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A COMPARISON OF THE KNOWLEDGE, ATTITUDES AND PRACTICES OF PEDIATRIC RESIDENTS IN PUBLIC AND PRIVATE HOSPITALS ON ADOLESCENT IMMUNIZATION

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ABSTRACT

Objective: To evaluate the differences in the knowledge, attitudes and practices on adolescent immunization between pediatric residents in public and private hospitals.

Study design: Cross sectional analytical study

Setting: A survey was done through self- administered questionnaires among pediatric residents in 3 private hospitals and 1 public tertiary hospital. Each respondent completed a questionnaire that contained 21 items on general knowledge, attitudes and practices regarding adolescent immunization.

Results: Seventy six completed questionnaires were included in the study. Residents from public and private hospitals had no significant difference with regards to knowledge on adolescent immunization. There was adequate knowledge regarding the vaccines that were recommended for adolescents. However, more than 50% of respondents were unable to identify correct immunization schedules for the different vaccines. There was generally a positive attitude towards adolescent immunization. However, residents from the public hospital tend to disagree that safe, effective and affordable vaccines were available and easily accessible for patients. With regards to practices, the survey also revealed that residents from the public hospital administer vaccinations to fewer adolescent patients compared to their counterparts in private hospitals.

Conclusion: Pediatric residents from the public and private hospitals have comparable knowledge on adolescent immunization. However, knowledge on immunization schedules should be enhanced. Most physicians support adolescent immunization. But this was not completed by practices that actually promote adolescent vaccination among residents in the public hospital. A more detailed survey on the knowledge, attitudes and practices of pediatric consultants and general practitioners on adolescent immunization will be valuable in improving adolescent health care policies.

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INTRODUCTION

Immunization represents a remarkably successful and very cost-effective means of preventing infectious diseases. As a result of routine childhood immunizations, the occurrence of the once common contagious diseases declined markedly in the United States and other countries in the second half of the 20th century.[1] To sustain these gains and reach the ultimate goal of eradicating selected diseases, constant vigilance and meticulous attention to immunization was required. Additional gains were possible by immunizing an even higher percentage despite the success of infant and childhood vaccination programs. an estimated 35 million adolescents in the United States were at risk for developing one or more vaccine-preventable diseases.[2] These age group may include persons who escaped natural infection and who were not immunized with all recommended vaccines, received appropriate vaccines but at too young an age, received incomplete immunization regimens or failed to respond to vaccines administered at the appropriate ages.[3] In the United States, most persons infected with hepatitis B virus acquired their infection as young adults or adolescents.[4] Of the 140,000 – 320,000 new cases of hepatitis B each year, over 70 % affect adolescents and young adults.[5] In the 1980s, measles outbreaks occurred among school age children even though over 98% had previously received a measles-containing vaccine.[6] An outbreak of mumps occurred in the Mid-Ulster area of Northern Ireland between November 1999 and August 2000, with 729 cases notified. Three hundred sixteen (95.2%) of these confirmed cases were in the age range of 9-19 years old.[7] Furthermore, approximately 140,000 persons in the United States were infected with hepatitis A virus. The highest rates of disease occur among persons 5-14 years of age.[4]

Traditionally, less emphasis has been placed on adolescent vacination compared to infant and childhood programs. Adolescent immunization rates remain low. In the United States, data from a sero survey conducted in Minnesota indicated that 62% of persons 18-39 years of age lacked adequate protection against diphtheria. An estimated 20 % of children remain susceptible to

varicella, and the rate of complications following varicella was greatest in persons 15 years of age or older.[9] In the Out-Patient Department of the Department of Pediatrics of the Philippine General Hospital, a total of 2,517 patients were seen at the Adolescent clinic for the year 2001. Of these, only 12 patients were vaccinated with tetanus toxoid. From January – August 2002, a total of 1,741 patients were seen at the Adolescent clinic and only 8 patients were given hepatitis B vaccinations, 4 patients were given MMR and only 6 patients were given tetanus toxoid. Hence, a better understanding of the factors influencing adolescent immunization is needed.

The intent of this paper is to evaluate the knowledge, attitudes and practices on adolescent immunization of pediatric residents in a training hospital in the hope that certain areas that need intervention can be identified in order to improve adolescent health care in our country.

OBJECTIVES

General Objective

To determine and compare the knowledge, attitudes and practices of pediatric residents on adolescent immunization.

Specific Objectives

1. To determine and compare knowledge regarding adolescent immunization among pediatric residents in public and private hospitals.
2. To determine and compare the various attitudes on adolescent immunization among pedictric residents in public and private hospitals.
3. To determine and compare the practices of pediatric residents in public vs. private hospitals on adolescent immunization.
4. To identify possible barriers preventing adolescent immunization.

