THE ATTITUDE IMPROVEMENT AMONG COMMUNITY HEALTH CENTER STAFF IN MANAGING THE RISK AND RESOLVING MALNUTRITION IN UNDERFIVES BY USING ESTIMATION SCORE

Sri Umijati

ABSTRACT

Malnutrition in underfives that increase rapidly can be a problem for the quality of human resource. Among the confounding variables that have influence on malnutrition in underfives, community health center plays an important role in alleviating such negative effect by detecting and eradicating malnutrition as early as possible. However, so far, this basic health service has not showed a satisfactory performance. A tool, called malnutrition estimation score, was created and expected to be able to help the community health center staffs to detect and give early solution to overcome malnutrition in underfives. With the cut-off point of 1.75 this score has 89.9% sensitivity and 44.9% specificity. The presence of the category of malnutrition emergency in this estimation score can also be used to detect health service staff's attitude in managing the risk and resolving malnutrition in underfives. An objective quantitative assessment within the category makes this score easier to use than other estimation tools. Therefore, this score can be used as the strategy in approaching the risk of malnutrition in underfives through improvement of health service staff's attitude. This study using one group pre- and post-test research was aimed to prove that by using this malnutrition estimation score, there can be an improvement of community health center staffs' attitude in managing the risk and resolving malnutrition among underfives. Population and samples were selected based on a high prevalence of malnutrition in underfives. This study was carried out at the District of Sidoarjo, involving 9 health centers in Prambon, Tarik, Gedangan, Sukodono, Taman, Krembung, Porong, Buduran, dan Sidoarjo town as samples. Results of behavioral development in 54 staff from those health centers were as follows: 79.4% of staff had formal education for 12 years (midwifery education), 54.4% with working period from 5 to 10 years, and 48.5% of the staff were 31 - 40 years old. The knowledge of the health staffs, who had been intervened, showed that there was a significant difference in mean (p = 0.009). This result shows that this estimation score had a positive influence on the knowledge of the health staff. Their knowledge on underfives nutritional status after receiving intervention, showed significant difference (p = 0.000), indicating that the estimation score is affecting the knowledge of the staff on underfives nutritional status. Their knowledge on the risk or malnutrition in underfives, after being intervened, also showed significant difference (p = 0.000), showing that the estimation score is affecting the risk of malnutrition in underfives. In general, the health staff attitude in managing and resolving malnutrition at the beginning of this research showed no difference from that at the end of the research (p = 0.08). This means that by the use of this tool, there had been no changing in the health staffs' attitude in the management and risk of malnutrition. Age, education and the working period generally had no influence on the knowledge on the management of malnutrition eradication program, knowledge of malnutrition, and the attitude of health staffs in facing and managing the malnutrition due to less varied samples. Simple scoring tool can be used to overcome their problems and to obtain a more proper staff placement. Finally, the score can improve the staff's attitude, particularly on their knowledge on malnutrition eradicating program in underfives (p < 0.05). It can also be used for screening test to monitor malnutrition. However, further studies are needed to find whether the score can improve or change their attention (attitude) on the eradication of malnutrition.

Keywords: estimation score, malnutrition, risk, underfives, improvement

INTRODUCTION

At managerial meeting in Dr Soetomo General Hospital in August, 1998, it was found that there was an increase in the prevalence of malnutrition from 1.02 % in 1996 to become 7.52 % in 1998. It was apparent that there had been a serious problem in the community. Data from the regional health office of East Java in March, 1999 showed an increase of malnutrition cases in Sidoarjo for the last five months, from 2 patients to 25 patients, and in 2001 the prevalence of underfives categorized as children- below the red line (BGM) was 2.07 %. This result was above the prevalence of underfives below the red line (BGM) in the Province of East Java which was 1.83 %. The rapid worsening of nutritional status may endanger the quality of human resources since the childhood period is short but important, in which there is a rigorous process of growth and development (Jelliffe, 1989)

Social, economic and environmental factors combined with other variables play roles in malnutrition among underfives. Between some variables, community health center as the frontier of health service is the most important factor in reducing the negative effects through early detection and eradication efforts. However so far this basic health service has not performed well. The presence of resources and the support of environment also the ability of health center staffs in early, prompt...
The attitude improvement among community health center staff

Detection and overcoming malnutrition can improve health service in health center. So, the strategy of approaching malnutrition among underfives is needed.

A tool called malnutrition estimation score was created (Umijati, 2000) and expected to be able to assist the staff in community health center to detect and give early solution to overcome malnutrition in underfives. Some values categorized as emergency can be estimated and at the total cut-off value of 1.75 sensitivity score of 89.9 % with specificity of 44.9 % were found with positive predictive value of 69.7 % and negative predictive value of 75.9 %. If the value of estimation score is more than 1.75, it can be predicted that 89.9 % of the underfives suffered from malnutrition.

