

Immunization status and relation with quality of life, functionality and motivation for self-care in the elderly*

Situação vacinal e associação com a qualidade de vida, a funcionalidade e a motivação para o autocuidado em idosos

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Abstract

This study aimed to identify the immunization status of the elderly in relation to the influenza, diphtheria-tetanus and pneumococcal polysaccharide 23-valent vaccines, relating status to demographic aspects, quality of life, level of functionality and motivation for self-care. The study had a sample of 509 individuals. The mean age was 70.30 years and the female gender prevailed. The immunization status was: influenza- 76.4%; diphtheria-tetanus- 73.9%; and pneumococcal polysaccharide 23-valent - 6.7%. No significant difference was found in the relation between the prevalence of vaccination and gender, but there was a considerable difference between the groups who had or had not received the diphtheria-tetanus vaccine and some areas of Quality of Life. The results also showed a significant difference in terms of functional independence between the group that received and the group that did not receive the pneumococcal polysaccharide 23-valent vaccine.

Keywords: Health of the Elderly, Immunization, Quality of Life.

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Resumo

O estudo tem por objetivo identificar a situação vacinal de idosos quanto às vacinas antinfluenza, a dupla tipo adulto, constituída dos toxicóides tetânico e diftérico, e à antipneumocócica polissacarídea 23 valente, relacionando-a com aspectos demográficos, com a qualidade de vida, o índice de funcionalidade e a motivação para o autocuidado. O estudo é do tipo transversal, com uma amostra de 509 idosos. A média de idade foi de 70,30 anos e predominou o gênero feminino. A situação vacinal foi: antinfluenza - 76,4%; dupla adulto - 73,9%; e antipneumocócica polissacarídea 23 valente - 6,7 %. Não se constatou uma diferença significativa na relação da prevalência das vacinas com o gênero, mas houve uma diferença considerável entre os grupos que fizeram ou não a vacina dupla adulto e alguns domínios de Qualidade de Vida. Os resultados também evidenciaram uma diferença significativa na independência funcional entre o grupo que recebeu e o grupo que não recebeu a vacina antipneumocócica polissacarídea 23 valente.

Palavras-chave: Saúde do Idoso. Imunizações. Qualidade de Vida.

INTRODUCTION

The development of social policies and program actions may contribute to the decrease in premature deaths in the elderly, improvement in their quality of life and their inclusion in the social, cultural, economic, and political aspects of society⁽¹⁻²⁾. As of 1999, the international year of the elderly, the Health Surveillance Department (SVS), through the general coordination of the National Immunization Program, which is part of the Ministry of Health's Epidemiological Surveillance Department, has promoted a vaccination campaign for the elderly. This campaign follows the basic principles of the Unified Health System (SUS), which are universality, integrality, and equity in health care⁽³⁾.

In 2005, according to the Ministry of Health (MS), during the influenza and diphtheria-tetanus National Vaccination Campaign, 84% and 79.59% of the target population of Brazil and Rio Grande do Sul, respectively, were vaccinated. Such success is attributed to the effort of health professionals and partnerships. Albeit free and available in Brazil since 1999, influenza vaccine coverage still is inadequate in several municipalities of the country⁽³⁾.

A study performed in the southeast region of Brazil registered influenza vaccination coverage of 63.2% of the elderly and identified as causes for vaccine refusal: disbelief in the efficacy of the vaccine, fear of adverse events and belief that influenza is an ordinary disease. Prejudice, insecurity, rumors, and lack of knowledge about the vaccine and, particularly the fact that health teams do not indicate immunobiologicals contribute toward not vaccinating a large number of patients who could benefit from vaccine protection. The study concluded that socioeconomic conditions, habits and age did impair access to vaccine campaigns. On the other hand, specific campaigns, directed toward 60 to 64 year-old individuals, may expand vaccination coverage⁽⁴⁾.

The concern with the occurrence of adverse events has been pointed as a factor

that contributes to low vaccination coverage⁽⁴⁾. Frequently, symptoms, not always actually associated with vaccines, are attributed to immunization. Studies on the perception and representation of symptoms after vaccination may explain part of the reasons for low vaccination coverage and contribute to more specific educational interventions⁽⁶⁾.

