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Assessment of attitudes and practices of young Malaysian
adults about antibiotics use: a cross-sectional study

Original Research

Assessment of attitudes and practices of young Malaysian adults about antibiotics use: a cross-sectional study

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Abstract

Objective: The present study was aimed to evaluate the practices and attitudes of young Malaysian adults towards the use of antibiotics, and to determine the socioeconomic factors associated with the antibiotic use.

Methods: A survey was carried in Cheras community by approaching a conveniently selected sample of 480 participants. A pre-tested questionnaire was used for data collection.

Result: Of 480 participants approached, 400 agreed to participate in this study, giving a response rate of 83.3%. The study results showed that 42.75% of the participants exhibited poor attitudes towards antibiotic usage. Chinese race and high income were significantly associated with the positive attitudes towards antibiotic usage. It is shown that the practice of the participants towards antibiotics was relatively poor. The majority of participants agreed that they do not consult a doctor for minor illnesses (64%). The main reason for not consulting a doctor was the high fees of consultation (34.25%) and the inconvenience of visit (29.25%). However, a large proportion of respondents (77.5%) agreed that there is a need to enhance antibiotic education among public.

Conclusion: The study results identified some crucial gaps in the attitudes and practices of Cheras community about the use of antibiotics. Thus, improving the public knowledge and changing their attitude towards antibiotic use along with proper interventions to regulate the ease of their availability would play a significant role for the effective use of antibiotics in the community.

Keywords

Patient Medication Knowledge; Health Knowledge, Attitudes, Practice; Anti-Bacterial Agents; Young Adult; Self Medication; Cross-Sectional Studies; Malaysia

INTRODUCTION

Indiscriminate use of antibiotics may lead to the development of antimicrobial resistance.[1] Lack of knowledge, awareness, and insufficient patient education about antibiotics by the healthcare providers are the predisposing factors for the development of such resistance.[2] The issue of antibiotic resistance has been termed as a major threat to public health security in a World Health Organization report, 2007.[3] According to

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WHO Global Strategy for Containment of Antimicrobial Resistance, despite the ability to stay ahead of the pathogens by development and modification of new drug in the 1950s and 1980s, the current condition is not promising.[3] With the pipeline of new drug running dry and incentives for new antimicrobial being low, the rational use of the antibiotics and patient education is hence pivotal.[3]

The relationship between the development of resistance and inappropriate use of antibiotics has been clearly modeled in the previous studies.[4-6] In Europe, the prevalence of antibiotic resistance varies among different countries and such prevalence not only depends upon the lack of knowledge and awareness towards the development of microbial resistance but also depend upon inappropriate drug regulation in the countries.[7-9] A study conducted in Jordan has shown that the prevalence of self-medication with antibiotics is alarmingly high.[10] It has been observed in a number of countries that the laws that prevent over the counter dispensing of antibiotics exist but not being followed in community settings.[11]

In Malaysia, antimicrobial agents are the largest group of drugs used in healthcare settings besides antidiabetic, antihypertensive and lipid-lowering drugs.[12] The Malaysian Statistic on Medicine 2009 & 2010 reported a 16% increase in the use antimicrobials in 2010 compared to 2009.[12] It has also been shown that among antimicrobial agents the use of penicillin has been increased by more than 10.5% in 2010 when compared to 2009.[12] lack of public knowledge towards antibiotic is a major factor responsible for inappropriate use of antibiotics.[13-15] In a study conducted

among general public in Penang, Malaysia, almost half (47.3%) of the respondents expected antibiotic to be prescribed in a common cold.[13]

The International Pharmaceutical Federation (FIP) Statement of Policy Control on Antimicrobial Medicines Resistance (AMR) as well as WHO Global Strategy for Containment of Antimicrobial Resistance stresses the state members to launch educational and awareness campaign in response to antibiotic resistance.[16] In order to tailor suitable measures to fight against antimicrobial resistance in view of these recommendations, the investigation of knowledge about antibiotics and the factors influencing the use of antibiotic without prescription among Malaysian population is thus important.

Most of the studies concerning the use of antibiotic in Malaysia are limited to the evaluation of general public knowledge and attitudes towards antibiotics.[13-15] Literature suggest that people in the younger age group are more likely to utilize antibiotics and have poor knowledge of antibiotics use.[17] There is a paucity of data relating to the attitudes and practice of young adults towards antibiotics use. The objective of this study was to assess the attitudes and practice of young Malaysian adults towards antibiotics use.

