

Vaccine confidence and hesitancy in Brazil

Confiança nas vacinas e hesitação em vacinar no Brasil

Confianza y renuencia a las vacunas en Brasil

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Abstract

Despite the overall benefits of immunization, vaccine hesitancy has been a growing trend and has been associated with the resurgence of vaccine-preventable diseases. The aim of this study was to assess vaccine confidence and hesitancy in Brazil, as part of a wider project to map vaccine confidence globally. One thousand subjects were interviewed, either online or face-to-face, based on a general questionnaire regarding perceptions on vaccines and vaccination. Further exploratory questions were used with the subset of respondents who were parents of children aged under 5. Such questions extracted information regarding vaccination behavior, opinions on vaccination and government health services, and vaccine hesitancy. Reasons for hesitancy were classified as relating to confidence, convenience and/or complacency, and the population was also analyzed socio-demographically. The results showed that overall confidence in immunization was higher than confidence in family planning services, community health workers and emergency services. Seventy-six people reported hesitancy to vaccinate. The commonest reasons for hesitancy were issues with confidence (41.4%), efficacy/safety of the vaccine (25.5%) and concerns about adverse events (23.6%). The sociodemographic analysis revealed that vaccine hesitancy was associated with marital status, level of education and income. Despite overall vaccine confidence being high, a clear trend toward lower levels of confidence was associated with higher levels of hesitancy, which warrants on-going monitoring, due to the dynamic and changing nature of vaccine hesitancy.

Vaccination Refusal; Immunization Programs; Vaccination; Vaccines

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Introduction

Despite the overwhelming evidence on the overall benefits of immunization, vaccine hesitancy has been gaining considerable ground^{1,2,3}. This is a serious cause for concern as it has been associated with the resurgence of vaccine-preventable diseases such as measles in the United States⁴ and Europe⁵. In Brazil, measles-mumps-rubella vaccine coverage has been dropping steadily since 2013, causing concerns that pockets of unimmunized people may be growing nationwide, bringing the risk of new outbreaks of vaccine-preventable diseases⁶. In this context, it is more important than ever to better understand the dynamics of vaccine confidence in Brazil.

While some anti-vaccine sentiments date back to the 1800s – with some common themes, such as safety concerns, religious resistance against interfering with “God’s plan” or mother nature, and libertarian resistance against mandates – the nature and scope of more recent episodes of vaccine hesitancy and refusal have new modes of spread and pertain to a greater number of vaccines and combinations of vaccines^{7,8}.

Some historic reasons for drops in vaccination rates still play a fundamental role in vaccine hesitancy, including politics, religion and biased evidence. Caring parents and/or guardians do not refuse vaccines to intentionally compromise their children’s health; they do so instead because they genuinely believe they are making the best choice for their child⁷.

One persisting driver of vaccine reluctance is the issue of mistrust – mistrust in the product (including information about the vaccine), the provider, and in the policy maker and surrounding politics. One example of this was the Northern Nigerian boycott of the polio vaccine in 2003-2004, which was fueled by leaders with an agenda beyond the vaccine or immunization program, who capitalized on anti-government sentiments of populations whose years of marginalization made them prone to suspicion of government programs. The consequence of that distrust – not accepting vaccination – had negative public health impacts and significant costs to the Global Polio Eradication Initiative⁹.

Other parts of the world are also susceptible to health-related consequences of mistrust in government policies, especially in the context of political turmoil. In Brazil, for instance, recent political and economic instability culminated in government impeachment in 2016, which coincided with a mass increase in *Aedes aegypti* – transmitted illnesses, namely dengue fever and zika. The elimination of mosquito breeding grounds as a preventative measure is a collaborative effort between government and the civil society, and the response to the zika and dengue epidemics has not been helped by exceptionally low levels of trust between government and the general public. Without appropriate scientific investigation, however, such anecdotal observations with potential international consequences may remain at the level of speculation.