The influenza vaccine brings countless benefits to the elderly, given it provides high protection against frequent complications associated with the flu, which are responsible for hospitalization and deaths. Respiratory diseases, particularly infectious diseases, are increasingly representative of morbidity and mortality in the elderly population, and therefore the need for preventive interventions. A study aimed at analyzing the trend in respiratory disease mortality and observing the impact of influenza vaccination in mortality rates, verified a downward trend in indicators after vaccine intervention. The study concluded that specific protection against influenza has reflected positively in the prevention of respiratory disease mortality⁽⁷⁾.

The adult diphtheria and tetanus toxoid vaccine is recommended for the elderly population, because of their exposure to risk conditions for accidental tetanus. This population is vulnerable to accidents and the care of lesions, is not rarely inappropriate, putting them at risk due to presence of the tetanus bacillus⁽³⁾. Studies have suggested that, in Brazil, the elderly population comprises the main risk group for acquiring and dying of tetanus. Vaccination with adult diphtheria and tetanus vaccine, along with sanitary measures and appropriate treatment of lesions are safe and effective measures to control the disease⁽⁸⁾.

Finally, pneumococcal polysaccharide 23-valent vaccine is indicated, mainly, for the elderly who are more vulnerable to pneumococcal infections and their complications, given the prevalence of pneumococcal infections increases substantially because adults become more dependent and fragile as they grow older⁽³⁾.

Immunization is a preventive action aimed at specific health protection, and the present study had the objective of identifying the vaccination status of the elderly as to influenza, adult diphtheria and tetanus toxoid, and pneumococcal polysaccharide 23-valent vaccines, relating them to demographic aspects, quality of life, functionality, rate and motivation for self care.

METHODS

The study was cross sectional. The sample intentionally comprised 509 elderly patients who sought Pontificia Universidade Católica do Rio Grande do Sul for a trans-disciplinary health assessment, between January and March 2006⁽¹⁾. Inclusion criteria of the elderly in the sample were 60 years or older and agreeing to participate in the study. The sample is equivalent to 0.31% of the elderly population estimated for Porto Alegre in the year 2005. Data were collected through interviews for which the following were used:

- Tool: developed by the authors, aimed at finding if the person had ever been vaccinated against diphtheria-tetanus, influenza, pneumococcal polysaccharide 23-valent, their age and gender, through information provided by the elderly;
- Barthel Index: following the version modified by Granger, Albrecht Hamilton, presented by Roach⁽⁹⁾. The Barthel Index assesses daily life functional activities (DLFA), which correspond to the ability to perform daily activities such as eating, bathing, personal hygiene, dressing, going from one site to another, and sphincter control. A revision of the tools used in the assessment of the elderly identified that the Barthel Index was used in 73.7% of studies on the theme and is considered to present the most consistent results in reliability and validations⁽¹⁰⁾;
- Adaptation of Subscale III, developed by Nunes⁽¹¹⁾: to determine the competence of the Diabetic Patients for Self

Care (ECDAC), aimed at verifying the motivation of the elderly for self care;

- The generic quality-of-life tool, the WHO WHOQOL Bref, is an abridged version, with 26 questions from WHOQOL-100. The need to apply fast tools to assess quality of life emerged. The World Health Organization Quality of Life Group (WHOQOL Group) developed a scale to measure quality of life in adults, in a trans-cultural perspective and encompassing aspects of multidimensional nature, related to the physical, psychological, social relations, and environment domains. The physical domain encompasses facets related to daily-life activities, work capacity, mobility, energy and fatigue, sleep and rest, dependence on medication or treatments. The psychological domain refers to self-esteem, appearance and body image, positive and negative feelings, thinking mechanisms, learning, memorizing and concentrating, and spirituality and personal beliefs. Social relations, shared social support and sexual activity are facets of the social relations domain. Physical security and protection, financial resources, health care, recreation, and leisure are facets of the environment domain. The tool combines appropriate psychometric performance with practicality of use, which makes it a useful alternative to be used in studies that propose assessing quality of life in Brazil ⁽¹²⁾.

Data collected were organized in Microsoft Excel program spreadsheets and analyzed in SPSS version 12.0 statistical software. In order to attain the objectives proposed; descriptive and inferential methods were used. The descriptive part consisted of simple and cross frequency tables, measures of central trend, variability and chart analysis. The inferential part included univariate and bivariate methods, among which, chi-square test, t-student test and Pearson's correlation coefficient.

The project was approved by the Scientific Committee of the Instituto de Geriatria

e Gerontologia of PUCRS and by the Ethics in Research Committee of PUCRS, through protocol # 031/2006. Study volunteers signed a Consent Form. The study was conducted within the norms of Resolution 196/1996 of the Ethics in Research National Counsel (CONEP).

