Influence of Nursing Information Management System Applications Based On Information Technology Toward Nursery Knowledge About Child Nursing Management In Lavalette Hospital Room Malang

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Abstract: All SOPs, algorithms, formulas, principles of management appropriate hospital standards are documented paper based making it less effective and practical for socialized to all existing nurses. One solution is to increase the knowledge of nurses about nursing management in pediatric patients by providing application based Nursing Management Information System technology. This study aimed to determine the effect of application-based Management Information System Technology for Knowledge Management of Nursing Nurse of pediatric patients at Children's Hospital Space Lavalette. The design used in this study was a quasiexperimental pretest-posttest approach in the treatment group. Sampling was carried out with nonprobability sampling method, or more specifically purposive sampling and obtained a sample 16 children 7B room nurse. The research instrument used was a questionnaire enclosed. From the results of the questionnaire indicate the level of knowledge dissemination nurse before being given a SIM application showing good category (25%),. Meanwhile, after addressing both categories (81%). Based on the Wilcoxon rank test test with SPSS 16 on tarap significance (α = 0.05) was obtained p valuenya = 0.000 (p valuenya <0.05), it is concluded that H0 is rejected and H1 is accepted so that it can be concluded that there was an effect on the SIM Application knowledge about the management of Nursing nurse in the nursery Lavalette Hospital. Based on this study, it is suggested nurses can utilize and develop technology-based SIM application.

1 INTRODUCTION

Childhood is a period of growth and development that begins with infants (0-1 years), age of play / toddler (1-2,5 years), pre-school (2.5-5 years), school age (5-11 years), until adolescence (11-18 years). Children are vulnerable individuals because of complex developments that occur at every stage of childhood and adolescence. Children are also physiologically more vulnerable than adults. The onset of illness for them is often abrupt, and the decline can take place quickly. Based on the results of the survey, childhood diseases are often found in the child's room at Lavalette Hospital such as diarrhea, DHF, Pneumonia, Leukemia, Congenital Heart Disease, Nephrotic Syndrome, Meningitis, and Epilepsy. The population in Surabaya is about 5,720,067 people where 42% is the number of children of the population. The number of pediatric patients reaches 50,000 patients / year in hospitalization (Surabaya City Government, 2009). The proportion of diarrhea as the number one cause of death in children is around 60% (WHO 2009), and in Pneumonia case there is 19% cause of death in underfive (WHO, 2005), the number of in-patient children in Lavalette Hospital Malang is 1,433 children (December, 2013) and there were 70.59% of patients with DHF.

In the past two decades, the development of communication and information technology has developed rapidly in nursing especially in developed countries. The use of computer-based systems in clinical lands has been shown to improve the quality of nursing care, more effectively, efficiently, and practically (Korst et al 2003; Smedley & Allyson).
Although the trend and issue of information technology application has been quite lively discussed, the investigation on this matter is still very limited, especially in Indonesia. Based on preliminary studies conducted in the Lavalette hospital's children's room, information related to increased knowledge and skill competence for nursing is very limited. It is also known that all the protocols, algorithms, formulations, management principles appropriate to hospital standards are documented paper-based, so it is less effective and practical to be socialized to all existing nurses.

2 METHODS

This research design is Quasi-experimental with one-group pre-test approach - post test design. In this study nurse knowledge about the management of nursing children who are measured first before the socialization of information system application nursing management based on technology then knowledge of Nursing Management of children is measured again after given the application of information system based nursing technology management.

Questionnaires were given to the respondents and respondents were asked to read the questions well and the questions were filled in directly by the respondent by choosing one of the respondents' responses to the taste in accordance with what was known or considered correct by giving a tick (√). If the selected answer will be replaced, the respondent is asked to cross off the first answer and check the new answer and ask for no missed / missed questions, and check whether the completed question is answered.

3 RESULTS

The results of this study are presented in the form of pie charts for the respondent's characteristic data ie age, sex, education, duration of work, while the data and knowledge level of nurses about the management of nursing children before and after the granting of SIM application with SIM software presented in clustered cylinder diagram form described in the diagram below.
Sex in Children's Room Lavalette Hospital Malang Based on Figure 1, it can be interpreted that from 16 respondents, the percentage of the majority of women is 11 people (65%) of the male as many as 6 people (35%), so it can be concluded that the job as a nurse is more desirable by women especially as child care.

![Figure 1.](image)

Age in Children's Room Lavalette Hospital Malang. Based on Figure 2, can be interpreted that most of the age range of respondents between 20-30 years as many as 7 people (44%) of 16 respondents, which means classified in young adulthood is still very productive in work. And the age range of respondents between 51-60 years as much as 1 person (6%).