METHODS

Study design, site, and participants

A descriptive, cross-sectional study was conducted for a period of 3 months from March to May 2016, with the main aim to assess the attitudes and practices of young Malaysian adults towards antibiotics use. The study was conducted in the city of Cheras, located in the southeast of the federal territory of Kuala Lumpur. The population of Cheras is about 232,306, of which 53.9% population are Chinese, 34.1% are Malay, and 10.2% are Indians.[18] Participants were excluded in case they were not willing to participate in this study or they were not residents of the respective locality.

Sampling and sample size

The sample size was determined using Krejcie and Morgan's sample size calculator.[19] To generate a confidence level of 95% with a 5% margin of error, a sample size of at least 384 was required. However, by assuming a response rate of 80%, a sample size of 480 was calculated for this study.

A convenience sampling technique was used to recruit a sample of 480 participants from an urban area which is Cheras, Malaysia. Participants were approached at places of common interest (shopping malls, supermarkets, educational institutes, restaurants, and utility stores) for data collection. These locations were chosen because of the availability of the socio-economically diverse population.

Survey instrument

A self-administered questionnaire was designed to collect the data from the participants. A first draft of the questionnaire was designed after a thorough literature review.[13-15,20-22] The content of the drafted questionnaire was validated by 2 academicians from the pharmacy and medical background, and one practicing pharmacist, all of whom were expert in infectious disease and survey-based research. After making necessary adjustments suggested by the experts, the questionnaire was sent to a sample 20 young adults for face validity. The final version of the question was then subjected to reliability testing. The value of Cronbach's alpha for attitude section and practice section was calculated as 0.73 and 0.76 respectively. The final questionnaire was then translated into Malay (the national language of Malaysia) and then was back-translated into English.

The questionnaire consisted of three sections. The first section consisted of items related to demographic information of the participants. The second section evaluated the attitudes of participants towards antibiotics. Participants' responses were recorded based on a 3-point Likert scale of agreement. The third section assessed the practices of participants towards antibiotics usage. A dichotomous scale of 'Yes' or 'No' was used to assess the understanding of participants regarding the use of antibiotics.

Data analysis

The responses of the participants were analysed using SPSS v.20. Descriptive analysis was used to express the demographic information in frequencies and percentages. The attitude scores ranged from 0-12. Each statement was labelled with positive or negative attitudes. A score of 1 was given to positive attitude while a score of 0 was given to negative attitude towards every statement. Attitude scores for individual statements were summed up and calculated to give the total attitude score of a participant. A cut-off level of <7 was set for negative attitude and ≥7 for a positive attitude. Similarly, the practice scores ranged from 0-10. Each statement was labelled with good or poor practices. A score of 1 was given to good practice while a score of 0 was given to poor practice towards every statement. Attitude scores for individual statements were summed up and calculated to give the total attitude score of a participant and the cut-off level of <6 was set for poor practice and ≥6 for good practice. Both positive and negatively worded statements are presented in the attitudes and practices section. The association of attitude and practice scores with the demographic variables was assessed by logistic regression analysis. A p-value of <0.05 was considered to be statistically significant.

Ethical approval

The study was ethically approved by Institutional Review Board of Discipline of Social and Administrative Pharmacy, School of Pharmaceutical Sciences, University Sains Malaysia. Participants were briefed about the objectives of this study. Written consent was taken from the participants prior to data collection. Participation of respondents was voluntary and their responses were dealt with the high level of confidentiality and anonymity.

RESULTS

All the questionnaires were filled by the participants and were returned with a response rate of 83.3%. Respondent's demographic characteristics are summarised

Table 1. Summary of demographic characteristics of the participants		
Demographic Data	**Frequency**	**%**
Age		
18-24	317	79
25-35	83	21
Gender		
Male	171	42.75
Female	229	57.25
Race		
Chinese	241	60.25
Indian	26	6.5
Malay	118	29.5
Other¥	15	3.75
Marital status		
Single	31	77.75
Married	89	22.25
Educational level		
Secondary school	61	15.25
College	79	19.75
University	260	65
Employment status		
Employed	118	29.5
Self-employed	38	9.5
Unemployed	133	33.25
Housewife	15	3.75
Others	96	24
Occupation		
Health-care related	115	28.75
Non health-care related	285	71.25
Monthly income (Ringgits)		
<1000 MYR	29	57.25
1000-3000 MYR	87	21.75
3000-5000 MYR	53	13.25
>5000 MYR	31	7.75
Do you have any kind of health insurance?		
Yes	249	62.25
No	151	37.75
¥ = Filipino, Burmese, Indonesian, Vietnamese		

Table 2 represents the attitudes of the participants towards antibiotics usage. The results show that majority of participants had negative attitudes towards statements like "Antibiotics are effective for fever" (n=214, 53.5%) followed by "Antibiotics are safe drugs" (n=189, 47.25%). Almost half of the respondents (n=199, 49.75%) reported that they expect doctors to prescribe antibiotics for their viral infection. A large proportion of respondents (n=310, 77.5%) agreed that it is necessary to enhance antibiotic education among the public.