RESULTS

According to what is shown in Table 1, 71.3% of the population were women, and 28.7% men. The mean age was 70.30 years (standard deviation of ± 7.63) and most of the sample concentrated in the 60 to 69 years age group, 50.3%.

Regarding vaccination status, 76.45% of the elderly had already taken influenza vaccine, and 5.5% did not know. Regarding frequency of vaccination, 85.6% informed having it annually, while 6.9% sometimes, 7.1% only once, and 0.2% did not recall.

As to adult diphtheria-tetanus vaccine, 73.9% of the elderly reports having had it, and of these, 70.0% and 21.2%, less and over 10 years, respectively. However, 8.8% of the elderly did not remember the date of vaccination. They were not asked about the number of doses received, therefore we cannot say whether vaccination for preventing tetanus and diphtheria was complete or not.

Only, 6.7% of the elderly declared having received pneumococcal polysaccharide 23-valent vaccine; 64.8% of these less than five years before, while 17.6% in a period longer than the previous, and 17.6% did not recall the date of application.

Table 2 shows there was no significant difference in vaccination coverage per gender, for a level of significance of 0.05.

Table 3 shows the association between having received or not influenza, adult diphtheria-tetanus and pneumococcal polysaccharide 23-valent vaccines and quality of life, functionality and motivation for self care in the elderly. Regarding the influenza vaccine, no significant difference was observed between groups that received it and did not receive it with quality of life, functionality, and motivation for self care.

Tabela 1 - Distribution of the elderly by sex, age group and vaccination status

	F	%
SEX		
FEMALE	363	71.3
MALE	146	28.7
AGE GROUP		
60 to 69	256	50.3
70 to 79	197	38.7
80 or +	56	11.00
VACCINATION STATUS		
influenza	389	76.4
adult diphtheria and tetanus	376	73.9
pneumococcal	34	6.7

There was, however, a significant difference between groups that received adult diphtheria-tetanus vaccine and those that did not and some domains of Quality of Life: Psychological Domain ($P= 0.013$), Social Relations ($P= 0.011$) and Environment ($P= 0.024$). This, therefore, means that the elderly who receive this vaccine perceived themselves with a significantly higher level of quality of life, in these domains, than those who did not receive the vaccine.

Results also showed a significant difference in functional independence measured by the Barthel Index, between the group that received and the group who did not receive the pneumococcal polysaccharide 23-valent vaccine ($P= 0.009$). The group that received the vaccine was observed to present a functionality score on the Barthel scale, significantly below those who did not receive the vaccine. Therefore, the elderly who received

the abovementioned vaccine had a higher level of dependence for performing daily life activities, than those who did not.

No association was observed between vaccination status and motivation for self care.

DISCUSSION

The population studied has some similar characteristics to the population of other studies on the theme, regarding gender, age and vaccination status^(4,6,13,14,15,16,17). A higher percentage of female elderly (71.3%) was observed in the present study, similar to what was found by some authors^(6,15). In terms of the mean age of the participants, it was 70.30 years (standard deviation of ± 7.62), which agrees with another study on the theme⁽⁶⁾.

The vaccination status of the elderly in relation to influenza vaccine was 76.4% of

Tabela 2 - Distribution of vaccination status per sex*

TYPE OF VACCINE	F				M				P **
	Yes		No		Yes		No		
Influenza	277	80.5%	67	19.5%	112	81.8%	251	8.4%	0.76
Diphtheria tetanus	274	79.7%	40	11.6%	102	75.0%	26	19.1 %	0.07
Pneumococcal	24	7.0 %	276	80.2%	10	7.3 %	112	81.9%	0.86

Note: * Does not know or not informed were answers that were not considered.

