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Analysis of Integrated Healthcare Centre (Posyandu) Management Information System in Lapai Public Health Centre

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Abstract

Integrated Healthcare Centre (*Posyandu*) management information systems are used to facilitate the process of recording and reporting *Posyandu* activities carried out by cadres. The purpose of this study was to analyse the *Posyandu* information system at Lapai Public Health Centre. This research used a combination of quantitative and qualitative methods. While the independent variables were the knowledge and behaviour of the cadres, the *Posyandu* information system training, the length of work of the cadres, and monitoring the Public Health Centre, the dependent variable was the *Posyandu* Information System. The quantitative data analysis was done using a univariate analysis while qualitative data were analysed using the triangulation method. The results showed that 100% of *Posyandu* data were recorded by cadres using books/papers, 100% data processing was still manual, 77.8% *Posyandu* data were actively reported by cadres to the *Posyandu's* person in charge, 100% of the information was disseminated, 41.7% of cadres had knowledge, 69.4% of cadres had worked for more than five years, 94.4% of cadres had received training, 72.2% of the data were recorded and reported completely, and 83.3% of the data were reported on time. An offline computerized recording system needs to be made so that it is easier to combine all *Posyandu* data at Public Health Centres.

Keywords: analysis, management information system, integrated healthcare centre

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1. Introduction

The Health Information System is a system which explains the importance of information needs in the health sector to support and facilitate any health service activities such as Integrated Healthcare Centre (Posyandu). Integrated Healthcare Centre (Posyandu) is a community service centre that has a strategic role in the community as the vanguard of the community health service system in monitoring family health, especially mothers and children [1].

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According to Yeny (2011) in each of its activities, Posyandu uses the Posyandu Information System (SIP) which can be used to simplify the process of recording and reporting Posyandu activities carried out by cadres [2]. In her research, Yeny (2011) designed an Open Source-based Posyandu Information System design which can overcome existing problems and to facilitate the management of health information recording at Posyandu [2].

The Information Model for Monitoring Maternal and Infant Health at Posyandu in the Framework of Efforts to Improve Family Health, this shows that monitoring of the posyandu management information system is inseparable from the role of officials involved with the system as a posyandu cadre [1]. In addition, testing still needs to be done because there is a possibility that the system will not run as desired. Based on the results of research3 on the Analysis of Factors Related to the Completeness of Children with Disabilities in the Information System of Puskesmas Sidorejo Kidul Salatiga, it was found that the knowledge, attitudes, age and length of service of cadres and the ratio of toddlers cadres, training, monitoring and evaluation Puskesmas, as well as the availability of SOPs related to the completeness of the Posyandu Information System recording at Puskesmas Sidoarjo Kidul, Salatiga City.

According to the Basic Data of West Sumatra Provincial Public Health Centre 2016 were published by the Ministry of Health, it is known that in Puskesmas Lapai's Working Area there are 12 Posyandu Purnama, 12 Posyandu madya and 16 Posyandu Mandiri, where the total number of Posyandu cadres is 72 people. Based on the initial survey conducted on 29 October 2019 interviews with holders of the Health Promotion program at Puskesmas Lapai4. It was found that there had been routine guidance on information systems for Posyandu cadres in Lapai Puskesmas working area. In the Posyandu Information System reporting process, before the report reaches the Puskesmas, the report is first collected by the person in charge of the Posyandu in each village where there are 3 villages in Puskesmas Lapai's working area. Based on the above background, it is necessary to conduct research to see the analysis of the Posyandu information system in the Puskesmas Lapai's Work Area.

2. Material and Method

This research is a descriptive study using a mix method approach, namely a combination of quantitative and qualitative approaches5. Independent variables (knowledge of cadres, training in posyandu information systems, length of work, monitoring of health centres and standard operating procedures) and dependent variables (posyandu

information systems). This study aims to dig deeper and be able to evaluate the information system used in the Posyandu for Toddlers in the Puskesmas Lapai's Work Area.

Quantitative data were collected by means of interviews using a questionnaire to 36 Posyandu cadres. Qualitative data were collected by means of in-depth interviews using interview guidelines with the person in charge of Health Promotion at the Puskesmas Lapai and the person in charge of Posyandu in the village.

Quantitative data analysis used univariate analysis in the form of frequency distribution. The qualitative data analysis was done by using the triangulation method. Steps in analysing quantitative data consist of editing, coding, entry, cleaning, and output, while analysing qualitative data consists of reducing data, presenting data, drawing conclusions and verifying data with quantitative data.

3. Results

3.1. Recording, processing, reporting, and dissemination

TABLE 1: Proportion distribution of Posyandu cadres based on recording, processing, reporting and dissemination in the Puskesmas Lapai's work area.

