometimes	Regularly	Always
4.1	I complete the reporting registers.	N	8	20	32	42
		%	8%	20%	31%	41%
4.2	I do trend analysis.	N	27	27	26	22
		%	26	26%	25%	22%
4.3	I make decisions based on the previous incidence reported.	N	13	36	26	27
		%	13%	35%	25%	26%
4.4	I report routine data to my supervisor.	N	4	19	28	51
		%	4%	19%	27%	50%
4.5	I follow the routes of data routine reporting.	N	7	17	24	54
		%	7%	17%	24%	53%
4.6	I capture complete data in relevant health systems.	N	20	16	25	41
		%	20%	16%	25%	40%
4.7	Routine data reporting is affected by fragmented reporting systems.	N	5	46	23	28
		%	5%	45%	23%	27%

4.8	I report on real time data	N	5	16	35	46
		%	5%	16%	34%	45%

**Table 8.** S practice of healthcare workers on routine data reporting.

Only 8% of the n=102 respondents said they never filled out a reporting register, compared to 4% who always did it, 3% who did it frequently, and 2% who did it occasionally. 75 people perform trend analysis, however only 22 of them do it consistently, 26 frequently, and 27 irregularly. 76 respondents also base their decisions on previous incidences. Fifty-two percent of respondents (n=50; 54%) reported to their supervisors [13].

## Discussion

This study assessed the knowledge, attitude, and practice of healthcare professionals at the two hospitals. The selection of two unique geographic regions within the various health settings aided in the development of knowledge of how various health care departments handled difficulties with routine reporting of data. Additionally, the study was successful in validating a number of issues that future initiatives must solve when it comes to preventing healthcare personnel from submitting routine data.

### Knowledge of health care workers on data routine reporting

The researchers' discovered a high level of data routine reporting knowledge in this investigation. In spite of the fact that majority of respondents (n=59; 58%) are aware of the key components of data routine reporting, more than half of the respondents (n=75; 74%) have some knowledge of what data routine reporting is. Contrary to the findings of the Oyegbite research, healthcare professionals did not have adequate knowledge of disease surveillance notification. Additionally, (n=91; 89%) understand where to extract data for reporting. Only (n=9; 9%) said they reported on non-communicable diseases, while (n=66; 65%) reported on communicable diseases [14]. All other types of data had a score of 27%. Although it is expected that healthcare workers report routinely, n=27; 26% of respondents said they had never been trained. Based on this finding, we can conclude that there was insufficient training on data reporting because only (n=69; 68%) respondents had received it, which is unquestionably not good since every healthcare worker needs to be aware of routine data reporting.

In this study, despite the fact that the awareness of data routine reporting was high, the depth of knowledge was poor on the knowledge of obligations on data routine reporting, as only (n=62; 61%) respondents that knows about data routine obligation. This is almost similar to a study conducted by Anambra state, Nigeria by Chinomnso, et al. on awareness and knowledge of disease surveillance and notification by health-care workers and availability of facility records. However, most (n=79; 78%) of health care workers know the importance of routine data reporting. Some respondents in the study 75 (74%) had knowledge on data routine reporting but not all healthcare professionals have the knowledge, thus leading to under

reporting as seen in study done by Tan, et al. that was reported among doctors in Taiwan, with an added reason of not knowing which diseases are notifiable. Similarly, there was a lack of knowledge on NMCs in Spain as doctors' notified only severe diseases [15].

As a result, given that only 38 of the respondents in the current study had received regular training, the health care workers' current data deficiencies, which are most likely related to the caliber of their main training, highlight the need for additional and ongoing training in data reporting. This level of training was observed in a similar study conducted by Nnebue, et al. which reported that only 32% of healthcare workers were trained. Although Nsubuga, et al. a study conducted in Tanzania, observed a considerably better condition in which 81% of the staff that was trained, the training efficiently fills in knowledge gaps and enhances healthcare personnel' attitudes and behaviors related to disease reporting according to Nnebue, et al. Similarly, interventional studies conducted in Nigeria and Ethiopia, as reported by their ministries of health, found that training improved disease reporting by improving knowledge, increasing health workers' appreciation of the value of reliable data, increasing awareness and use of IDSR indicators, or increasing the completeness and timeliness of reporting [16].

### Attitudes of healthcare workers towards data routine reporting

The accessibility and complexity of reporting form, lack of motivation due to poor feedback on reported data, and a perception that reporting data is pointless are all factors influencing knowledge, attitudes, and practice of data reporting and under reporting. To increase the rate of reporting, a short, simple, and easily accessible form was recommended. Undergraduate training and continuing medical education for doctors should include information on the notification process, and data quality aspects, particularly the importance of notification for disease control and health planning. Similar factors were identified in the study done on the assessment of data reporting among healthcare workers in South Eastern state, Nigeria by Abdool and Dilraj [17].

Our study found a better attitude of health care workers, as majority of the respondents are agreeing on data routine to be embraced and encouraged where by 51 respondents strongly agree and 41 agreed. Few respondents not agreeing could be to lack of training on data reporting as the majority 39% healthcare workers indicated that they had not received proper training on the data reporting system and more than half 63% are not trained occasionally. Proper training on notification systems has been demonstrated to have a positive impact on healthcare professionals in northern Nigeria as reporting of notifiable diseases increased from 2.3 to 52% [18,19].



## Practices contributing to poor routine data reporting

Workload was one of a contributing which is the highest chosen as more than 44% of healthcare workers complain of time constraints due to workload. A previous study done by Farah, Tasneem and Muslehuddin on factors responsible for the under-reporting of notifiable infectious diseases by general practitioners also found the same factor as the most common reason for not reporting a particular disease was found to be time constraints and confidentiality towards their patients. This also leads to bad practice as the study shows that poor practice was recorded concerning only 39 (38%) of healthcare workers indicated that reported data and complete the data collection tools. Surprisingly, very few acknowledged that time was an important factor in causing disability, in stark contrast to a similar study conducted in Iran [20].

## Conclusion

Health professionals from two hospital, were found to have "excellent level" knowledge and practice toward data routine reporting but were found to have "bad level" of attitude, which was determined to be their main weakness. The availability and knowledge of the various reporting formats regarding regularity of reporting, uses, and where or to whom to disclose this data, as well as the knowledge of data reporting in general, fell short of expectations. The majority of these healthcare personnel could not have received adequate training in data reporting, and they might not be sufficiently motivated to do so. This was observed at both institutions. In general, the current study also found shortcomings in KAP for data regular reporting, which enables better planning to meet the obstacles involved in bolstering the reporting systems for the two hospitals. Finally, expanding the scope and substance of training in data routine reporting and hiring people to handle paper work are strategic initiatives that could have a good influence on data routine reporting.

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