** Chi square test, 0.05 level of significance

Tabela 3 - Association between presence or absence of tetanus, influenza, pneumococcal vaccines and quality of life, functionality and motivation for self care of the elderly

Variável	Vaccination	Tetanus Vaccine			Influenza Vaccine			Pneumococcal Vaccine		
		Average	Standard deviation	P*	Average	Standard deviation	P*	Average	Standard deviation	P*
Quality of Life										
Physical Domain	yes	61.58	13.61	0.98	60.81	14.09	0.32	60.81	12.99	0.67
	no	61.62	13.43		62.45	13.70		61.85	13.75	
Psychological Domain	yes	69.47	16.41	0.01	68.02	17.70	0.82	70.00	19.42	0.71
	no	63.97	16.66		67.57	16.31		68.88	16.52	
Public Relations Domain	yes	71.83	18.03	0.01	70.61	18.90	0.96	75.49	13.59	0.16
	no	65.65	18.51		70.51	17.49		70.97	18.27	
Environment Domain	yes	62.20	20.88	0.02	61.31	21.23	0.41	65.75	13.13	0.07
	no	56.10	15.07		59.39	14.26		60.96	15.09	
Barthel Index	yes	97.31	5.70	0.14	97.00	7.04	0.33	94.46	12.68	0.009
	no	98.46	3.59		97.81	3.75		97.57	4.72	
Ecdad	yes	37.80	4.42	0.51	37.49	4.68	0.44	37.21	5.08	0.52
	no	37.41	4.57		37.90	4.19		37.73	4.46	

* T-student test, 0.05 level of significance, P<0.05

the study group, lower than the rate for Rio Grande do Sul (79.4%) and higher than that of Porto Alegre (72.46%) in 2006. Nonetheless, it is higher than the number of elderly vaccinated against influenza in São Paulo, 63% of respondents in a household survey. It is lower than the total percentage of elderly vaccinated in the state of Mato Grosso in the 2007 vaccination campaign (86.07%)⁽⁴⁾. It is worth of mention that 85.6% of the elderly who received influenza vaccine report the habit of receiving the referred vaccine annually.

The vaccination status of the adult diphtheria tetanus vaccine is similar to the result of the study performed in 2000, with a group of adult patients of a health unit in Portugal, regarding tetanus vaccine. In the same study, 76.4% of patients informed having received at least one dose of the referred vaccine. However, in the Portuguese study, about 50% of informants had been vaccinated less than 10 years before, while in the present study 70.0% of the elderly informed having been vaccinated in the same timeframe⁽¹⁴⁾. It should be pointed out that the risk of exposure to tetanus of the elderly

relates to the low vaccination coverage and to the decrease in the immunological response inherent to aging.⁽⁵⁾

As to pneumococcal polysaccharide 23-valent vaccine, the reason for such a low vaccination status (6.7%) seems to be related to the fact of it being administered to fragile elderly. The Ministry of Health, through a national vaccination campaign for the elderly, provides immunizing doses against pneumococci for those in homes or hospitalized⁽¹⁵⁾. This vaccine is available only in vaccination clinics. It is given in Basic Health Units only in cases of individuals over 60 years with some chronic condition⁽¹⁷⁾. There are no available data in Brazil on the coverage of this vaccine⁽¹⁴⁾. As functional capacity refers to a person's autonomy to perform daily activities in the household, based on the data, one can infer that the elderly who do not receive the referred vaccine are more autonomous to carry out daily activities than those that received it. The fact that some studies point out that the loss of this autonomy is the main factor for institutionalizing aged individuals stands out.⁽¹⁸⁾

No theoretical references for analyzing

the association between the presence or absence of influenza, adult diphtheria-tetanus and pneumococcal polysaccharide 23-valent vaccines with quality of life, functionality and motivation for self help of the elderly were found.

FINAL CONSIDERATIONS

It should be pointed out that the results of this study cannot be generalized, as it refers to an elderly population that went to the University for a transdisciplinary health assessment, and not to a random population-based sample.

The sample studied was observed to have some characteristics similar to the population of other studies on the theme, regarding gender, age and vaccination status.

There was no statistically significant difference in vaccine status per gender. However, results showed higher scores in the psychological, social relations, and environment quality of life domain among the elderly that received the adult diphtheria te-

tanus vaccine when compared to those who did not. Results also showed a significant difference in the functional independence measured by the Barthel Index between the group that received the pneumococcal polysaccharide 23-valent vaccine, and the group that did not. Such observation is probably associated with indication and availability of this vaccine for fragile elderly.

Investments related to immunization of the elderly are regarded as probably positively influencing the quality of life and motivation for self care of the population. Therefore it is highlighted that public health services, mainly, primary care should carry out active case search, investigate adverse effects, and educate the population regarding the benefits of this intervention. Although such relation was not statistically evident, compliance to vaccination is believed to demonstrate a motivation for self care, providing prevention of diseases and contributing to maintaining functional capacity and quality of life.

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