The attitude score ranged from 0-12 points with a mean score of 6.72 (SD=2.46) and a median score of 7.00. Overall 42.75% of participants exhibited poor attitude towards antibiotic usage. The attitude towards the usage of antibiotics was significantly affected by the race and income. Chinese were more likely to have a positive attitude towards antibiotics usage when compared to Malays (OR=1.836, $p<0.05$). Participants with tertiary education showed positive attitudes when compared to those who had their education only up to secondary school (OR=1.689, $p<0.05$). The attitude of healthcare workers was almost twice better than non-healthcare workers (OR=1.806, $p<0.05$). Income of the participants also appeared to be a significant predictor of their attitude, as the attitude of the participants with a high income of >5000 Malaysian ringgits were two times better than those with a low income of <1000 ringgits (OR=2.071, $p<0.05$). The association of demographic variables with the attitude score of the participants is summarized in Table 3.

The practice of participants towards antibiotics usage is presented in Table 4. Almost one-third of the respondents (n=121, 30%) agreed that they use antibiotics when they suffer from common cold. while 158 participants (39.5%) reported that they discontinue antibiotic once symptoms subside. About 90.5%, (n=360) of the participants stated that they will not return the leftover antibiotics to the pharmacist/physician.

Table 5 represents the common source of antibiotics and reasons for not consulting the physicians. About 25% (n=100) of the participants stated that friends were the most common source of information about antibiotics. The clinic was the most common source for the participants to receive antibiotics (n=314, 78.5%). A significant number (n=256, 64%), of respondents reported that they do not see a doctor for a minor illness.

in Table 1. The mean age of the respondents was 28.7±7.4 (years). Of the 400 respondents, 171 (42.75%) were male and 229 (57.25%) were female. The majority of the respondents were Chinese (60.25%). About 311 (77.75%) respondents were unmarried. All the respondents (100%) had completed at least secondary school. One hundred and fifty-six (39%) respondents were employed. A more than quarter of the respondents (28.75%) worked in health-related occupation while more than half of the respondents (57.25%) had a monthly income of less than MYR1000. A total of 249 (62.25%) respondents were covered by health insurance.

Table 2. Attitude of participants towards antibiotic usage			
Attitude towards Antibiotic Usage	**Agree**	**Unsure**	**Disagree**
1. Antibiotics are safe drugs.	189* (47.25%)	153 (38.25%)	58 (14.5%)
2. Antibiotics are effective for fever.	214 (53.5%)	125 (31.25%)	61* (15.25%)
3. Antibiotics are effective for cold.	171 (42.75%)	157 (39.25%)	72* (18%)
4. Antibiotics are effective for headache.	98 (24.5%)	179 (44.75%)	123* (30.75%)
5. I expect the doctors to prescribe me antibiotics for my bacterial infection.	262* (65.5%)	110 (27.5%)	28 (7%)
6. I expect the doctors to prescribe me antibiotics for my viral infection.	199 (49.75%)	127 (31.75%)	74* (18.5%)
7. I keep antibiotics at home in case of emergency.	156 (39%)	58 (14.5%)	186* (46.5%)
8. I suggest my antibiotics to my family members who need it.	117 (29.25%)	66 (16.5%)	217* (54.25%)
9. Antibiotics can be taken according to product leaflet/label without consulting doctors.	76 (19%)	94 (23.5%)	230* (57.5%)
10. Expiry date of antibiotics should be checked before administered.	355* (88.75%)	37 (9.25%)	8 (2%)
11. Antibiotic resistance is dangerous for the society.	171* (42.75%)	191 (47.75%)	38 (9.5%)
12. It is necessary to enhance antibiotic education among public.	310* (77.5%)	81 (20.25%)	9 (2.25%)
* Positive attitudes			