Items	Number	Percentage
1. Recording		
a. Paper/Book Based	36	100,0
b. Computer Based	0	0,0
2. Processing		
a. Manual	36	100,0
b. Computerized	0	0,0
3. Reporting		
a. Active	28	77,8
b. Passive	8	22,2
4. Dissemination		
a. Available	36	100,0
b. Not available	0	0,0

Source: Author's own work.

Based on Table 1 regarding the distribution of Posyandu cadres in the Puskesmas Lapai's working area in recording, processing, reporting and dissemination the Posyandu Information System, it was found that 100,0% of Posyandu data was recorded using books/paper, 100,0% Posyandu data processing manually, 77,8% of Posyandu data are

actively reported by cadres to the person in charge of the Posyandu, and 100,0% of Posyandu information is disseminated.

3.2. Knowledge, length of work, and training of cadre

TABLE 2: Proportion distribution of Posyandu cadres based on knowledge, length of work, and training in the Puskesmas Lapai's work area.

Items	Number	Percentage
1. Knowledge		
a. Good	15	41.7
b. Not Good	21	58.3
2. Length of Work		
a. < 5 years	11	30.6
b. ≥ 5 years	25	69.4
3. Training		
a. Available	34	19.4
b. Not available	2	80.6

Source: Author's own work.

Based on Table 2. regarding the distribution of Posyandu cadres in the Puskesmas Lapai's work area, the level of knowledge about the Posyandu Information System (SIP), years of work, and training was obtained that 41.7% of Posyandu cadres' knowledge of SIP was good, 69.4% of Posyandu cadres worked more than 5 years, and 94.4% of Posyandu cadres have received training.

3.3. Completeness and timeliness

TABLE 3: Proportion distribution of Posyandu cadres based on completeness and timeliness in the Puskesmas Lapai's work area.

Items	Number	Percentage
1. Completeness		
a. Complete	26	72.2
b. Incomplete	10	27.8
2. Timeliness		
a. On time	30	83.3
b. Not On Time	6	16.7

Source: Author's own work.

Based on Table 3 regarding the distribution of Posyandu cadres in Puskesmas Lapai's working area in the completeness and timeliness of Posyandu data reporting, it is found

that 72.2% of the data recorded and reported are complete and 83.3% of the data are recorded and reported in a timely manner.

4. Discussion

4.1. Recording, processing, reporting, and dissemination

Based on Table 1 regarding the distribution of Posyandu cadres in Lapai Puskesmas working area, it was found that 100.0% of Posyandu data recording was collected by books / paper and manual processing. Based on in-depth interviews conducted with cadres data collect by books or paper is easier and faster to do, cadres are accustomed to using books and some cannot operate computers. This information is related with the results of interviews with informants that the infrastructure such as of computers is only available at the Puskesmas which is used for all Health Promotion Programs. Meanwhile, each cadre's had a Posyandu Information System book every year.

> *Ada..kalau laptop kan untuk program, kalau khusus posyandu gak ada, termasuk kalau SIP juga, kalau itu kan, yang mengadakan kan bukan puskesmas, kalau kader dapatnya dari kelurahan. Setiap tahun biasanya dapat SIP kan bukunya. Gak ada pake computer. (informant 1)*

Based on Table 1 regarding the distribution of Posyandu cadres in the Lapai Puskesmas working area, it was found that 77.8% of Posyandu data were actively reported by cadres to the person in charge in posyandu to manage it. Based on the results of in-depth interviews, that Posyandu has a chairman who is responsible to the coach in each village. and during Posyandu there are always two health workers from the Puskesmas.

> *….tiap Posyandu sudah ada 2 tenaga kesehatannya, jadi langsung yang 2 itu yang mempertanggung jawabkan ke Pembina kelurahan…*
>
> *…hari ini ada posyandu, tapi bukan saya pembinannya karena yang satu lagi berhalangan, jadi saya menggantikan…*
>
> *…Yang aktif sekali ada juga, yang gak kurang juga ada, itu tergantung semangat diri sendiri…, (informant 2)*

Based on Table 1 regarding the distribution of Posyandu cadres in the Lapai Puskesmas working area, it is found that the information of the Posyandu is 100% disseminated. Based on the results of in-depth interviews, a mini workshop is always conducted once in a three month

...Kalau ke kelurahan itu..gak rutin, misalnya per tiga bulan, kan kami lokmin, nah.pas lokmin nanti dilaporkan juga ...

...Pembina yang melaporkan data ke puskesmas, kalau kelurahan dia.. misalnya pas lokmin lintas sektoral, kan lokmin puskesmas, diundang oh...kelurahan.. habis itu baru dilaporkan....., (informant 1)

....Pas lintas sektoral, kader diundang... yang per tiga bulan itu ...jadi yang pertriwulan itu, ada semua, termasuk kelurahan...

Based on Sholihah's research (2015), the system for recording and processing data that is still have done by manual system, inconsequence there is inefficient time and energy because data is written repeatedly, and become unfavourable results [6]. In order to be effectively and efficiently, cadres need to get information technology support that makes it easier for cadres to carry out their duties [7].