The presence of the category of emergency in this score can be used as indicator of improvement in health staffs' attitude so that they will be able to overcome the risk and the increasing prevalence of malnutrition in underfives. Objective and consistent quantitative measurement on the emergency category may simplify the usage of this tool as compared to other measurement tools, such as "Kartu Menuju Sehat" (road to health card) that needs three times weight control in three months, in addition to the need of ability to fill the weight in children's growth graphic properly.

Therefore, this score was expected to be used as the strategy of approaching malnutrition risk in underfives by changing of health service staffs' attitude? This study is aimed to prove that by using this estimation score of malnutrition in underfives, the health staffs' attitude can be improved in facing the risk and in resolving malnutrition in underfives.

METHODS

A one-group pre- and post- test design research was undertaken in Sidoarjo with the population all community health centers with high prevalence of malnutrition. The centers in Prambon, Tarik, Gedangan, Sukodono, Taman, Krembung, Porong, Buduran and Sidoarjo were selected, from which 54 nutrition staffs were recruited as targets to prove the improvement attitude in managing the risks and resolving malnutrition in underfives.

This research used discriminant and influence tests.

RESULTS

Health staffs' formal education was not highly varied. A proportion of 79.4% of the staff had formal education for 12 years (midwifery education), 54.4 % had working period from 5 to 10 years, and 48.5 % of the staff aged 31 - 40 years.

With the assumption that prior to the study the targets in community health center had accepted the same treatment, it should be proved that the risk factors of nutritional staff in community health center, such as the age, formal education and working period had influence in the variables observed.

In general, the characteristics of health staff had no influence on the knowledge about malnutrition in underfives both in the beginning and also at the end of research, except the knowledge about sign and symptom of malnutrition, with the equation as follows:

\[
PEM \text{ sign and symptom} = 1.25 + 0.04 \text{ age} - 0.05 \text{ work}
\]

With F = 2.57 and R square 9 %

This equation shows that increasing age of the staff results in better understanding in recognizing the sign and symptom of PEM (protein and energy malnutrition). However, contrasting result was found in regard with the working period. This could only be applied in 9 % of the respondents. At the end of the research, this equation did not prevail.

Characteristics of staff in general had no influence on the knowledge about management program of resolving malnutrition, except management of controlling program at the beginning of research, in which the staff's education had positive effect.

\[
\text{program controlling} = - 1.48 + 0.26 \text{ education}
\]

F = 5.22 and R square = 9 %

At the end of the research, this equation did not prevail.

The same condition was also found in their attitude to the management of eradicating program and also to the increasing of infection prevalence, morbidity or mortality due to malnutrition, except their attitude to the program controlling and evaluation at the beginning of the research.

The staff's knowledge about management of nutritional program, risk and status of malnutrition in underfives at the beginning of the research showed the following result: In Table 1, it can be seen that 88.7% of staffs had reliable knowledge on the management of nutritional program (their grades are above 60).

Questions that support this knowledge were about the definition and the function of management including: planning, organizing, acting, controlling and evaluating. Only few staffs could give correct answers when they
were asked about organizing and evaluating, which were 59.3% and 83.3%.

Table 1. The measure of central tendency and distribution of frequency of health staff's grade on the knowledge of management of nutritional program in community health center, risk and malnutrition in underfives at the beginning of research

<table>
<thead>
<tr>
<th>Staff's Knowledge</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum Value</th>
<th>Maximum Value</th>
<th>Percentages of values above 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management of nutritional program</td>
<td>14.58</td>
<td>3.76</td>
<td>1.46</td>
<td>20.75</td>
<td>88.7%</td>
</tr>
<tr>
<td>Malnutrition in underfives</td>
<td>25.7</td>
<td>2.64</td>
<td>14.53</td>
<td>29.39</td>
<td>96.3%</td>
</tr>
<tr>
<td>Risk of malnutrition</td>
<td>6.49</td>
<td>1.17</td>
<td>-</td>
<td>-</td>
<td>59.3%</td>
</tr>
</tbody>
</table>

Health staff's knowledge on nutritional status in underfives plays role in early detection and the eradication of nutritional problems in underfives, in addition to the knowledge on eradication management. In general, 96.3% of the respondents could answer the questions quite well (their marks were above 60). Some questions supported the knowledge, except questions about the treatment of PEM that could be found in more than 96.3% of the staff. Other questions about classifications, evaluation, case finding, action and observation of PEM were not found.

Based on the 10 questions about risk of malnutrition, in general, only 59.3% of staffs could answer the questions quite well. Only supporting questions about definition of risk factors could be found in more than 59.3% of the staff. Other supporting questions only below 59.3%, these are questions about knowledge, risk approach, and definition of risk score.

In general, the staff's attitude towards the prevalence and nutrition management in resolving malnutrition showed a mean of 283.27, with deviation of 28.70 and minimum and maximum values were 222.00 and 320.00. Only 66.7% of the staff showed attitude above average. Most of the staff's attitude did not express their knowledge.

The description about knowledge in management of nutritional program, risk and status of malnutrition in underfives at the end of the research is as follows: Table 2 shows improvement of knowledge in higher number of staff at the end of research with p less than 0.05. This indicated that estimation score could improve their knowledge.