A qualitative study by Figueiredo et al.¹⁰ used unstructured interviews with families of children under two years old, reporting a wide variety of barriers and promoters of vaccination, including convenience and confidence issues, and a concern about administering multiple vaccines at once. Barbieri et al.¹¹ conducted qualitative interviews with middle-class parents in São Paulo and found out that parents who vaccinated their children felt themselves to be part of Brazil’s “culture of immunization,” while those who refused vaccination felt that mandatory vaccination was incompatible with their way of life. Logullo et al.¹² performed a case-control study of São Paulo caregivers who did or did not vaccinate their children and found no significant socioeconomic patterns, although the authors note that feeling sorry for the child, anticipating a painful injection, was associated with delaying vaccination (the authors mention asking about trust in the healthcare system as part of the questionnaire, but do not report any findings relating to this question). Barata et al.¹³ conducted a survey of immunization coverage in 27 Brazilian capitals from 2007-2008 and observed that incomplete vaccination was associated with higher birth order, and that children residing in the wealthiest-quintile census tracts were less likely to be up-to-date with recommended vaccines. While all these studies have contributed to a better understanding of vaccination attitudes in Brazil, they have not compared levels of trust in the different health programs (i.e. immunization, family planning, emergency services) included in the Vaccine Confidence Index (VCI) questionnaire, nor do they investigate the relationship between hesitancy and refusal. Moreover, the diversity of study designs employed prevents comparison between the different studies.

The Vaccine Confidence Project (VCP) was set up in 2009 to develop a systematic approach to understanding, monitoring and responding to issues of public trust and confidence in vaccines and immunization programs⁷. Although detailed local studies are essential to design appropriate strategies at the local level, significant global dynamics have been influencing vaccine confidence. Understanding such large-scale phenomena requires an international scale study. The intention of the VCP's current global mapping effort, therefore, is to detect signals and identify trends and changes across countries so they can be investigated and understood, and so strategies can be developed to tackle them at an early stage¹⁴.

The state of vaccine confidence, as investigated via the VCI developed by the VCP, had not been formally assessed in Brazil. The aim of this study, therefore, was to assess vaccine confidence and hesitancy in a sample population from Brazil, as part of a wider project to map vaccine confidence globally.

Materials and methods

Data collection consisted of both online and face-to-face interviews with 1,000 respondents carried out between February and July 2016. The study population consisted of a convenience sample, defined as non-probabilistic and therefore not necessarily representative of a certain area or region. Survey materials were translated into Brazilian Portuguese. All participants gave written informed consent prior to being interviewed. The online interviews were performed using a web-based survey interface (<http://www.surveymonkey.com>). In order to ascertain the inclusion of participants from different socioeconomic and educational backgrounds, thus reducing the risk of sampling bias derived from web-based interviews only, face-to-face interviews were carried out on a convenience sample comprised of graduate dental surgeons as well as patients and/or accompanying parents of children who were attending oral health check/treatment clinics in Campinas, São Paulo State, Brazil.

Data analysis followed previously published guidelines¹⁴. Briefly, a general questionnaire was asked about perceptions regarding vaccines and vaccination. Relationships between vaccination behavior and opinions on vaccination and government health services, reported instances of vaccine hesitancy and their reasons, and ultimate decisions about whether to vaccinate were examined. Reasons for hesitancy given by vaccine-hesitant respondents were related to confidence issues (concerns about the safety or efficacy of the vaccine, previous bad experiences, or preference for alternative health approaches), convenience (access issues), or complacency (perceptions that the vaccine was unimportant or unnecessary). The respondents who gave no reason or gave a response outside of the categories were coded as "other/do not know/no reason". The study population was also analyzed regarding four sociodemographic indices, namely respondent age group, marital status, family income and education level. The null hypotheses tested herein were: (1) there is no correlation between vaccine confidence and confidence in other public health programs, such as family planning services, health workers and emergency services (Table 1); (2) there is no correlation between age groups and vaccine acceptance, nor is there correlation between age groups and vaccine hesitancy (Table 2); (3) there is no correlation between marital status and vaccine acceptance, nor is there correlation between marital status and vaccine hesitancy (Table 2); (4) there is no correlation between income and vaccine acceptance, nor is there correlation between income and vaccine hesitancy (Table 2); and (5) there is no correlation between education level and vaccine acceptance, nor is there correlation between education level and vaccine hesitancy (Table 2).