4.2. Knowledge, length of work, and training of cadre

Based on Table 2. regarding the distribution of Posyandu cadres in Puskesmas Lapai's working area, the level of knowledge about Posyandu Information System (SIP), was found good 41,7%. Although 94,4% of Posyandu cadres have received training, but training is general about Posyandu, of the 36 cadres interviewed, only 1 person received special training in recording, processing, and reporting Posyandu data. However, most of the cadres had a working period of more than 5 years, namely 69,4%.

....Kalau dari segi pelatihan yang diikuti, kayaknya sudah cukup, itu mungkin saya sendiri yang kasih jadi narasumber, udah sering sekali untuk kelurahan ketiga-tiganya, apalagi kalau mereka yang diundang pertemuan –pertemuan diluar juga sering, kayak di DKK yang mengadakan, di hotel, malah kadang penyegaran kader pun ada tuh tiap tahun, malah kadang-kadang kader, kayak tahun kemaren kami.. eh tahun ini, penyegaran kadernya mintak diluar, karena udah bosan didalam, kalau untuk materi insyaallah kami sudah tahu materi posyandu ya itu aja..gitu..kalau untuk materi kayaknya udah, tinggal lagi bagaimana mereka kerjakan, atau ndak tu kembali kepada individu masing-masing..

Several studies have shown that cadres' knowledge is related to the posyandu activity such as quality of monthly reports and cadres who have 1 - 5 years' experience in posyandu activities can improve the posyandu's performance. In addition, cadre training

is expected to increase cadre knowledge and have an impact on the quality of posyandu recording and reporting [8, 9].

4.3. Completeness and timeliness

Based on Table 3 regarding the distribution of Posyandu cadres in the Lapai Puskesmas working area from the completeness and timeliness of Posyandu data report it is found that 72.2% of the data recorded and reported are complete.

> *….formulir Format 2 dan Format 3 yang sering tidak ada tentang registrasi bayi, balita, WUS dan PUS…*

Based on Table 3 regarding the distribution of Posyandu cadres in Puskesmas Lapai's working area in the completeness and timeliness of Posyandu data reporting, it is found that 83.3% of the data are recorded and reported on time. Each Posyandu will report no later than one week after the activity.

> *..sudah dikumpulkan, tanggal 28 la….tanggal 2-3 sudah di meja pimpinan, pelaksana diantar tanggal 5 yah laporan itu, nanti ada kan bagian ngantar… (Informant 1)*

4.4. Problem of Posyandu Information System

Based on the results of in-depth interviews, it is known that the problems found in the Posyandu information system regarding recording, processing of reporting and dissemination by cadres are related to the low level of community participation in Posyandu activities so that the recording and reporting are incomplete.

> *…kalau SIP, setiap posyandu punya, kalau gak yang baru, yang lama kan masih bisa diteruskan, tapi kalau untuk pengisian sebenarnya diisi…tapi kadang-kadang…kalau untuk kota padang kan kendalanya, penduduknya kan gak ini..gak tetap..sering pindah-pindah..gitu… jadi itu yang membuat kohortnya gak bagus, kalau kata kader, kohort kami jadi gak cantik..hehe, banyak yang pindah-pindah, kemudian untuk kunjungan kan juga banyak komplek, kalau udah komplek perumahan,udah sepi jarang mau datang ke posyandu, karena ada beberapa bekerja, anaknya mungkin sama penga-suh, atau dititipkan sama orang tua tapi perginya ke tempat lain, jadi ke posyandunya jadi pergi ke tempat lain (informant 1)*

Completeness of Posyandu data is still lacking because most of the posyandu targets do not attend regularly [10].The number of targets who attended did not match the target targets so that recording and reporting became incomplete9. For this reason, it is hoped that health workers and cadres can increase community participation in participating in routine Posyandu activities.

The public health management Information system is located in the primary health unit, the system includes a health recording system for children, mothers and the elderly. The system makes work more efficient [11]. The computerized system, data related to individual health status can be accessed easily [12]. In contrast to Cameroon, a computerized health information system cannot be organized properly and correctly because routine power cuts and inadequate staff skill [13].

5. Conclusion

Based on the research, the conclusion obtained was that the recording and reporting of Posyandu Information System data in Puskesmas Lapai's Working Area mostly used SIP books or paper where data processing was still manual or did not use computers. Most of the cadres had received training but were not closely related to SIP recording, processing and reporting. It is necessary to create a recording system using an offline computer so that it is easier to combine with all Posyandu in the Puskesmas Lapai's Work Area. Special training needs to be given on recording, processing and reporting so that the Posyandu Information System in the Lapai Puskesmas Work Area is more effective and efficient.

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Conflict of Interest

There is no conflict of interest to declare in this research.

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