When the function of management were elaborated in details, only knowledge on program planning changed, although in general, it was the knowledge about management in resolving malnutrition that became improved.

Table 2. The measure of central tendency and distribution of frequency of health staffs' grade on the knowledge of management of nutritional program in community health center, risk and malnutrition in underfives at the end of research

<table>
<thead>
<tr>
<th>Staff's Knowledge</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum Value</th>
<th>Maximum Value</th>
<th>Percentages of values more than 60</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management of nutritional program</td>
<td>15.72</td>
<td>2.83</td>
<td>9.02</td>
<td>18</td>
<td>94.4%</td>
<td>0.009</td>
</tr>
<tr>
<td>Malnutrition in underfives</td>
<td>28.84</td>
<td>1.93</td>
<td>21.67</td>
<td>31.51</td>
<td>100%</td>
<td>0.00</td>
</tr>
<tr>
<td>Risk of malnutrition in underfives</td>
<td>7.61</td>
<td>1.17</td>
<td>-</td>
<td>-</td>
<td>94.4%</td>
<td>0.00</td>
</tr>
</tbody>
</table>

*paired t test
The staffs' knowledge about the condition and risk of malnutrition in underfives play roles in early detection and resolving nutritional problems in underfives, which at the end of the research shows as many as 100% and 94.4% of those staff could answer the question quite well.

In general, health staffs' attitude in facing the prevalence and the management of overcoming malnutrition in underfives had a mean of 289.63%, deviation value 28.04, minimum value 221.00 and maximum value 320.00. The difference of the result from the condition at the beginning of research using paired t test showed no significance (p = 0.08), indicating that the use of this tool had not resulted in the change of the staffs' attitude towards prevalence and nutritional management in the eradication of malnutrition.

DISCUSSION

The result of influence test is that respondents' characteristics on the knowledge of management of resolving malnutrition, the risk of malnutrition, and prevalence of malnutrition in underfives showed no influence at the beginning as well as at the end of the research. This result proved that intervention, the difference of age and working period had no significance. Other factors that need to be considered were that the samples were highly homogeneous. Therefore, similar studies should be carried out. The same condition was found regarding with their attitude.

This research showed that even without any interventions, the working period did not result in an improvement of staffs' knowledge about nutritional program, and, moreover, a decrease was apparent. The effort to refresh staffs' knowledge about management of nutritional program should be considered. The higher the formal education of the staffs, the more it had influence on their attitude toward controlling and evaluation program although it was not supported with proper knowledge.

The staffs' knowledge about management of nutritional program at the beginning of this research was quite satisfactory. This will support their role, function and duty as nutritional health staff in health center. However, if a closer observation was carried out, it was apparent that the organization and assessment program were far below the overall grades. This result should be considered as it may impair the process in resolving malnutrition.

The staffs' knowledge about malnutrition in underfives play roles in early detection and resolving nutritional problems in underfives, in addition to their knowledge in the management of resolving malnutrition. Based on Table 1, the knowledge about malnutrition that had not shown a good result was concerning with signs, symptoms, and classifications and case finding of protein energy malnutrition. This condition should be considered since the prevalence of malnutrition will continue without better knowledge of health staffs.

Only 59.3% of the staffs could satisfactorily answer the questions about the risk of malnutrition. It is a condition that should be noticed because there were many of the staffs still had less knowledge about the risk, so that the coverage rate will decrease and the prevalence will increase. According to the data, the value of knowledge about the risk of malnutrition remains a concern, especially regarding with the approach and score of risk. This condition needs an anticipation to manage the increasing of number of cases. Previous attitude of staffs toward knowledge about management of resolving, the condition and the risk of malnutrition did not show good results because only few staffs were aware about the problems.

The contrasting condition between knowledge and attitude in the management of resolving malnutrition may express a poor process of problem solving in a health center. A good knowledge without positive action or conversely will result in poor attitude and this attitude needs to be changed. An addition of information (knowledge) can change attitude. The presence of power that support or discourage the action of staffs should be known to improve their motivation and to change their attitude toward positive direction.

The fact that the ability of health staffs is minimal needs as strategy of approaching the risk of malnutrition in underfives to improve the service and the resolving program. This strategy is aimed to set up priority by measuring health problems, that have the highest risk to society, and also to decrease or eliminate the risk by implementing anticipatory actions.

At the end of this research after the intervention, it was found that more staffs showed improvement in management of resolving malnutrition and malnutrition status in underfives (p < 0.05) but this result was not found in the knowledge of risks of malnutrition in underfives. On the contrary was the staffs' attitude in management of resolving malnutrition, risks of malnutrition and nutritional status of underfives (p > 0.08). However, descriptively, there was an increase of average value in more homogeneous condition. In addition to better positioning of the staffs, the use of estimation score with simple scoring technique can overcome some barriers as many as possible.
It is proved that the use of score estimation can improve the health staffs' attitude especially their knowledge or change their attention (their attitude) in resolving malnutrition. The score can also be used as screening tool to control (monitor) malnutrition and also to reduce the obstacles in their knowledge on controlling malnutrition case.

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