The correlations were statistically calculated using the Spearman test and comparisons between frequencies were analyzed using chi-square or G test. The significance level was set at 5% and the calculations were performed on IBM SPSS 23 (IBM Corp.; <https://www.ibm.com>).

This study was approved by the Research Ethics Committee of the São Leopoldo Mandic University, registration n. 51606415.8.0000.5374, in accordance with the ethical principles established by the *Declaration of Helsinki* and the Brazilian National Health Council *Resolution n. 466/2012*.

Table 1

Confidence in immunization. Confidence level was compared between immunization, family planning services, community health workers and Brazilian Unified National Health System (SUS) emergency services (n = 952). Vaccine hesitancy was assessed in a subgroup (parents with children under 5 years of age; n = 352) according to confidence in immunization.

Confidence level	Confidence (n = 952)				Blank	Hesitancy (n = 352)		Total
	Immunization	Family planning services	Health workers	SUS emergency services		No	Yes	
Blank	23 (2.4%)	23 (2.4%)	23 (2.4%)	23 (2.4%)	0 (0.0%)	1 (0.3%)	0 (0.0%)	1 (0.3%)
No confidence	60 (6.3%)	285 (29.9%)	311 (32.7%)	185 (19.4%)	1 (0.3%)	10 (2.8%)	11 (3.2%)	22 (6.3%)
A little	303 (31.8%)	198 (20.8)	205 (21.5%)	321 (33.7%)	6 (1.7%)	84 (23.9%)	21 (5.9%)	111 (31.5%)
Not much	129 (13.6%)	266 (27.9%)	286 (30.0%)	240 (25.2%)	1 (0.3%)	32 (9.0%)	13 (3.7%)	46 (13.0%)
A lot	381 (40.0%)	58 (6.1%)	36 (3.8%)	141 (14.8%)	1 (0.3%)	126 (35.9%)	26 (7.4%)	153 (43.6%)
Do not know	56 (5.9%)	122 (12.8%)	91 (9.6%)	42 (4.4%)	4 (1.1%)	11 (3.1%)	4 (1.1%)	19 (5.3%)
Total	952	952	952	952	13 (3.7%)	264 (75%)	75 (21.3%)	352 (100.0%)
Correlations	Immunization vs. family planning services	r ² = 0.236 (weak) p < 0.001						
	Immunization vs. health workers		r ² = 0.180 (very weak) p < 0.001					
	Immunization vs. emergency services			r ² = 0.225 (weak) p < 0.001				

Table 2

Distribution of the respondents (n = 952) by age group, marital status, income and level of education.

	Blank	Age group of respondents (years)				Total	p-value
		< 25	25 to 44	45 to 59	> 60		
Vaccine							
Blank	3	59	92	17	5	176	< 0.001 *
		44.7%	17.5%	7.9%	6.6%	18.5%	
No	0	8	26	7	2	43	
		6.1%	4.9%	3.3%	2.6%	4.5%	
Yes	1	65	408	190	69	733	
		49.2%	77.6%	88.8%	90.8%	77.0%	
Total	4	132	526	214	76	952	
Hesitated							
Blank	3	58	97	19	4	181	< 0.001 **
		43.9%	18.4%	8.9%	5.3%	19.0%	
No	1	63	328	160	62	614	
		47.7%	62.4%	74.8%	81.6%	64.5%	
Yes	0	11	101	35	10	157	
		8.3%	19.2%	16.4%	13.2%	16.5%	
Total	4	132	526	214	76	952	

(continues)

Table 2 (continued)

Distribution of the respondents (n = 952) by age group, marital status, income and level of education.

