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STATUS OF ANTIBIOTICS USE FOR CHILDREN OF MOTHERS WITH CHILDREN UNDER THE AGE OF FIVE YEARS IN NAM DINH IN 2020

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ABSTRACT

To evaluate the knowledge, attitude, and practice of antibiotic use by mothers with children under 5 years old in Nam Dinh, a cross-sectional descriptive study of 1334 mothers with children under the age of five was conducted in 2020. 1264 (94.7%) mothers knew antibiotics. Good knowledge, pleasant attitude, and good practice are all rated at 54.3 percent, 54.1 percent, and 49.2 percent, respectively. Antibiotic misuse is prevalent among youngsters (50.8 percent). Mothers from age group 26 years to over 30 years; reached undergraduate or post-graduate education; worked as an Officer/civil servant; had a family income of more than 10 million dong per month and attended a course on antibiotics for children are 5 factors which have a significant impact on better knowledge, attitudes, and practices, according to multivariate regression analysis. Antibiotic knowledge, attitudes, and behaviors among mothers continue to be insufficient. More antibiotics for children's courses should be established for moms with young children and the general public.

INTRODUCE

Antibiotic resistance is a serious issue all around the world. Antibiotic resistance is one of the top three public health problems of the twenty-first century, according to the World Health Organization (WHO) [1]. Self-prescribing in the community is one of the reasons WHO warns about antibiotic resistance [2]. Antibiotic abuse by parents is a danger for children who are most affected by antibiotic resistance. Several studies conducted in various countries throughout

the world have found that non-prescription and needless antibiotic usage among young children is widespread, ranging from 20% to 40% [3], [4], [5], [6], [7]. The element that limits parents' understanding of antibiotic use has been linked to children's drug abuse [8]. In a study of mothers with children under the age of five in South India, only 49.6% of women assessed their knowledge as adequate, yet up to 70% of moms overused antibiotics in their children [9]. A study of mothers of children between the ages of one and five years old found that 72 percent of mothers had an incorrect understanding regarding the effects of antibiotics, with 60 percent incorrectly believing that medicines should be stopped as soon as the child's symptoms are gone [10]. Most parents (62.5 percent) have a misperception about antibiotic use, according to a study conducted in Lima, Peru [3]. In a survey of 1000 people in 5 highland provinces in Vietnam, 83.3 percent acknowledged self-medication in the previous 12 months [11], while research data from 2017 showed that 76 percent of the population self-administered antibiotics [12]. Currently, there is very little research and evaluation of mothers' voluntary use of antibiotics for their children in Vietnam. Then we assessed the current condition of antibiotic use by moms with children under the age of five in Nam Dinh in 2020".

SAMPLING AND METHOD

Research design and setting

A cross-sectional study was conducted from June 2020 to October 2020 on mothers with children under 5 years old in 3 districts of Nam Dinh province: Giao Thuy; Hai Hau; and My Loc.

Sampling process

1334 participants who fulfilled the inclusion and exclusion, were randomly selected from 3 districts: Giao Thuy; Hai Hau; and My Loc.

Inclusion criteria

Based on the number of mothers with children under 5 years old in the communes of each district, researchers selected 7 communes: Bach Long, Hong Thuan in Giao Thuy district; Hai An, Hai Phong in Hai Hau district; My Hung, My Phuc, My Tan in My Loc District.

Researchers make a list of households with children under 5 years old in each commune. In the next stage, researchers randomly selected the first household, and interview the mother of the child under 5 years old. Then, researchers took the closest household to the first household, and so on until the sample size is full.

Exclusion criteria

Mothers who were absent or did not agree to be interviewed were excluded from the study.

RESEARCH VARIABLES:

The group of variables and research indicators collected includes: (i) Demographic characteristics of the subjects; (ii) Mother's knowledge about using antibiotics for children, including knowledge of antibiotics, effects of antibiotics on bacteria, length of treatment, indications; (iii) Attitudes to using antibiotics: awareness of antibiotic effects, self-storage of drugs at home, awareness of compliance with doctor's orders; (iv) Practice using antibiotics: use correct and adequate doses for children, practice according to the doctor's instructions, buy drugs as prescribed and monitor side effects;

RESEARCH ETHICS:

The research subjects were clearly explained about the research objectives, content, and process and only interviewed when the participants agreed. All study participants were voluntary. Respondents have the right to refuse or stop the investigation at any time. All personal information is kept confidential. All research-related information is kept confidential for this article and related fields only.

