



## Cross-sectional survey: Risk-averse French general practitioners are more favorable toward influenza vaccination



Sophie Massin<sup>a,b</sup>, Bruno Ventelou<sup>a,c,d</sup>, Antoine Nebout<sup>a,e</sup>,  
Pierre Verger<sup>a,c</sup>, Céline Pulcini<sup>a,f,g,\*</sup>

<sup>a</sup> Aix Marseille Université (Aix Marseille School of Economics—SESSTIM UMR 912, Inserm IRD), Marseille, France

<sup>b</sup> Université d'Artois, LEM, UMR 8179, Arras, France

<sup>c</sup> ORS PACA, Observatoire Régional de la Santé Provence-Alpes-Côte d'Azur, Marseille, France

<sup>d</sup> CNRS, U6579 (greqam), Marseille, France

<sup>e</sup> INRA, UR 1303 ALISS, Ivry-sur-Seine, France

<sup>f</sup> CHU de Nancy, Service de Maladies Infectieuses, Nancy, France

<sup>g</sup> Université de Lorraine, Université Paris Descartes, EA 4360 Apemac, Nancy, France

### ARTICLE INFO

#### Article history:

Received 20 October 2014

Received in revised form 8 December 2014

Accepted 15 December 2014

Available online 26 December 2014

#### Keywords:

Immunization  
Pandemic influenza  
Primary care  
Risk aversion  
Seasonal influenza  
Vaccine

### ABSTRACT

**Objectives:** We tested the following hypotheses: (i) risk-averse general practitioners (GPs) are more likely to be vaccinated against influenza; (ii) and risk-averse GPs recommend influenza vaccination more often to their patients. In risk-averse GPs, the perceived benefits of the vaccine and/or the perceived risks of the infectious disease might indeed outweigh the perceived risks of the vaccine.

**Patients/Methods:** In 2010–2012, we conducted a cross-sectional survey of a nationwide French representative sample of 1136 GPs. Multivariate analyses adjusted for four stratification variables (age, gender, urban/suburban/rural practice location and annual patient consultations) and for GPs' characteristics (group/solo practice, and occasional practice of alternative medicine, e.g., homeopathy) looked for associations between their risk attitudes and self-reported vaccination behavior. Individual risk attitudes were expressed as a continuous variable, from 0 (risk-tolerant) to 10 (risk-averse).

**Results:** Overall, 69% of GPs reported that they were very favorable toward vaccination in general. Self-reported vaccination coverage was 78% for 2009/2010 seasonal influenza and 62% for A/H1N1 pandemic influenza. Most GPs (72%) reported recommending the pandemic influenza vaccination to at-risk young adults in 2009, but few than half (42%) to young adults not at risk. In multivariate analyses, risk-averse GPs were more often vaccinated against seasonal (marginal effect = 1.3%,  $P=0.02$ ) and pandemic influenza (marginal effect = 1.5%,  $P=0.02$ ). Risk-averse GPs recommended the pandemic influenza vaccination more often than their more risk-tolerant colleagues to patients without risk factors (marginal effect = 1.7%,  $P=0.01$ ), but not to their at-risk patients and were more favorable toward vaccination in general (marginal effect = 1.5%,  $P=0.04$ ).

**Conclusion:** Individual risk attitudes may influence GPs' practices regarding influenza vaccination, both for themselves and their patients. Our results suggest that risk-averse GPs may perceive the risks of influenza to outweigh the potential risks related to the vaccine.

© 2014 Elsevier Ltd. All rights reserved.

### 1. Introduction

Vaccination behavior is determined by a complex combination of psychological, socioeconomic, political and cultural factors [1,2]. The Health Belief Model suggests that an individual decides to

engage in a given behavior aimed at preventing or treating a disease based upon his/her beliefs about the perceived threat of the disease and beliefs about the benefits and risks of the target behavior; education can to some extent have an influence on these beliefs [1,3,4]. But other complex conceptual psychological frameworks might also be helpful [2].

Risk aversion is a concept widely used in economics. In theory, an individual's level of risk aversion is considered to be a stable personality trait that can be assessed by ad hoc questionnaires using various methods to elicit risk attitudes (lottery choices or self-reported willingness to take risks) [5]. Using these methods,

\* Correspondence to: CHU de Nancy, Hôpitaux de Brabois, Service de maladies infectieuses et tropicales, 54511 Vandœuvre-lès-Nancy cedex, France.

Tel.: +33 0 3 83 15 40 97; fax: +33 0 3 83 15 70 27.

E-mail address: [celine.pulcini@univ-lorraine.fr](mailto:celine.pulcini@univ-lorraine.fr) (C. Pulcini).

we recently showed that risk-averse French general practitioners (GPs) used rapid diagnostic tests more often than their more risk-tolerant colleagues in acute tonsillitis in children and thus adhered better to national guidelines [6]. Risk aversion may affect a decision to be vaccinated in two opposite ways: some choose vaccination because they fear the consequences of illness, while others, worried about the vaccine's side effects, choose not to be vaccinated. Thus, the effect of the degree of risk aversion is, a priori, ambiguous [4].

A large-scale survey of the general population in the USA published in 2005 used an econometric model of bounded rationality to analyze the predictors of people's willingness to be vaccinated [4]. The authors showed that risk aversion has a positive effect on the decision to be vaccinated, a finding that implies that the impact of perceived effectiveness of vaccination outweighs the impact of its perceived side effects [4]. The same authors conducted a similar study in Japan, where they also found that risk aversion promoted influenza vaccination; there they found that risk aversion operated through fear of getting influenza, which was stronger than fear of the vaccination's side effects [7].