![Figure 2.](image)

Based on Figure 3, it can be obtained that almost 94% (15 persons) are D3 / D4 graduates of nursing who are beginner nurses.

![Figure 3.](image)

Based on Figure 4 can be obtained information almost half that is 38% (6 people) work in child's room for > 10 years.

![Figure 4.](image)

Based on Figure 5 can be interpreted that from 16 respondents, it is known nurse knowledge about nursing management of children before given the socialization of SIM application is mostly as many as 7 respondents (44%) have less knowledge and a small part who have enough knowledge as much as 5 respondents (31%) and good as many as 4 people (25%).

![Figure 5.](image)
Based on Figure 6 can be interpreted that from 16 respondents, it is known nurse knowledge about nursing management of children after given SIM application is mostly have good knowledge as many as 13 respondents (81%) and quite as much as 3 respondents (19%), and no respondents who have less knowledge.

Based on Figure 7, the overall knowledge of good nurses at the time before giving the dissemination of SIM applications as much as 25% (4 respondents) then at the time after given the socialization of SIM application as much as 81% (13 respondents) means an increase of 56%, and less before given the socialization of SIM applications as much as 44% (7 respondents) then at the time after given the SIM application socialization there is no lack of knowledge.

<table>
<thead>
<tr>
<th>Table 1: Results of Wilcoxon Signed Ranks Test</th>
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<tbody>
<tr>
<td>post – pre</td>
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<tr>
<td>Z</td>
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<tr>
<td>-3.528</td>
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<tr>
<td>Asymp. Sig. (2-tailed)</td>
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Based on the above data, we get Wilcoxon Signed Ranks test result with Z value of -3.528 with p value (Asymp Sig 2 tailed) = 0.000 which is less than significance level (p value <0.05), it is concluded that H0 is rejected and H1 accepted so it can be seen that there is influence of Application to nurse knowledge to management of nursing child in Lavalette Hospital room Malang.

4 DISCUSSION

Nursing Knowledge Level About Child Nursing Management Before Giving Socialization Of SIM Application

Based on Figure 5 it can be seen that the level of knowledge about the management of nursing children before the socialization of SIM application is only 4 respondents (25%) good, 5 respondents (31%) enough, and less as much as 7 respondents (44%). Based on these results it can be concluded that most of the nurses in Lavalette Hospital's children's room, prior to being given socialization of SIM application have a low level of knowledge in the management of nursing children so that the inaccuracy in providing management that will cause death.

Researchers argue that one of the factors causing the lack of knowledge of respondents in the management of nursing children is the factor of education and lack of information exposure. This is evidenced from the results of research that is seen from education, in the study of respondents most D3 nursing graduates as much as 36 respondents (95%). This is in line with the theory that less knowledge can be caused by several factors such as age, occupation, educational level, information resources, neighborhood culture, and experience (Notoatmodjo, 2011).

In this study seen that education is still classified in the level of beginner nurse. Education plays an important role in every change. With the high level of education pursued, it is expected that one's knowledge will increase. According to Notoatmodjo (2011) the higher the education of a person, the greater the opportunity to acquire knowledge, think logically and understand the information obtained, therefore the higher level of nurse education can be said that his knowledge of new information in preparing or making and doing nursing process also the better and experience also more and more.

In accordance with research conducted by Inayatullah (2013) indicates that there is a relationship between nurse education level with nurse knowledge level about nursing care with NNN diagnostic guidance in Ajibarang Hospital. The results of this study are in line with research from Asiah (2009) that the level of education is related to knowledge of reproductive health of housewives in Rukoh Village, Syiah Kuala Banda Aceh District. The higher the level of education obtained the higher the level of knowledge and awareness of the mother of healthy reproduction. This suggests a correlation between education level and nurse knowledge about

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child pediatric management, meaning that nurse education improvement is directly proportional to knowledge enhancement.

Most of the D3 graduate respondents this matter can be connected with the length of time work as a nurse in the hospital showed almost half of respondents that is as much as 6 respondents (38%) have been working ≥ 10 years, this can show the long duration of nurses have passed from nursing D3 education will can lead to less exposure to information on the management of nursing children in accordance with the evidence base. This is due to busy work of nurses so there is no free time to read or find new information. An important professional nurse has the knowledge and skills in nursing care so as to be able to perform the process of quality nursing care and international standard.