Table 3. Association of demographic characteristics with attitude towards antibiotics.				
	Attitude towards antibiotics		**p-value**	**Adjusted* OR (95% CI)**
	Positive	**Negative**		
Age				
18-25	133 (42.6%)	184 (57.3%)		1.00
25-35	38 (45%)	45 (55%)	0.383	0.963 (0.263-1.669)
Gender				
Male	71(41.5%)	100 (59%)		1.00
Female	100 (44%)	129 (56%)	0.289	1.077 (0.697-1.665)
Race				
Malay	55 (46%)	64 (54%)		1.00
Chinese	99 (41%)	142 (59%)	0.047	1.836 (1.059-2.013)
Indians	11 (42.3%)	15 (57.6%)	0.950	1.030 (0.409-2.595)
Others	6 (42.8%)	8 (57%)	0.794	1.167 (0.365-2.224)
Marital status				
(unmarried)	132 (42.7%)	177 (57.2%)		1.00
Married	39 (42.8%)	52 (57%)	0.265	0.975 (0.164-2.643)
Education				
Secondary school	23 (37.7%)	38 (62%)		1.00
College	39 (48.7%)	41 (51.2%)	0.228	0.777 (0.460-1.313)
University	109 (42%)	150(58%)	0.056	1.689 (1.061-3.316)
Employment				
Unemployed	58 (46.2%)	78 (57.3%)		1.00
Employed	40 (34%)	77 (65.8%)	0.340	1.308 (0.753-2.274)
Self employed	21 (52.5%)	19 (47.5%)	0.207	1.575 (0.778-3.191)
House wife	8 (53%)	7 (47%)	0.523	0.753 (0.315-1.801)
Others	44 (47.8%)	48 (52%)	0.522	0.652 (0.176-2.417)
Occupation				
Non-healthcare	127(44.4%)	159 (55.5%)		1.00
Healthcare	44 (38.5%)	70 (61.4%)	0.054	1.806 (1.323-2.431)
Income				
<1000	107(46.3%)	124 (53.6%)		1.00
1000-3000	35(37.2%)	59 (62.7%)	0.210	1.471 (0.805-2.689)
3000-5000	20(42.5%)	27 (57.4%)	0.450	1.396 (0.588-3.316)
>5000	9(32%)	19 (67.8%)	0.044	2.071 (1.308-6.056)
*Adjusted for age, gender, race, education, employment status, occupation, income				
Overall predictive accuracy of the model is 62% omnibus test of model coefficients:-2 Log Likelihood= 524.4, Nagelkerke R square= 0.071. Statistically significant variables are in bold.				

Table 6 represents the association of demographic characteristics with practice towards antibiotics. Gender, race, and income were significantly associated with the practices of participants about antibiotics usage (p<0.05). The practices of female participants were better than their male counterparts (OR=1.934, p<0.05). Similarly, Chinese participants had good practices than Malay participants (OR=3.309, p<0.05). Income of the participants also appeared to be a significant predictor of their practice. Participants with a monthly income of >3000 ringgits had better practices than those with a lower income of <1000 ringgits (OR=2.498, p<0.05).

DISCUSSION

This study evaluated the attitudes and usage of antibiotics among young adults in an urban area of Cheras, Kuala Lumpur, Malaysia. Antibiotic use by the general public is common practice worldwide[30]. With the rise in antibiotic resistance over the past decade, the factors for use of antibiotics without prescription among the general public should be clearly understood. The response rate in this study was about 96% which was comparatively high as compared to other studies conducted previously on the same subject.[13,15,22]

Only 18.75% of respondents reported using antibiotics within the past month which was lower than the 28.9% reported in the northern state of Penang[13] and 29.2%

Table 4. Antibiotics practices among participants.		
Statements	**Yes**	**No**
1. I use antibiotics when I have a common cold.	121 (30.25%)	279 (69.75%)*
2. I use antibiotics when I have a cough.	120 (30%)	280 (70%)*
3. I use antibiotics whenever I am not feeling well.	114 (28.5%)	286 (71.5%)*
4. I use leftover antibiotic.	61 (15.25%)	339 (84.75%)*
5. I keep antibiotic for future use.	115 (28.75%)	285 (71.25%)*
6. I take antibiotic without consulting the doctor most of the time.	75 (18.75%)	325 (81.25%)*
7. I discontinue antibiotics once symptoms subside.	158 (39.5%)	242 (60.5%)*
8. I return the leftover antibiotics to the pharmacist/doctor	30 (9.5%)*	360 (90.5%)
9. I consult pharmacist for the modification of my prescription	141 (35.25%)*	259 (64.75%)
10. I follow correct dosage instruction	295 (73.75%)*	105 (26.25%)
*Good practice		