	Blank	Married	Marital status			Total	p-value		
			Single	Stable union	Widowed				
Vaccine									
Blank	7	45	112	9	3	176	< 0.001 *		
		7.9%	40.1%	13.0%	12.5%	18.5%			
No	0	27	15	1	0	43			
		4.7%	5.4%	1.4%	0.0%	4.5%			
Yes	0	501	152	59	21	733			
		87.4%	54.5%	85.5%	87.5%	77.0%			
Total	7	573	279	69	24	952			
Hesitated									
Blank	7	51	112	9	2	181	< 0.001 *		
		8.9%	40.1%	13.0%	8.3%	19.0%			
No	0	418	134	44	18	614			
		72.9%	48.0%	63.8%	75.0%	64.5%			
Yes	0	104	33	16	4	157			
		18.2%	11.8%	23.2%	16.7%	16.5%			
Total	7	573	279	69	24	952			
	Blank	Income bracket (in minimum wages/month)						Total	p-value
		< 1	1 to 2	3 to 4	5 to 9	10 to 19	20 or +		
Vaccine									
Blank	7	9	11	49	52	24	24	176	0.024 *
		32.1%	15.5%	23.9%	21.1%	10.9%	14.0%	18.5%	
No	0	3	4	5	10	15	6	43	
		10.7%	5.6%	2.4%	4.0%	6.8%	3.5%	4.5%	
Yes	0	16	56	151	185	182	143	733	
		57.1%	78.9%	73.7%	74.9%	82.4%	82.5%	77.0%	
Total	7	28	71	205	247	221	173	952	
Hesitated									
Blank	7	9	12	49	51	29	24	181	0.004 *
		32.1%	16.9%	23.9%	20.6%	13.1%	13.9%	19.0%	
No	0	17	50	132	146	145	124	614	
		60.7%	70.4%	64.4%	59.1%	65.6%	71.7%	64.5%	
Yes	0	2	9	24	50	47	25	157	
		7.1%	12.7%	11.7%	20.2%	21.3%	14.5%	16.5%	
Total	7	28	71	205	247	221	173	952	

(continues)

Table 2 (continued)

Distribution of the respondents (n = 952) by age group, marital status, income and level of education.

	Blank	Education level			Total	p-value
		Primary school	High school	Higher education		
Vaccine						
Blank	7	20	56	93	176	< 0.001 *
		34.5%	24.6%	14.1%	18.5%	
No	0	4	11	28	43	
		6.9%	4.8%	4.3%	4.5%	
Yes	1	34	161	537	733	
		58.6%	70.6%	81.6%	77.0%	
Total	8	58	228	658	952	
Hesitated						
Blank	7	21	56	97	181	< 0.001 *
		36.2%	24.6%	14.7%	19.0%	
No	0	36	147	431	614	
		62.1%	64.5%	65.5%	64.5%	
Yes	1	1	25	130	157	
		1.7%	11.0%	19.8%	16.5%	
Total	8	58	228	658	952	

Note: the upper half of each section of the table refers to those who accepted or refused vaccination, and the lower half of each section to those who hesitated or did not hesitate to vaccinate their children.

* G test;

** Chi-square.

Results

Of the 1,000 people invited to participate in this survey, 952 (95.2%) responded, being 610 (64%) from the online-based interviews and 342 (36%) from face-to-face interviews. Of the 952 respondents, 352 were parents of children under five years of age. The overall hesitancy rate was 16.5%, whilst 81 (23%) of the 352 parents with children under five were hesitant regarding vaccinating their children and 6 were outright refusers (7.4% of the hesitant people).

Overall, confidence in immunization was higher than confidence in family planning services, community health workers and Brazilian Unified National Health System (SUS) emergency services (Table 1). In addition, despite a statistically significant correlation between confidence in immunization and these other variables (Table 1), increased confidence levels in family planning services, community health workers and SUS emergency services were only weakly associated with increased confidence in immunization.

Although 153 (43.6%) parents with children aged under five years indicated high confidence in immunization, among the 75 (21.3%) who were hesitant, 26 (7.4%) still had high confidence in immunization (Table 1).