**Nursing Knowledge Level On Child Nursing Management After The Granting Of The Sim Application**

The socialization and implementation of SIM applications seen in Figure 6 shows an increase of 56% of the number of good quality respondents from the previous 25% to 81%. According to researchers this could be due to influenced various factors such as experience and information factors. Respondents follow the socialization of the use of SIM applications as an experience for the respondents. Through this experience the respondents got various things one of them knowledge, this is evident from the results of research after the respondents follow the socialization of SIM applications cognitive knowledge of respondents to be increased and supported by the theory that cognitive knowledge one of them can be influenced by experience (Notoatmodjo, 2011) and formed from experience and memory gained previously (Sudarmita, 2002). Another factor besides experience, that is information. Because according to Notoatmodjo (2011), an information plays an important role in helping a person gain knowledge. In this research information obtained from the SIM application. So that nurses are exposed to the latest information related to nursing care of children who are computer based.

Information that has been obtained will be processed by a person to generate knowledge, the more often people are exposed to information the more knowledge they will get. Information will be accepted as a fun object or not, if fun will then be believed and consequently there will be a push to do it (Maulana, 2009). This is in line with research conducted by Aphris Timothy about "The relationship of knowledge and motivation of nurses with the management of pneumonia of children under five years in District Timor Tengah of Nusa Tenggara Timur" obtained the result of respondent category with good knowledge which implement the management of pneumonia balita equal to 69.7%, this because the nurse who has followed the training of pneumonia management in infants is 67.7% whereas the knowledge of nurse which is less in executing management of pneumonia balita that is 30.3%, or as much as 32.3% nurse has never follow training of pneumonia toddler management.

**Influence Of Sim Application To Nurse Knowledge About Child Nursing Management In Child Room**

Figure 7 shows that there is a significant increase in nurse knowledge level before and after socialization and application of SIM application. In the cylinder diagram shows before the application of SIM applications respondents with a good level of knowledge only 25%, and after application of SIM applications respondents with good knowledge level increased to 81% an increase of 56%. While the respondents with less knowledge level was not found after the application of the previous SIM application there are still 44%.

SIM used in this research consists of: hardware that refers to machine tools in this case that is laptop and printer as output tool (output devices), software that refers to computer program, in this research researcher use software applications consisting of programs that are specific to the concept of nursing care of children. In this SIM application provides the concept of fluid therapy, blood transfusion concept, diarrheal disease algorithm, DHF, and pneumonia.

As well as procedures where each respondent who will use the previous application received socialization by the researcher for the use or operation of SIM applications.

The result of analysis by using Wilcoxon Signed Ranks Test obtained p value = 0.000 (p value <0.05), it can be concluded reject H0 that there is influence of application of SIM nursing application to nurse knowledge level to nursing management of child. The researcher concluded that there is a difference of nurse knowledge level about nursing management of children to respondent before and after socialization and application of SIM nursing application.

The results of this study can be seen with the results of research conducted by Wulan (2013) with the title "Pengaruh Pendidikan Kesehatan Senam
Kaki Melalui Media Audio Visual Terhadap Pengetahuan Pelaksanaan Senam Kaki pada Pasien DM Tipe 2". The results indicate the effect of providing health education through audio visual media to knowledge the exercise of foot gym through audio visual media to the knowledge of the exercise of foot gymnastics in patients with type 2 DM with the results of statistical tests using wilcoxon test in groups before and after given health education through audio visual media obtained p value 0.002 < α (0.005) significant increase in knowledge. This happens because one's knowledge can be influenced by several factors. According Notoadmodjo (2006) factors that can affect knowledge such as education, information, and media.

5 CONCLUSIONS

The conclusions of this research are: The level of nurse knowledge about the management of nursing children before SIM application mostly less that as much as 44% (7 respondents) from total 16 respondents. The nursing knowledge level of nursing management after SIM application increased almost entirely by 81% (13 respondents) from total 16 respondents.

Nursing knowledge level of nursing care of children increased compared between before and after SIM application and based on result of analysis obtained showed p value = 0,000 (p value <0,05) which means showing the influence of nursing SIM application to nurse knowledge level about management of nursing child. At the Emergency Instalation of RSK Mojowarno, most patient was elderly people who had minimal dependency level on the third priority.

6 SUGGESTIONS

It is expected that the nurse to maintain or improve the nurse's knowledge about the management of nursing children by using the SIM application on an ongoing basis. Nurses working in the children's room or in other spaces are expected to keep open and explore new information about the nurse's knowledge level on the management of nursing children of international standard and in accordance with the evidence base in order to provide treatment to pediatric patients given can be quickly and accurately so that it can reduce mortality in children.

And for the next researcher is expected to make the research better with reference this research as effort to increase level of nurse knowledge in child room about management of nursing child. In order to get more accurate results then the researchers should further research with longer time for maximum results, take a larger sample of samples taken by researchers now and see other factors that can affect the level of nurse knowledge about management of nursing children rewards, quality of supervision, interest, motivation, and physical condition of the work environment.

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