RESULTS

Table 1. Demographic characteristics of study population

Characteristics	Number of Mother n (%)
Age group	
≤ 25 years	289 (22.8)
26 to 29 years	386 (30.5)
≥ 30 years	589 (46.6)
Literacy	
Illiteracy/Primary or Secondary school	346 (27.3)
High school	531 (42.0)
Graduated or Post-graduated	387 (30.6)
Employment	
Unemployed or Freelancer	371 (29.3)
Officer or civil servants	272 (21.5)
Worker or Farmer	621 (49.1)
Number of children	
1	326 (25.7)
2	635 (50.2)
≥3	303 (23.9)
Family income	
≤10 million dongs per month	955 (75.5)
>10 million dongs per month	309 (24.4)
Attend a course on antibiotics for children	
Never	1211 (95.8)
Used to	53 (4.2)
Know antibiotics/have used antibiotics for children (n=1334)	
Used to	1264 (94.7)
Never	70 (5.3)

Among 1334 mothers, table 1 shows that 94.7% of mothers had ever known about antibiotics and used antibiotics for their children. 95.8% of mothers never attended a course on antibiotics for children. The majority of participants are 26 years of age or older. 49.1% of mothers are workers or farmers; 50.2% of mothers are having 2 children. Only 24.4% of families had over 10 million dong per month income.

Table 2. Mother's knowledge about using antibiotics for children

	Number of right answers n (%)	Number of wrong answers n (%)
The effect of antibiotics (on bacteria)	449 (33.6)	815 (66.4)
Information on the longevity of antibiotic treatment	506 (37.9)	758 (62.1)
Ask your doctor for advice when you run out of medicine	775 (58.1)	489 (41.9)
Know antibiotic resistance	711 (53.3)	553 (46.7)
Know that antibiotics do not prevent children from getting sick	649 (48.6)	615 (51.4)
Know that antibiotics should not be used when children have fever and flu	671 (53.0)	593 (47.0)
Do not stop the medication when symptoms subside	504 (37.7)	761 (62.3)

Table 2 shows that 33.6% of participants knew the effect of the drug on bacteria and 37.9% knew the correct longevity of antibiotic treatment for children. Moreover, up to 62.3% of mothers said that they would stop taking the medicine if the child's symptoms decreased. On the other hand, 58.1% of mothers will ask the doctor when their children run out of medicine, 53.3% knew about antibiotic resistance, and 53% knew that antibiotics should not be used when children have fever and flu.

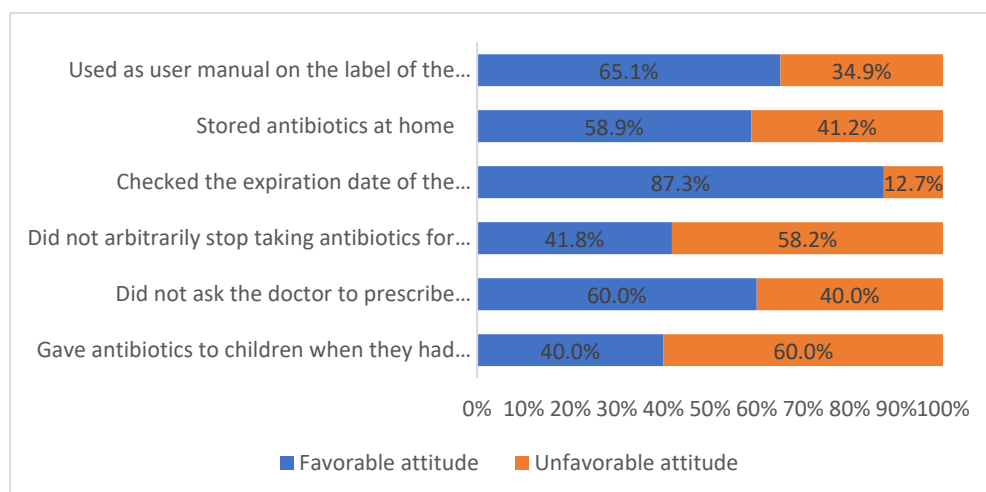


Figure 1. Mother's attitude about using antibiotics for children (n = 1264)

Figure 1 shows that 58.9% of mothers still stored antibiotics at home, and 58.2% would stop taking antibiotics if their baby felt better. Moreover, 40% of mothers still expected the doctor to prescribe antibiotics as well as gave antibiotics to their children when they mistakenly believed that this would help the child recover faster. On the other hand, 65.1% of mothers used the medicine followed by the manual on the label, and 87.3% checked the expiration date of the medicine before taking it.