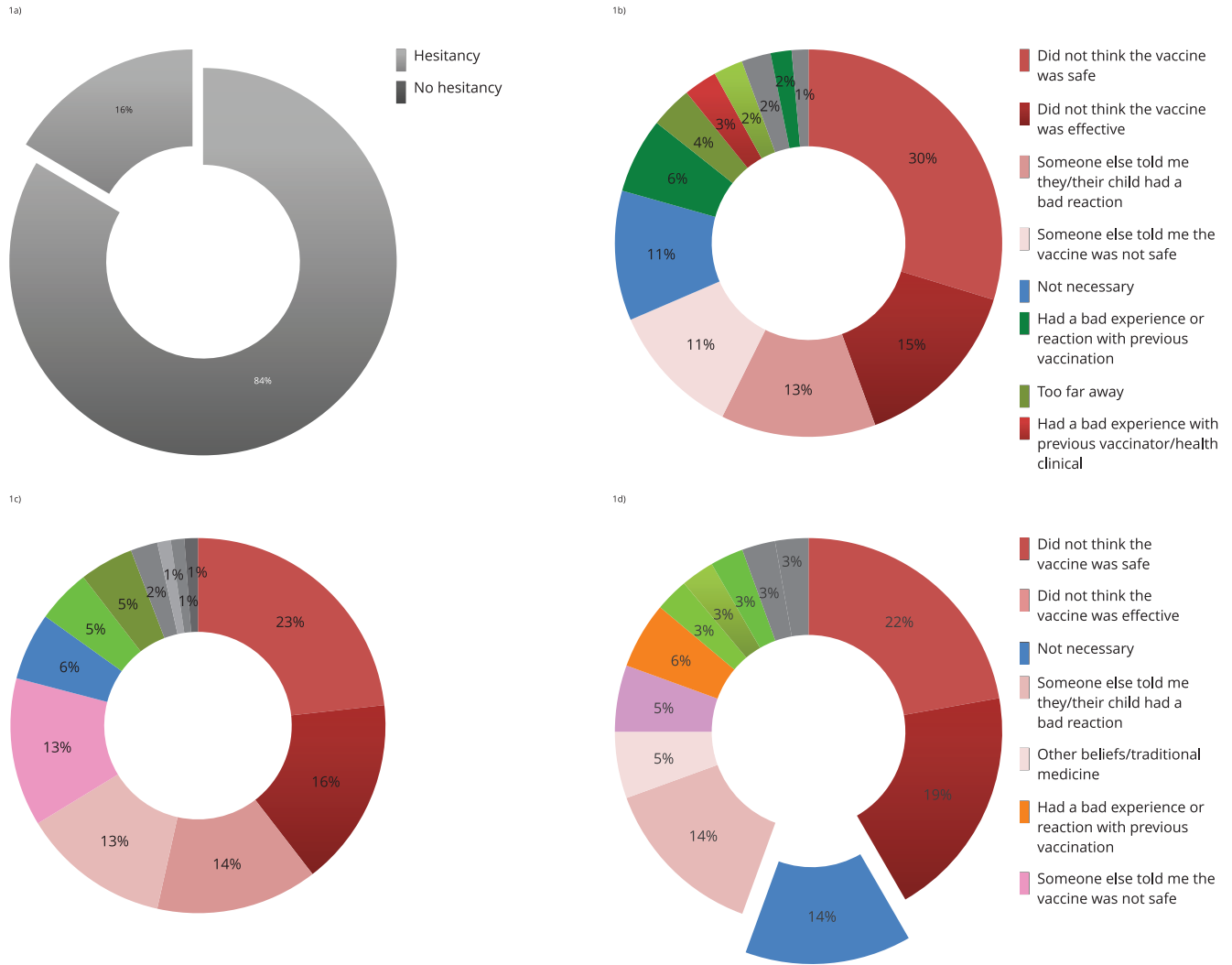
The highest percentage of reasons for hesitancy was attributed to confidence issues: 41.4% and 25.5% did not believe the vaccines were safe or effective, respectively. Hesitancy due to concerns about adverse events – a more concrete way of framing “safety” – accounted for 23.6% (Figure 1).

Confidence, hesitancy and refusal

As observed in previous surveys in other countries¹⁴, there is a clear association between lower levels of confidence and higher levels of vaccine hesitancy in this sample of the Brazilian population. This was primarily measured via self-reported confidence levels in the immunization program. The overall vaccine hesitancy rate was 16.5% (n = 157) and the refusal rate was 4.5% (n = 43, Table 2). Of the 352 parents of children under five, 75 (21.3%) reported hesitancy and 6 (1.7%) refused vaccine (Figure 1).