METHODOLOGY

A cross sectional analytical design was used in this study. This was conducted among pediatric residents of Philippine General Hospital and 3 private training hospitals, namely, Manila Doctor's Hospital, Medical Center Manila, and San Juan de Dios Hospital. The sample size was computed using a shareware from Mc Master University for sample size calculation. The smallest significant difference was set at 1.5, the standard deviation was set at 1.5, the level of significance was set at 0.05 and the power was set at 0.95. To select eligible subjects, simple random sampling was done using a Casio *fx*-350HB scientific calculator.

A total of 76 pediatric residents were included in the study. This is a pilot study on adolescent immunization. On review, there has been no study published tackling on this issue.

Questionnaire Administration

The questions were pre-tested among the investigator's colleagues and then refined in terms of ease of administration.

It included an introductory letter explaining the purpose of the study and a consent form. After written consent was obtained, all subjects responded to a self-administered questionnaire. The 21-item questionnaire took about 5-10 minutes to complete. It inquired about:

1) demographic information: gender, location of training, and level of residency training
2) knowledge on adolescent immunization by asking about vaccines that can be given and vaccination schedules
3) attitudes on adolescent immunization
4) present practices on adolescent immunization

There were 6 multiple choice questions which assessed knowledge on adolescent immunization. Most of the items were intended to elicit a response to one predetermined choice. However, one question required multiple answers and others allowed the respondent to answer with a written response instead of, or in addition to, marking one of the choices provided. These questions were reviewed and the written response was included under one of the predetermined choices whenever it was appropriate to do so. There were 6 questions which assessed attitudes and 5 questions which assessed practices on adolescent immunization. A 5-point Likert scale was used to assess the attitudes and practices associated with adolescent immunization.

DATA ANALYSIS

Testing for significant difference between the 2 groups were made using a 2 sample pooled T test and Test of two proportions. Alpha was set at 0.05 level.

RESULTS

There was a total of 76 pediatric residents included in the study. Among these, 60.5 % were residents training in PGH while 39.5 % were residents

training in private hospitals. The male to female ratio is 1:7, 11% male respondents and 89% female respondents.

Thirty-eight percent of the respondents were 1st year residents while 26% and 27% were 2nd year and 3rd year residents, respectively.

Table 1 Demographic Characteristics of Respondents

		Public	Private	Total
Total no. of respondents		46 (60%)	30 (40%	76
Gender	Male	6 (13%)	3 (10%)	9 (12%)
	Female	40 (87%)	27 (90%)	67 (88%)
Level of Residency	1st year	17 (37%)	12 (40%)	29 (38%)
	2nd year	12 (26%)	8 (27%)	20 (26%)
	3rd year	17 (37%)	10 (33%)	27 (36%)

KNOWLEDGE

The mean performance scores of both public and private pediatric residents are shown in Table 2A

Table 2A Mean Performance Scores

Knowledge	Public (n=46)	Private (n=30)	P value esti-mate	Signi-ficant difference
Vaccines that may be given to adoles-cents	average: 78.91% SD: 0.0924	average: 81.00% SD: 0.0845	0.3340	No
Overall knowledge on schedules of vaccines	average: 49.57% SD: 0.2139	average: 57.33% SD: 0.1946	0.0780	No

Their knowledge of the vaccines that may given and the different vaccination schedules for individual vaccines did not differ significantly.

The percentage of residents with correct answers on the individual vaccination schedules are shown in Table 2B.

Table 2B Percent of Respondents with correct answers to knowledge questions

Knowledge	Public (n=46)	Private (n=30)	P value estimate	Signi-ficant difference
Schedule to follow for giving Hepatitis A Vaccine	15.22%	26.67%	0.1112	No
Schedule to follow for giving Hepatitis B Vaccine	78.26%	86.67%	0.1788	No
Scuedule to follow for giving MMR	86.96%	80.00%	0.791	No
Schedule to follow for giving Td	34.78%	46.67%	0.1515	No
Schedule to follow for giving Varicella	23.91%	30.00%	0.281	No

When asked regarding the different vaccination schedules for adolescents, there was no significant difference in the number of residents who were able to give correct answers between the public and private hospitals. However, when asked regarding the vaccination schedule of hepatitis A, tetanus-diphtheria (Td), and varicella, less than 50% of all respondents were able to answer correctly.

ATTITUDES

The respondents were asked whether they agreed with certain statements reflecting different attitudes towards adolescent immunization.

With regards to safe and effective vaccines being expensive, residents in the public hospital tend to agree more (p value <0.05). Other situations proved to be the same for both public and private residents.

PRACTICES

The differences in practices between public and private residents are shown in Table 4.

Pediatric residents in private hospitals administer vaccination to more of their adolescent patients as compared to residents in the public hospitals (p value <0.05). This was complemented by more frequent explanations to adolescent patients regarding the immunization schedule.

