The use of herbal medicine in children

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Abstract
The herbal medicine has been widely used in children for the treatment of several symptoms and the prevention of diseases before accessing the hospital for professionals help. There are 3 kinds of marketed herbal medicine including empirical based herbal medicine (*jamu*), standardized herbal medicine (*obat herbal terstandar*) and clininically tested herbal medicine (*fitofarmaka*). This study aimed to investigate the utilization of the marketed herbal medicine along with non marketed ones which was known as the Indonesian original herbal medicine (*Obat Asli Indonesia, OAI*) in children. The cross sectional study was conducted by interviewing 91 parents whose children were hospitalized in RSUD Meuraxa, Banda Aceh. The interview was conducted using a structured questionnaire from 4 to 29 September 2014. The result showed that the Indonesian original herbal medicine was used most frequently followed by herbal (*jamu*), standardized herbal and clininically tested herbal medicine. The utilization of herbal medicine was associated with the knowledge of parents and did not correlate to their economic level. All of the parents did not know the side effects of herbal medicine to their children's body and few of them knew the indication of herbal remedies. Overall, it was concluded that eventhough the knowledge of parents about the safety and activity of herbal medicine was not sufficient the use of herbal medicine in children was common.
Key words: empirical based herbal, standardized herbal, clinically tested herbal

Introduction

According to the Book of Policy in National Traditional Medicine (Minister of Health of Republic of Indonesia, 2007), there are more than 9600 species known to have therapeutic activities and 300 species have been used by pharmacy companies. This indicates that herbal medicines have been progressively accepted by society as the substitutes or additional treatment of conventional drugs. In response to the rising use of herbal medicine, Indonesian government has issued the regulation which classifies the marketed herbal products into 3 group based on their data in efficacy and safety. They are herbal (*jamu*), standardized herbal, known as *obat herbal terstandar (OHT)* and clininically tested herbal medicine, known as *fitofarmaka*. J*amu* has been used empirically for decades without any experimental data. The standardized herbal has been evaluated experimentally in animals, whereas clinically tested herbal medicine has been examined in human bodies (NA-DFC, 2005). The plant cultivated for therapeutic uses is known as Indonesia's herbal medicines.

The herbal medicines have been available in drug stores so that can be obtained without prescription and professionals monitoring. This practices could lead to the mistreatment that can harm the body, especially in children. The administration of any therapeutic agents into children's body should consider the anatomy and physiology of their body. The development level of organs such as brain, liver, and kidney affects rate of the absorption, distribution and metabolism and excretion of drugs. The inappropriate doses could lead to the accumulation of drugs in the body and finally cause the toxic effects. The unstandardized preparation of herbal medicines by manufacturer and contaminants (metals, chemical drugs, etc) poses risks for children's health (Woolf, 2003). Parents should seek advice and inform health parctitioners when herbal medicines are used to prevent the negative interactions (Gilmor *et al.*, 2011). Several herbal-drug interaction has been noted . for example, the use of garlic (*Allium sativum)* in children who take paracetamol at the same time would affects the pharmakocinetics profile of paracetamol (Myers *et al.*, 2004). The adequate knowledge of parents is essential when herbal remedies is taken. There are several reasons why parents decide to use herbal such as the beliefs that herbal is safe and more effective because it comes from nature, the cost, the distance to reach public health facilities, etc (Ekor, 2013). There is limited data available about the utilization of herbal medicines in Banda Aceh so that this study was conducted.

Materials and Methods

This cross sectional study was started by selecting the respondent based on the criteria. The respondents were the children hospitalized in Meuraxa Hospital. The children were 6 to 18 years old. The data were collected from parents. Each respondent was informed about the aim of study and then asked to sign an informed consent paper. Enumerators interviewed the participants using questionnaire which consisted of questions divided in 3 sections:

1). Identity of children and parents
2). The practice of using herbal medicine and the type of herbal used before hospitalization
3). The knowledge of parents about herbal medicine (indications, the period of using, source of information and adverse effects)

Data were presented descriptively. The relation between the use of herbal medicine and the parents knowledge and their economic level were identified using *chi square test.* The definition of herbal (*jamu*), standardized herbal (*obat herbal terstandar (OHT)),* clininically tested herbal medicine (*fitofarmaka)* and the their brand names were explained to respondents before interview was carried out.

Results and Discussion

This study involved 91 children hospitalized in regional hospital meuraxa. The demographic characteristics are shown in Table 1. Most of the children (53.8%) were from middle-income family.

Table 1. Characteristic of respondent

Herbal medicine	n	%
Age		
6-10	36	39.6
11-14	28	30.8
15-18	27	29.7
Gender		
Boys	51	56
Girls	40	44
Economic status		
Low income	19	20.9
Middle-income	49	53.8
High-income	23	25.3

Recently, this is the first study that identifies the use of marketed herbal and non-marketed ones. The marketed herbal includes empirical-based herbal (*jamu*), standardized herbal and clinical-tested herbal (*fitofarmaka*), whereas the non-marketed herbal is known as Indonesian herbal medicine.