Figure 1

Reasons for hesitancy. This graph illustrates the total sample size (1a), with parents who never hesitated to vaccinate their children (dark grey slice), and hesitant parents (light grey slice). The overall reasons for hesitancy are shown in 1b. 1c shows the reasons for hesitancy in parents of children under 5 who ultimately refused the vaccine, and those who eventually went on to get the vaccine (1d). Reasons for hesitancy are grouped into complacency (blue), confidence (magenta), convenience (green), and other (grey).



Reasons for hesitancy

Of the 157 (16.5%) parents who responded yes to hesitancy, 122 gave their reasons for doing so. Reasons for hesitancy were then related to confidence, convenience, complacency, or other/do not know/no reason. The overall highest percentage of reasons for hesitancy was due to confidence issues. Figure 1 shows the distribution of responses according to the reason for hesitancy (confidence, convenience, complacency, or other), and by ultimate behavioral outcome (vaccine acceptance or refusal).

When comparing the reasons for hesitancy between people who did go on to get the vaccine and people who ultimately refused it, with those who did vaccinate, the top five reasons for hesitancy

were: (1) did not think the vaccine was safe; (2) did not think the vaccine was effective; (3) had a bad experience or reaction with previous vaccination; (4) someone else told me they/their child had a bad reaction; and (5) someone else told me that the vaccine was not safe. For those who did not vaccinate, the top five reasons for hesitancy were: (1) did not think the vaccine was safe; (2) did not think the vaccine was effective; (3) not necessary; (4) someone else told me they/their child had a bad reaction; and (5) other beliefs/traditional medicine.

Ranking the reasons for hesitancy has singled out the item “not necessary” as a more prevalent reason amongst those who refused vaccination, which suggests that declining immunization might be more likely to occur in this subset, though the overall interpretation is that the reasons are largely similar for both groups.

Vaccine acceptance/hesitancy and sociodemographic indices

- **Age group**

The age group least likely to accept vaccination included those individuals younger than 25 years (Table 2), while those most likely to accept vaccines were aged 60 years or older ($p < 0.001$). Regarding hesitancy, the youngest age group studied were also the most likely to “hesitate”, whereas the over-60s were the least likely to “hesitate” (Table 2). The youngest age group also showed the highest rate of blank answers to hesitancy as well as to whether they accepted or refused vaccination (~44%).

- **Marital status**

Single parents were the group least likely to accept vaccination (54%) and those with the highest rate of blank answers (40.1%), whereas all remaining groups were much more likely to accept vaccination (> 85%) (Table 2). Regarding hesitancy, 48% of single parents reported not hesitating, whereas those in a stable union (63.8%), married (72.9%) or widowed (75%) reported not being hesitant.

- **Family income**

According to family income, those at the lowest earning bracket had the lowest rate of self-reported vaccination (57.1%) and the highest rate of blank answers (32.1%), whereas the groups earning over 10 minimum-wages/month had the highest rates of vaccine acceptance (> 82.4%) and the lowest rates of blank answers (10.9% to 13.9%) (Table 2). Compared with vaccine acceptance, the difference between hesitancy (11.7% to 21.3%) and no hesitancy rates (59.1% to 71.7%) was more difficult to visualize.

- **Level of education**

Level of education was stratified from the lowest to the highest into primary school (at best), high school (at best) and higher education. The parents with the highest levels of education also reported the highest rates of vaccine acceptance (81.6%), with rates decreasing as education levels decreased (70.6% and 58.6%, respectively). The opposite trend was observed for blank answers, where rates decreased as education level increased (34.5%, 24.6% and 14.1%, respectively) (Table 2). In terms of hesitancy, low variation was observed amongst the groups for the answer “no hesitancy” (62.1% to 65.5%), though a very similar trend for blank answers were observed when compared with vaccine acceptance (36.2%, 24.6% and 14.7%, respectively) (Table 2).