Table 3. Mother's practice on antibiotic use in children (n = 1264)

	Number of right answers n(%)	Number of wrong answers n(%)
Do not arbitrarily buy antibiotics	564 (44.6)	700 (55.4)
Do not arbitrarily quit drug treatment	611 (48.3)	653 (51.7)
Ask your doctor about the effects and side effects of antibiotics	784 (62.0)	480 (38.0)
Follow your doctor's instructions on dosage and usage	1191 (94.2)	73 (5.8)
Do not arbitrarily stop antibiotics as soon as the child's symptoms are gone	543 (42.9)	721 (57.1)
Learn about antibiotics before taking	754 (59.6)	510 (40.4)
Ask the medical staff about the medicine before giving it to children	464 (36.7)	800 (63.3)
Usually, monitor the side effects of antibiotics	840 (66.4)	424 (33.6)

Table 3 shows that most of the mothers self-reported that they followed the doctor's instructions with 94.2%. However, the rate of not voluntarily buying antibiotics as well as not voluntarily quitting is still low at 55.4% and 51.7%, respectively. The rate of mothers learning about the drug is 59.6%, and asking medical staff or doctors before giving it to their children is 36.7%. 62% of mothers asked the doctor about the effects and side effects of antibiotics, and 66.4% frequently monitored the side effects of antibiotics.

Table 4. Analysis of factors related to knowledge, attitudes, and practices of mothers about using antibiotics for children

Characteristics	Good knowledge (n=687) OR (95% CI)	Good attitude (n=684) OR (95% CI)	Good practice (n=622) OR (95% CI)
Age group			
≤ 25 years	-	-	-
26 to 29 years	1,46 (1,07 - 1,99)*	1,37 (1,01 - 1,87)*	1,58 (1,16 - 2,16)*
≥ 30 years	1,25 (0,94 - 1,66)	1,17 (0,88 - 1,55)	1,39 (1,04 - 1,85)*
Literacy			
Illiteracy/Primary or Secondary school	-	-	-
High school	1,16 (0,88 - 1,52)	1,11 (0,85 - 1,46)	0,96 (0,73 - 1,26)
Graduated or Post-graduated	3,13 (2,31 - 4,26)*	2,71 (2,00 - 3,67)*	2,49 (1,85 - 3,36)*
Employment			
Unemployed or Freelancer	-	-	-
Officer or civil servants	2,86 (2,03 - 4,02)*	2,33 (1,67 - 3,25)*	1,92 (1,39 - 2,65)*
Worker or Farmer	0,88 (0,68 - 1,14)	0,93 (0,72 - 1,20)	0,83 (0,64 - 1,07)
Family income			
≤ 10 million dongs per month	-	-	-
> 10 million dongs per month	1,44 (1,11 - 1,87)*	1,41 (1,08 - 1,83)*	1,31 (1,01 - 1,70)*
Attend a course on antibiotics for children			
Never	-	-	-
Used to	4,98 (2,33 - 10,6)*	3,01 (1,57 - 5,79)*	8,66 (3,67 - 20,4)*
*:p<0,05			

Table 4 shows that the age group 26 years to over 30 years; reached undergraduate or post-graduate education; worked as an Officer/civil servant; had a family income of more than 10 million dongs per month and attended a course on antibiotics for children are 5 factors which have a significant impact on better knowledge, attitudes, and practices of mothers about using antibiotics for children.

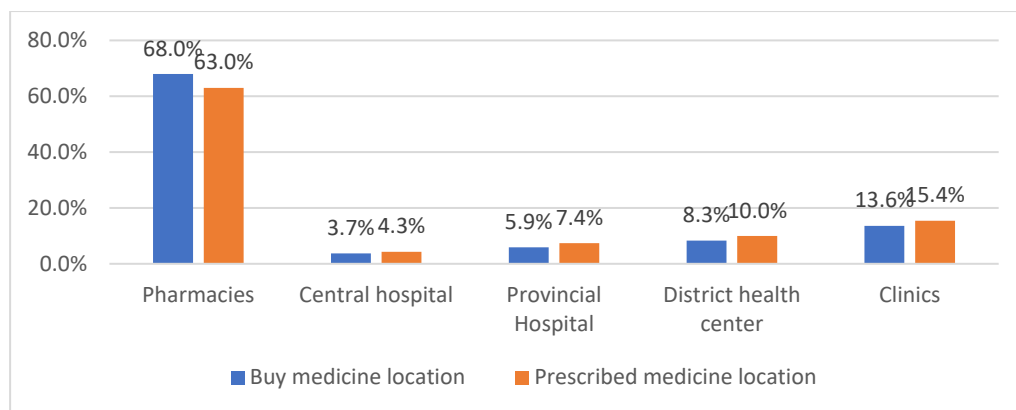


Figure 2. Distribution of place prescribing and places where mothers buy antibiotics

Figure 2 shows the place of antibiotic prescription and where to buy antibiotics for mothers was mainly at the pharmacy/drugstore with 63% and 68.5%, respectively. Moreover, in all hospitals and clinics, the study witnessed a higher percentage of prescribed medicine rather than purchase medication products. In detail, 3.7% of mothers buy medicine by them-self at central hospitals, 5.9% buy at provincial hospitals, 8.3% buy at the district health center, and 13.6% purchase at clinics. Regarding prescribed medicine, only 4.3% of prescribed medicine is in central hospitals, 5.9% is in provincial hospitals, and 8.3% is in district health centers.