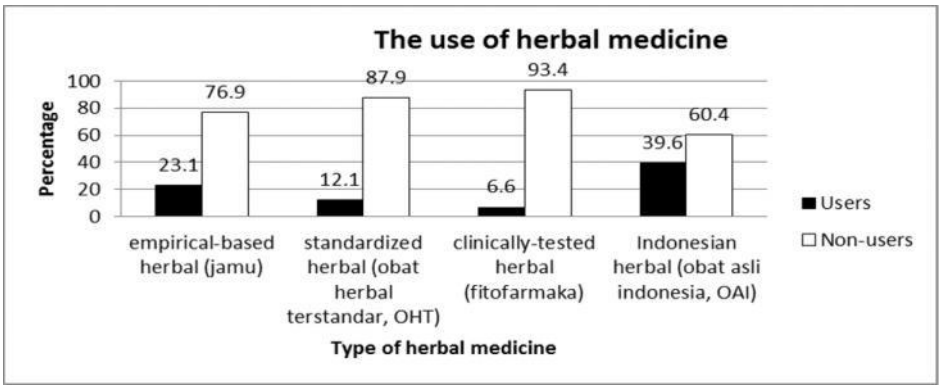

Figure 1. The use of herbal medicine

The utilization of herbal medicine was increased with the availability of the herbal. Out of 91 patients, 39.6 % used Indonesian herbal medicine. Indonesian herbal medicine is part of plants cultivated coventionally for diseases treatment and health maintenance. Since the plants were easily obtained, people used the herbal as the first treatment to prevent the more serious symptoms before accessing public health service. Among the respondents, 23.1% consumed empirical-based herbal, 12.1% used standardized herbal and 6.6 % take clinically tested herbal. The safety and efficacy of *fitofarmaka* had been evaluated in animals ands human but it was only available for several indications. This might be the reason why the number of fitofarmaka users was the least compared to the users of jamu and standardized herbal.

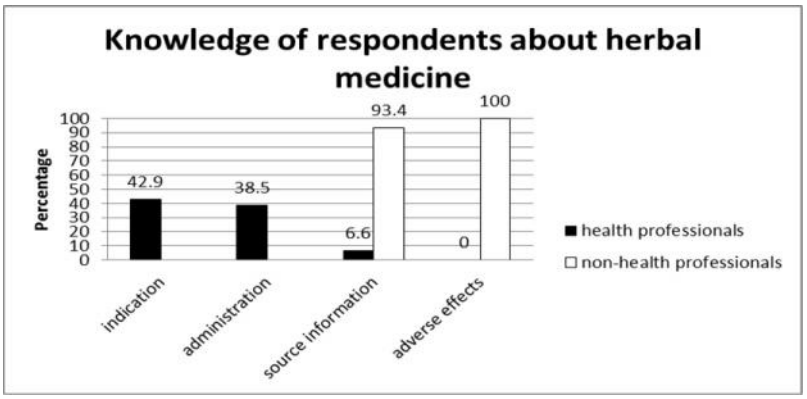

Figure 2. Knowledge of respondents about herbal medicine

Information about the herbal medicine was mostly transferred from non-health professionals such as famillies, neighbours, etc. Less than 10% respondents gained the knowledge from health practitioners such as medical doctors, pharmacists, midwives, etc. This result confirmed the previous study in Nigeria which showed that health professionals did not contribute in the distribution of information among society (Nwooru *et al.*, 2015). A study in Malaysia also showed that parents were the main source of information (Sooi *et al*., 2013). Only 42.9 % participants knew the indication of herbal medicine and 38.5 % knew how long the herbal should be applied. There was no respondent knew the adverse effects of using herbal medicine.

Table 2. The use of herbal medicine based on respondent's knowledge

The use of herbal medicine	Knowledge				Total		α	*P*
	Good		Poor					
	n	%	n	%	n	%		
Non-Users	0	0	38	41.8	38	41.8	0,05	0.0000000000 0265 ($2{,}65x10^{-12}$)
User	39	42.9	14	15.4	53	58.2		
Total	39	42.9	52	57.1	91	100		

Table 3. The use of herbal medicine based on the economic status of respondent

The use of herbal medicine	Economic status						Total		α	*P*
	Low-income		Middle-income		High-income					
	n	%	n	%	n	%	n	%		
Non-users	11	12.1	17	18.7	10	11.0	38	41.8	0.05	0.216
Users	8	8.8	32	35.2	13	14.3	53	58.2		
Total	19	20.9	49	53.8	23	25.3	91	100		

The parents with good knowledge tended to use herbal medicine for their children (table 2). This result consistent with a study in Australia which found that the users of alternative medicine commonly were well-educated (Wilson *et al,* 1996*)*. The users were commonly in the middle and high income families. The majority of children from low income families were non-users. The other study in Germany (Yong Du *et al.*, 2014) indicated that people from high class society were more likely to be the users of herbal medicine. The statistical analysis concluded there was correlation between the use of herbal medicine and the parents knowledge but no correlation with their economic status.

Conclusions

Overall, the number of users of non-marketed herbal were more than marketed ones. The number of users of each type of herbal increased with the availability of the herbal for each indications. There was correlation between the practices of using herbal with the parents knowledge. The economic status was not associated with the use of herbal.

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