Interpretations

The WHO EURO Vaccine Communications Working Group in 2011 proposed the “3Cs” model after reviewing the complexity of vaccine hesitancy and its determinants¹⁵. Such model consisted in grouping reasons for vaccine hesitancy into three main categories of factors of influence, namely complacency, confidence and convenience. In 2015, the SAGE Working Group on Vaccine Hesitancy

revisited such definitions and concluded that vaccine hesitancy is related to delay in acceptance or refusal of vaccination despite availability of vaccination services. It was nonetheless highlighted on that occasion that vaccine hesitancy is far from being a simple philosophical term, as it is rather a complex and context specific problem, which varies across time, place and vaccines¹⁶. Along with its complexity, very few vaccine hesitancy measurement tools are available for monitoring trend, which is fluid and constantly changing¹⁷. Despite the real danger posed by such phenomenon, the majority of the literature surrounding this subject is still based on philosophical argumentation, as very little has been done so far regarding actuarial scientific work, considering the severity of this global problem¹⁸. Therefore, in this study, we report on the findings of a survey of a sample population from Brazil, using the VCI, which consists in a relatively straightforward method to measure vaccine confidence and hesitancy trends that has been showing promising outcomes worldwide.

Overall vaccine confidence using the VCI in this sample of the Brazilian population was similar to that reported previously¹⁴, which shows high confidence levels, though a clear trend toward lower levels of confidence was associated with higher levels of hesitancy.

Amongst the reasons for vaccine hesitancy, the answer “not necessary” was given by 10 of the 122 hesitant respondents. This differs from previous reports for countries such as the United Kingdom, India, Pakistan, and Georgia¹⁴, where this answer did not feature amongst the commonest, though the remaining top reasons were largely similar between those who accepted vaccination and those who refused it (Figure 1) and were comparable with those reported in a previous survey¹⁴.

Further analysis of the sample population regarding sociodemographic indices, namely age group, marital status, family income and level of education, demonstrated that respondents were less likely to be hesitant or refuse vaccination if they were older than 45 years, not single, earning more than one minimum wage per month, and more educated.

A relatively high rate of blank answers was observed (approximately 20%), which reached nearly 45% amongst the youngest respondents (those aged < 25 years). A similar trend was observed for marital status, family income and level of education, so that the lower in the scale of each index, the higher the respondent was in the rate of blank answers. One might speculate that withdrawal from answering a question could come from social desirability bias – an attempt to omit an opinion that may be judged negatively by others, e.g. hesitancy and refusal to vaccinate. It is important to highlight this point because, for some sociodemographic markers, relatively low rates of hesitancy or refusal to vaccinate were associated with groups with high rates of blank answers, which may have masked the true picture of refusal or hesitancy.

Following this “yes” and “no” strategy of data analysis, the overall profile of an individual likely to refuse or hesitate about vaccination would be a young single parent (< 25 years old) on very low income and little schooling (Table 2). This does not mean to say that those at the opposite end of the spectrum showed no hesitancy. Factors other than education and wealth may influence people at this end of the socioeconomic spectrum, i.e. religious beliefs, preference for naturopathy/homeopathy, and easy access to on-line discussion forums promoting anti-vaccination views⁷. Evidence to support this idea may derive from some of the top 5 reasons for vaccine hesitancy or refusal, namely “someone else told me the vaccine was not safe” and “other beliefs/traditional medicine”.

Confidence in vaccination was compared with confidence in other public health services, such as community health workers, family planning services and emergency services. This approach may help to establish a perspective of confidence in immunization against other common public health services, which might work as a “confidence gauge,” permitting a dynamic assessment over time¹⁷. In this study, confidence in immunization was higher than in the aforementioned services ($p < 0.05$), similar to the findings in countries such as India, Pakistan and Nigeria¹⁴. Notwithstanding that, in this sample of the Brazilian population the correlations were weak, at best, and to rigorously establish whether confidence in one service predicts confidence in another, it may be necessary to conduct larger surveys that are able to represent higher-risk strata of the population reliably. Furthermore, linguistic differences regarding translated meanings of “a little” and “not much” may have contributed to reducing the strength of the contingency analyses.