DISCUSSION

Because of the high incidence of infectious infections and the ease with which antibiotics can be purchased without a prescription, arbitrary antibiotic prescribing is common in both industrialized and developing countries. As a result, indiscriminate antibiotic usage is frequent [13]. In some provinces, studies reveal that 40-60% of people purchase self-medication antibiotics, which are primarily used to treat cough and diarrhea [14]. In the research, 49.2 percent of moms had appropriate antibiotic practices, but 50.8 percent of mothers abused drugs. This rate is greater than that found in Ningbo, China with 20.3% [4]; Croatia with 28.2% [5]; Lima, Peru with 23.5% [3]; Lithuania with 31% [6]; and Mongolia with 42.3% [15].

The survey also revealed that just 33.6% of people were aware of the effects of antibiotics on microorganisms compare to research conducted in India (28%) [7]. When queried about the treatment's efficacy, only 53% are aware that antibiotics do not treat a fever or sickness in a child. A study of 503 caregivers in Mongolia found that the symptoms they often used antibiotics for in children were cough with 84%, fever with 66%, runny nose with 65%, and sore throat with 60% [15]. In terms of drug attitudes, more than half of moms still keep antibiotics at home and will skip doses if their children improve. This readily leads to antibiotic resistance in children during subsequent medicine usage, comparable to the results for parents in China, where 48.5 percent of parents carry antibiotics at home; in Lima, this number is up to 53.2 percent [3,4]. Antibiotics, according to parents, can help children recover faster from colds. or to stop taking them after the disease has gone away. is comparable to prior research [4,5,6]. In terms of drug usage practice for children, the majority of

moms said they followed the doctor's directions on dose and use. More than half of moms still purchase medications on their own and willingly cancel or stop using them after their child's symptoms have subsided. Concern about side effects is also minimal, as is interaction with medical personnel.

The results of the multivariate analysis show that age is the first influential factor that can be seen in other studies [5]. There is a statistically significant difference between young moms and mothers aged 26 or older in particular. Mothers with a high degree of education [7]; cadres and government servants with a high family income [6] (>10 million/month) have better knowledge, attitude, and practice. Although the number of mothers who have ever attended an antibiotics course for their children is relatively small, the difference it produces is significant: knowledge, attitude, and practice can be 3.01-8.66 times greater than the other group. Figure 2 depicts the sources of prescription and purchasing medications. Self-prescribing of antibiotics can occur at all levels of medicine. However, self-purchasing medications from pharmacies and drugstores are primarily for mothers, and antibiotics for children are similar to findings from previous studies [7,15]. Parents still feel that buying medicine over the counter is cheaper than going to the hospital [14], not only because of their mothers' lack of information and attitudes, but also the distance between the pharmacy and their home. Access to and usage of antibiotics from private sources is still uncontrolled.

CONCLUSION

A study conducted on 1334 mothers with children under 5 years old showed that 94.7% of mothers had ever known about antibiotics and used antibiotics for their children. Among them, the rate of having good knowledge with 54.3%, positive attitude with 54.1%, and good practice with 49.2% are still low. The prevalence of antibiotic abuse in children is 50.8% whose age from 26 to 30 years old, reached higher education level, had high family income, and attended a course on antibiotic use for children are factors related to increasing mothers' understanding, knowledge, and good practice of using antibiotics for children under 5 years old.

The government and organizations should employ courses or communication sessions for women with children under the age of five to increase antibiotic understanding and practice. Medical staff should pay greater attention to advising mothers on the content of where to get pharmaceuticals and use antibiotics as prescribed, monitor drug side effects, and antibiotic resistance during the evaluation and treatment process.

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Figure Legends

Figure 1. Mother's attitude about using antibiotics for children

Figure 2. Distribution of place prescribing and places where mothers buy antibiotics

Table Legends

Table 1. Demographic characteristics of study population

Table 2. Mother's knowledge about using antibiotics for children

Table 3. Mother's practice on antibiotic use in children

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