Table 5. Common source of antibiotics and reason for not consulting the physician		
Statements	Yes	No
From whom would you get the information about antibiotics?		
Friends	100 (25%)	300 (75%)
Community pharmacists	62 (15.5%)	338 (84.5%)
Books/ Websites	24 (6%)	376 (94%)
School/ University	19 (4.75%)	381 (95.25%)
I usually obtain antibiotic from:		
Hospital	172 (43%)	228 (57%)
Clinic	314 (78.5%)	86 (21.5%)
Retail pharmacy	107 (26.75%)	293 (73.25%)
Street vendor	3 (0.75%)	397 (99.25%)
Use someone else's	22 (5.5%)	374 (4.5%)
What are your reasons for not consulting physician:		
I feel inconvenient to go see physician	117 (29.25%)	283 (70.75%)
I find it expensive to go see physician	137 (34.25%)	263 (65.75%)
I take antibiotics based on advice from family members or friends	59 (14.75%)	341 (85.25%)
I know how to treat my own illness	94 (23.5%)	306 (76.5%)
I have unpleasant experience from previous physician visits	22 (5.5%)	378 (94.5%)
I don't see doctor for minor illness	256 (64%)	144 (36%)

reported in Shah Alam[15] but higher than 16.5% reported in Putrajaya.[22] The findings have shown that small study population was less knowledgeable pertaining to the indication of antibiotics for the treatment of common cold and cough. The proportion of respondents who thought antibiotics are effective for common cold and cough was 30.25% and 30% respectively, which is less than the studies conducted in Penang (38%)[13] and Putrajaya (82%).[22] This might be due to frequent dispensing of antibiotics for a self-limiting viral infection that influenced the public perception in the usage of antibiotics in treating different diseases.[13] The misuse of antibiotics will increase the risk of antibiotic resistance.[23] In order to prevent the development of resistance, strict measures need to be taken to improve the high disciplinary regulations which can avoid the ease with which antibiotics can be acquired from the community pharmacies in Malaysia. Furthermore, vigilant procedures need to be implemented to monitor the irrational dispensing of antibiotics from community pharmacies. Moreover, a fine should be imposed on the dispensing pharmacists and the pharmacy owners who dispense antibiotics without a medical prescription issued by licensed physicians.

Most of the respondents (60.5%) had correct knowledge of the need to complete the full course antibiotics even if their symptoms subsided. This finding is relatively better than previous studies conducted in Putrajaya and Shah Alam.[15,22] However, a research conducted in Penang showed a better understanding of participants about the completion of antibiotic course than this study.[13] These findings show that a large proportion of participants (39.5%) discontinue their antibiotics when their symptoms subside. Given the high proportion, this could have far reaching implications that eventually leads to the development of resistance towards the antibiotics in Malaysian community. About 73.75% of respondents followed the correct dosage instructions which were higher than reported in Putrajaya. Only 9.5% of participants returned the leftover antibiotics to the pharmacist or doctor which is in line with another Malaysia study conducted in Cheras.[14] Our finding on keeping antibiotic for future use by the participants was comparable to previously published studies.[13,22]

Inappropriate regulation over the availability of antibiotics could partly contribute to improper antibiotics use in the community. Only a small proportion (18.75%) of respondents claimed that they were using antibiotics without consulting the doctor most of the time. This finding confirms the previously published result where 23.9% of respondents obtain their antibiotics after a consultation with a doctor.[22] This study found that the common sources of obtaining antibiotics were clinics (78.5%) which is slightly higher than the one reported by Fatokun.[14] The main reason for not consulting a doctor in current study was reported by the participants as an unnecessary to see doctor for minor illness (64%), high cost of visiting doctor (34.25%) and inconvenience (29.25%). All these factors might be due to financial constraint and lack of healthcare insurance for the general public which may urge the public to use antibiotics before consulting a healthcare professional.[24] This will increase the risk of incorrect diagnosis, infrequent but severe adverse reactions, dangerous drug interactions, an incorrect manner of administration and incorrect drug and dose.[25]

Public knowledge and attitude towards antibiotic usage have a pivotal impact on treatment outcomes as it is stated by Quick et al that patients/consumers intervention plays a significant role in reducing the frequency of antibiotic misuse.[26] Our data suggest that the participants expected an antibiotic to be prescribed by their physicians for the common cold and bacterial infection. This result is comparable to the findings of studies conducted in shah alam[15] and penang.[13] This indicates that the study population attitude was poor towards the correct indication of antibiotics. The reasons for this negative finding could be attributed to the use of term "germ" during provision of medical advice to the public instead of utilizing the more specific term "bacteria" or "virus".[13] Moreover; frequent prescribing of antibiotics by physicians for viral respiratory infections has affected public view of its effectiveness for viral infections.[24]