We are not aware of any study that has assessed the association between risk aversion and vaccination attitudes and practices among physicians, particularly practices involving both their own vaccination status and their recommendations to their patients. In this survey of a nationwide representative sample of GPs in France, we sought to assess the following hypotheses: (i) risk-averse GPs are more likely to be vaccinated against influenza; (ii) and risk-averse GPs recommend influenza vaccination more often to their patients. In risk-averse GPs, the perceived benefits of the vaccine and/or the perceived risks of the infectious disease might indeed outweigh the perceived risks of the vaccine.

## 2. Materials and methods

### 2.1. Sampling

A panel of French GPs was constituted in June 2010, by procedures that have been described elsewhere [8]. Briefly, 5170 GPs were selected by random sampling from the Ministry of Health's exhaustive database of health professionals in France. Sampling was stratified for location of the general practice (urban, peri-urban, or rural areas), gender, age (<49, 49–56, >56 years old), and volume of activity, i.e., the number of consultations in 2008 (<2849 [Q1], 2849–5494, >5494 [Q3]). Of the 3888 GPs who were contacted and eligible, 1431 (36.8%) agreed to participate in the panel, i.e., to provide regular data on their activity and respond to five consecutive surveys on different topics during a 30-month period. We focus here on the 1136 GPs who participated in the first and the fifth national cross-sectional survey, conducted respectively in 2010 and in 2012 (attrition rate between the first and fifth: 20.6%).

### 2.2. Ethics statement

The National Data Protection Authority (Commission Nationale Informatique et Libertés), responsible for ethical issues and protection of individual data in France, approved the panel and its procedures.

### 2.3. Procedure and questionnaire

Professional investigators contacted the GPs and interviewed them with computer-assisted telephone interview software, using standardized questionnaires (see supplementary data: Doc S1).

**Table 1**

Socio-demographic characteristics of the 1136 general practitioners (GPs).

GPs' characteristics		
Gender	Male	72.8%
	Female	27.2%
Age (years)	<45	28.0%
	45–54	34.3%
	>54	37.7%
<b>Medical practice characteristics</b>		
Location of practice	Urban	60.5%
	Peri-urban	18.5%
	Rural	21.0%
Volume of activity (annual patient consultations)	<2849	20.4%
	2849–5494	54.3%
	>5494	25.3%
Type of practice	Solo	45.1%
	Group	54.5%
	No answer <sup>a</sup>	0.4%
Alternative medicine	No	87.2%
	Occasionally	12.7%
	No answer <sup>a</sup>	0.1%
<b>GPs' attitudes and practices toward vaccination</b>		
The GP is very favorable toward vaccination in general	Yes	68.6%
	No	30.9%
	No answer <sup>a</sup>	0.5%
The GP reported being vaccinated against seasonal influenza (2009/2010)	Yes	77.9%
	No	21.8%
	No answer <sup>a</sup>	0.3%
The GP reported being vaccinated against pandemic A/H1N1 2009 influenza	Yes	62.2%
	No	37.7%
	No answer <sup>a</sup>	0.1%
The GP reported recommending vaccination against seasonal influenza to relatives aged over 65	Yes	96.0%
	No	3.1%
	No answer <sup>a</sup>	0.8%
The GP reported recommending vaccination against pandemic influenza to at-risk patients	Yes	72.3%
	No	26.9%
	No answer <sup>a</sup>	0.8%
The GP reported recommending vaccination against pandemic influenza to not at-risk patients	Yes	41.5%
	No	57.9%
	No answer <sup>a</sup>	0.6%
<b>GPs' risk attitudes<sup>b</sup></b>		
Daily life	Mean	5.15
	Standard deviation	2.26
	No answer <sup>a</sup>	5.9%
Personal finances	Mean	6.18
	Standard deviation	2.35
	No answer <sup>a</sup>	6.6%
Personal health	Mean	4.83
	Standard deviation	2.40
	No answer <sup>a</sup>	6.0%

<sup>a</sup> Corresponds to GPs who chose not to answer the question, and to GPs who answered "I do not know".

<sup>b</sup> Scale from 0 (risk-tolerant) to 10 (risk-averse).

In the first survey conducted from June to December 2010, after the pandemic influenza outbreak, the interviewers collected information about the doctors' professional characteristics and their attitudes and practices regarding vaccination. In the fifth 2012 survey, three questions assessed GPs' individual risk attitudes in three domains (daily life, personal finances, and their own health) on a Likert scale from 0 (not at all inclined to take risks, i.e., being risk-averse) to 10 (totally inclined to take risks, i.e., being risk-tolerant) [5,9,10]. From the questionnaires we studied the following independent variables: self-reported vaccination for 2009 seasonal and pandemic influenza; recommendations made to patients for seasonal and pandemic influenza vaccines; and attitudes towards vaccination in general (Table 1). During the pandemic influenza outbreak, national guidelines in France recommended the vaccine to the entire population [11], whereas seasonal influenza vaccination is recommended only to specific at-risk groups in France.

Download English Version:

<https://daneshyari.com/en/article/10964837>

Download Persian Version:

<https://daneshyari.com/article/10964837>

[Daneshyari.com](https://daneshyari.com)