PARENTAL AWARENESS, APPROACH AND USE OF ANTIBIOTICS AMONG CHILDREN.

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Emergence of resistance to antimicrobials is on the rise – challenge to the medical profession. Children in developing countries suffer an annual average of six URTIs and impose a burden on the health care system.

Most URTIs are minor, of short duration, self-limiting and majority are caused by viruses.

Frequently antimicrobials are prescribed. Occurrence and spread of antibiotic resistance is due to inappropriate use of antimicrobials in both quantity and choice. Misuse or overuse promote public perception as preferred drug, encourages demand.
In Malaysia more than 50% of antibiotic use is from Primary care. Our study focuses on patient factors, mainly parents. This study aims to explore the parents' awareness, approach, and use of antibiotics for URTI in their children.

1. Excessive parental expectations
2. Lack of knowledge
3. Misconceptions of antibiotic effectiveness
Methods

Cross sectional questionnaire survey – convenient random sampling. Sample size of 183 was provisionally made by G power software, a total of 200 parents were selected for the study. Study period 10\(^{th}\) July to 17\(^{th}\) July 2014. Informed consent was taken. A child of 1 month to 12 years old with URTI symptoms accompanied by one of the parent – included in the study. Exclusion criteria:

- Fever lasting more than 7 days
- Chronic disease
- Lower resp tract symptoms
- Not accompanied by their parent

Questionnaire – Bahasa Melayu and English
Researcher – available to answer any questions or misunderstandings.
Questionnaire included four parts –

First section comprised of demographic data of parents, occupation and educational background.

Second part assessed awareness by sixteen true/false statements. Depending on correct answers categorized into poor (0-4), good (5-12), and very good (13-16).

Third Part contained 8 statements – has to mark as agree / disagree. Assessed the approach as good or bad.

Fourth section related to consumption - Six statements asking source, completion and use of left over antibiotics.

All data were analyzed by using SPSS 17.0. Descriptive statistics to summarize, influence of demography – tested with Chi-square test.

All respondents were well informed about the study and assured the confidentiality of their participation.
# RESULTS

**Summary of demographic characteristics of respondents**

<table>
<thead>
<tr>
<th>GENDER</th>
<th>No of respondents (200)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALE</td>
<td>71</td>
<td>35.5</td>
</tr>
<tr>
<td>FEMALE</td>
<td>129</td>
<td>64.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age groups</th>
<th>No Parents (200)</th>
<th>Percentage(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 20 yrs</td>
<td>3</td>
<td>1.5</td>
</tr>
<tr>
<td>21 - 30 yrs</td>
<td>67</td>
<td>35.5</td>
</tr>
<tr>
<td>31 – 40 yrs</td>
<td>65</td>
<td>32.5</td>
</tr>
<tr>
<td>≥ 40 yrs</td>
<td>65</td>
<td>32.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race</th>
<th>No Parents (200)</th>
<th>Percentage( % )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malay</td>
<td>153</td>
<td>76.5</td>
</tr>
<tr>
<td>Chinese</td>
<td>6</td>
<td>3.0</td>
</tr>
<tr>
<td>Indians</td>
<td>39</td>
<td>19.5</td>
</tr>
<tr>
<td>others</td>
<td>2</td>
<td>1.0</td>
</tr>
</tbody>
</table>
### Distribution of parents according to their occupation

- **Self employed**: 37%
- **Unemployed**: 8%
- **Student**: 8%
- **Housewife**: 48%
- **Semi-expert manuals**: 21%
- **Expert manuals**: 18%
- **Semi-professional**: 20%
- **Professional**: 34%
- **Retired**: 11%

### Distribution of parents according to their educational level

- **No formal education**: 1%
- **Primary school**: 7%
- **Secondary school**: 48%
- **Vocational**: 21%
- **Pre-U**: 16%
- **Tertiary**: 7%
Good awareness of 70% for antibiotics usage that is significant with age groups. Parents with higher education scored better.

Antibiotics relieve fever ticked by 76%. Viral fever can be treated by antibiotic was believed by 91%.

Majority of them could not categorize augmentin (97%), penicillin (72.5%) as antibiotics but identified clarinase (86.5%) as antibiotic.

### Level of Awareness Among Respondents

<table>
<thead>
<tr>
<th>Awareness</th>
<th>Total score</th>
<th>n = 200</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>0 - 4</td>
<td>56</td>
<td>28</td>
</tr>
<tr>
<td>Good</td>
<td>5 - 12</td>
<td>140</td>
<td>70</td>
</tr>
<tr>
<td>Very good</td>
<td>13 -16</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

- **Level of awareness on Antibiotics Use**
  - Poor: 28%
  - Good: 70%
  - Very good: 2%

Antibiotic resistance was unaware in 66.5%.
RESULTS

- In Relation with approach towards antibiotic 79.5% expects and 56% even demand antibiotics from the doctor for common cold and fever.
- With regard to the usage 49% acquired information from doctor & health personnel
  - Parents (87.5%) said completion of the treatment course is necessary.
  - More than 70% parents never keep the leftover for future use or share with family members.
  - Higher educational background showed good antibiotic usage.
  - Around 50% parents did seek antibiotics from outside and shared them with family members.
<table>
<thead>
<tr>
<th>Source of Information</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors and Health Personnel</td>
<td>98 (49%)</td>
</tr>
<tr>
<td>Hospital/ Clinic Leaflets</td>
<td>52 (26%)</td>
</tr>
<tr>
<td>Family &amp; Friends</td>
<td>19</td>
</tr>
<tr>
<td>Magazines and Newspaper</td>
<td>18</td>
</tr>
<tr>
<td>Television and Radio</td>
<td>13</td>
</tr>
</tbody>
</table>

Likelihood of antibiotic prescription by doctors in health centre

- Government clinic/hospital: 63%
- Private clinic/hospital: 28%
- Undetermined: 9%
**Discussion**

- Main Idea of study was to assess the awareness, approach and usage of antibiotics among the parents.
- Study showed 70% had good awareness, except majority (91%) believed that antibiotics are effective in viral and helped to reduce fever (76%). *Comparable to Penang, Malaysia 2011 (67.2%) and New Jersey 2008 (70%).*
- Respondents lacked the information to differentiate between antibiotics and other drugs commonly used.
- Most respondents 87.5% had correct understanding of the need of completion. *Our study noted higher compared to others Hong Kong 58% and Taiwan 50.1%.*
- Parents expectation (79.5%) and demand (56%) for antibiotic was higher with our study. *Belief of public that antibiotics shorten the duration of illness. This coincides with other studies.*
- Doctor & health personnel (49%) – major source of information, *other studies indicated books, magazines, television and internet. Limited interaction due to lack of time due to patient waiting.*
- Self medication incidence is low compared to other studies. *Controlled sale of antibiotics.*
Discussion

Limitations of study:

One government health centre
Convenient random sampling
Honesty & recall of respondents, Questionnaire understanding
Similar kind of studies in different settings

CONCLUSIONS:

- Study documented – certain areas in which parental awareness – lacking, resulting in inappropriate approach and usage.
- High parental expectations and demand –minimized by proper counselling. Health beliefs and parents awareness has to be changed – *educational campaigns, may eliminate misconceptions among the consumers*.
- More education is needed for both *doctors and parents* –appropriate use. This helps to reduce the antibiotic use and subsequent associated bacterial resistance.
"Been to the doctor?"

"Yes, said I have a virus..... and gave me some antibiotics!!"