Table 3 Attitudes of Respondents

Attitudes	Public (n=46		Private (n=30)		P value estimate	Significant difference
All adolescents should be immunized	average:	3.9565	average:	3.4333	0.1479	No
	SD:	1.2988	SD:	1.3817		
Adolescents should be immunized only when they ask for it	average:	2.3261	average:	2.6333	0.2622	No
	SD:	1.1364	SD:	1.1290		
Adolescents can subject themselves to immunization even if their parents disagree	average:	3.9783	average:	3.5000	0.0663	No
	SD:	1.0644	SD:	1.2798		
Safe and effective vaccines are available and easily accessible	average:	3.2826	average:	4.0667	0.0026	Yes
	SD:	1.2590	SD:	0.5208		
Safe and effective vaccines are expensive	average:	3.7609	average:	3.3333	0.0489	Yes
	SD:	0.9234	SD:	0.8841		
Adolescent immunization practices in our country is well established	average:	1.9130	average:	2.1667	0.0963	No
	SD:	0.7550	SD:	0.8743		

Legend: 1-Strongly disagree 2- Disagree 3- Not sure 4- Agree 5- Strongly agree

Table 4 Practices of Respondents

Practices	Public (n=46		Private (n=30)		P value estimate	Significant difference
I administer vaccination to my adolescent patients	average:	2.41304	average:	2.86667	0.0425	Yes
	SD:	0.90863	SD:	0.9732		
I explain to my adolescent patients the adolescent immunization schedule	average:	2.73913	average:	3.66667	<0.0005	Yes
	SD:	1.04211	SD:	1.21296		
I encourage my adolescent patients to have their immunizations	average:	3.15217	average:	3.53333	0.0630	No
	SD:	0.91815	SD:	0.86037		
I give vaccinations to my adolescent patients regardless of their paying capacity	average:	2.47826	average:	2.63333	0.5000	No
	SD:	0.88792	SD:	1.0662		
I give vaccinations only to adolescents who are willing to receive it	average:	3.04348	average:	3.56667	0.0465	Yes
	SD:	1.07407	SD:	1.13512		

Legend: 1-Never 2- Seldom 3- Occasionally 4- Frequently 5-Routinely

With regards to encouraging adolescent patients to have immunizations and giving vaccinations to patients regardless of their paying capacity, there was no significant difference in the practices of public and private hospitals. However, respondents reported doing the abovementioned practices only occasionally.

DISCUSSION

Despite the availability of safe and effective vaccines and substantial progress in reducing vaccine-preventable diseases, the delivery to and acceptance of vaccinations by targeted populations are essential to further reducing and eliminating vaccine- preventable causes of morbidity and mortality. The health needs of the adolescents have not been assessed or addressed by the health sector. Health officials have presented data that reveal continuing threats to the health of our nation's teens from immunizable infectious diseases. Physicians have a chance to influence adolescent behaviors, and play an important role in helping to reduce these threats.

This study aimed to evaluate the gaps among the knowledge, attitudes and practices of pediatric residents in public and private hospitals on adolescent immunization. As revealed, the knowledge of pediatric residents in public and private hospitals was generally comparable. However, despite the fact that majority knows the vaccines that may be given to adolescents, results of the survey revealed the limited knowledge of the respondents on the various immunization schedules.

A generally positive attitude among all respondents towards adolescent immunization was revealed in the survey. However, residents in the public hospital tend to disagree that safe, effective and affordable vaccines were available and easily accessible. This may reflect the fact that the government's health care system has not been able to provide these vaccines and that most of the indigent population being served by the public hospital cannot really acquire these vaccines otherwise.

Although majority of the respondents encourage their adolescent patients to have their immunizations. There was a significant difference between public and private residents with regards to the frequency of vaccine administration. As revealed in the study, more residents in the private hospital make it their practice to explain immunization and vaccinate their adolescent patients. Again, this difference may be explained by the fact that vaccines were not as available to the indigent adolescents in our population.

CONCLUSION

Adolescent immunization programs face several unique challenges, the most important being that less groundwork has been laid for adolescent immunization programs compared to infant and childhood vaccination programs. Improved immunization levels and reduced morbidity through enhanced education, delivery strategies, financing of vaccine purchase, improved surveillance and further research are needed.

This study helps to identify the inadequacies of pediatric residents with regards to adolescent immunization. Significantly, the knowledge of pediatric residents on adolescent immunization schedules needs enhancement. Physicians must be aware of the recommended schedule of immunization and the only true acceptable contraindications to certain vaccines. There was a need to give more emphasis on adolescent health care in the medical curriculum and pediatric residency training.

Furthermore, there was a need to encourage pediatric residents in the public hospital to administer vaccinations to more adolescent patients despite limited resources. Physicians must occasionally be reminded. Nursing staff may be tapped in order to facilitate more vaccinations.

It must be emphasized, however, that the conclusions reached apply only to the respondents in the study. No findings in this study were representative of the knowledge, attitudes and practices of Filipino pediatricians. And as with any study using self-reports, data obtained from the physicians about the frequency certain practices regarding adolescent immunization may not be fully accurate reflections of their actual behavior.

RECOMMENDATIONS

It would be interesting to find out if there are differences in the knowledge, attitudes and practices on adolescent immunization among physicians practicing as pediatric consultant and general practitioners. Differences may also be present among those practicing in the rural and urban areas.

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