In the current study, a considerable proportion of participants (39%) agreed that they keep antibiotics at home in case of emergency; however, this result is relatively better than the previous findings that reported a proportion of 50%, 62.6%, 80.1%, and 83%,

Table 6. Association of demographic characteristics with practice towards antibiotics				
	Practice towards antibiotics		**p-value**	**Adjusted* OR (95% CI)**
	Poor	**Good**		
Age				
18-25	103 (33%)	216 (66.9%)		1.00
25-35	28 (32.8%)	53 (67.1%)	0.688	0.788 (0.224-2.116)
Gender				
Male	53 (30.9%)	118 (69%)		1.00
Female	78 (34%)	151 (65.9%)	0.035	1.934 (1.354-2.876)
Race				
Malay	57 (47.8%)	62 (52.1%)		1.00
Chinese	58 (24%)	183 (75.9%)	0.004	3.309 (1.964-5.573)
Indians	10 (38.4%)	16 (61.5%)	0.405	1.492 (0.582-3.824)
Others	6 (42.8%)	8 (57.1%)	0.678	1.282 (0.397-4.141)
Marital status				
(unmarried)	100 (32.3%)	209 (67.6%)		1.00
Married	31 (34%)	60 (65.9%)	0.396	1.204 (0.387-2.465)
Education				
Secondary school	20 (32.7%)	41 (67.2%)		1.00
College	27 (33.7%)	53 (66.2%)	0.469	1.306 (0.635-2.687)
University	84 (32.4%)	175 (67.5%)	0.667	1.135 (0.637-2.022)
Employment				
Unemployed	37 (27.2%)	99 (72.7%)		1.00
Employed	34 (29%)	83 (71%)	0.300	1.376 (0.752-2.519)
Self employed	19 (47.5%)	21 (52.5%)	0.590	0.815 (0.388-1.713)
House wife	8 (53.3%)	7 (46.6%)	0.028	0.350 (0.137-0.891)
Others	33 (35.8%)	59 (64%)	0.063	0.267 (0.066-1.076)
Occupation				
Non-healthcare	97 (33.9%)	189 (66%)		1.00
Healthcare	34 (29.8%)	80 (70%)	0.075	1.543 (1.014-2.605)
Income				
<1000 MYR	82 (35.4%)	149 (64.5%)		1.00
1000-3000 MYR	29 (30.8%)	65 (69%)	0.043	1.957 (1.023-3.745)
3000-5000 MYR	13 (27.6%)	34 (72.3%)	0.016	2.498 (1.278-6.385)
>5000 MYR	7 (25%)	21 (75%)	0.143	2.371 (0.747-7.525)

*Adjusted for age, gender, race, education, employment status, occupation, income
Overall predictive accuracy of the model is 70.5% omnibus test of model coefficients:-2 Log Likelihood= 464.6, Nagelkerke R square= 0.137. Statistically significant variables are in bold.

respectively.[19,15,13,22] Similarly, 29.5% respondents agreed that they suggest antibiotics to their family members, which is slightly lower than the study done in Shah Alam (32.1%)[15] but comparatively higher than the study done in Penang (11.8%)[13] and Putrajaya (17.0%).[22] A large proportion of respondents (42.5%) agreed that antibiotics can be taken without consulting doctors. These findings suggest poor attitude and practice of Cheras community towards the use of antibiotics. Moreover, 47.75% respondents were unsure that if antibiotic resistance is dangerous for the society. On the contrary, the majority of respondents (77.5%) agreed on the need to enhance antibiotic education among the public.

Limitations

As with all self-reported data the results of this survey may have the potential for recall bias. While this study was to assess the attitude and practice of young adults towards the antibiotic usage, the results of this study can be generalized only to those who are young adults and have taken self-administered antibiotics within the past 1month.

As the study sample was conveniently selected from an urban area, the results of this study may not be generalized to the rural population.

CONCLUSIONS

The findings of this study identified some crucial gaps in the attitudes and practices of cheras community about the use of antibiotics. These findings emphasized on the need to improve basic knowledge of antibiotics in the cheras community. Moreover, regulatory efforts are required to scrutinize the over the counter availability of antibiotics to general public.

CONFLICT OF INTEREST

None declared.

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