Some important limitations should be noted for this study. First, a population sample bias was observed when comparing sociodemographic indices between the sample surveyed herein and the national distribution. The former comprised mostly individuals in a relatively high-income bracket

(67%), whereas in the overall population less than 5% would belong in such income stratum. Likewise, the proportion of individuals in the lowest income group was 3%, whereas the national proportion is 34%, with considerable regional variations. The fact that most of the interviews were performed online may have had an impact on such distributions, as access to information technology is a limiting factor for some of the population. The inclusion of lower income groups was possible due to the opportunistic interviewing of parents accompanying their children for oral health checks, despite the risk of nondifferential misclassification arising from the use of two interview methods with two distinct sociodemographic groups. The individuals in the lower income bracket revealed the lowest vaccination acceptance rates and potentially the highest vaccine hesitancy rates, which highlights the need to investigate this population further, especially as they comprise over a third of the national population. Consequently, high vaccine hesitancy amongst individuals within such groups could potentially undermine the effectiveness of large-scale vaccination programs.

Second, the survey questions were designed by the VCP, and although the classification of answers within the confidence/convenience/complacency framework was agreed by independent coders, some of the questions may have posed comprehension problems, especially for respondents from less privileged backgrounds, which may have influenced the relatively weak correlations.

Conclusion

This study provides an exploratory basis for further implementation of the VCI survey items and indicates several areas to be investigated. In particular, it seems that both ends of the socioeconomic spectrum are somewhat hesitant towards vaccines, but possibly for different reasons. Likewise, the prevalence of “vaccine not necessary” responses among the hesitant respondents suggests a degree of complacency mixed in with possible confidence issues. Given the dynamic and changing nature of vaccine hesitancy, the importance of on-going monitoring should not be understated, as studies showing low rates of hesitancy one year may face a different outcome a year later, which emphasizes the importance of monitoring trends. Despite the socioeconomic analysis performed herein, some questions remain unanswered, such as the specific reasons for hesitancy or vaccine refusal in well-educated and wealthier groups and for whom strategies should be developed to engage hesitant publics, health providers and policy makers.

Contributors

A. L. Brown contributed to the concept, interviews, and data analysis. M. Sperandio contributed to the concept, data analysis, and manuscript writing. C. P. Turssi contributed to the statistical analysis and manuscript draft. R. M. A. Leite and V. F. Berton contributed to the concept, interviews, and manuscript review. R. M. Succi contributed to the manuscript drafting and review. H. Larson contributed to the concept/design, data analysis, and manuscript drafting. M. H. Napimoga contributed to the concept, interviews, supervision, and manuscript review.

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Resumo

Apesar dos benefícios globais da imunização, a hesitação em vacinar é uma tendência crescente que tem sido associada ao ressurgimento das doenças imunopreveníveis. O estudo teve como objetivo avaliar a confiança nas vacinas e a hesitação em vacinar no Brasil, como parte de um projeto mais amplo para mapear a confiança em vacinas em nível global. Foram entrevistadas mil pessoas, direta ou virtualmente, usando um questionário geral sobre percepção em relação às vacinas e à vacinação. Foram utilizadas perguntas exploratórias adicionais no subconjunto de entrevistados que eram pais de crianças abaixo de cinco anos de idade. Essas perguntas produziram informações sobre o comportamento em relação à vacinação, opiniões sobre vacinação e serviços públicos de saúde e hesitação em vacinar. Os motivos da hesitação foram classificados em relação à confiança, conveniência e/ou acomodação, e a população também foi analisada conforme as características sociodemográficas. Os resultados mostraram que a confiança geral na imunização foi maior do que nos serviços de planejamento familiar, agentes comunitários de saúde e serviços de emergência. Setenta e seis pessoas relataram hesitação em vacinar. Os motivos mais frequentes da hesitação diziam respeito a confiança (41,4%), eficácia/segurança da vacina (25,5%) e preocupações com eventos adversos (23,6%). A análise sociodemográfica mostrou que a hesitação em vacinar estava associada ao estado civil, escolaridade e renda. Apesar da alta confiança geral na vacinação, uma clara tendência para níveis de confiança mais baixos esteve associada a níveis mais altos de hesitação, o que justifica o monitoramento permanente dessa tendência, em função da natureza dinâmica da hesitação em vacinar.

Recusa de Vacinação; Programas de Imunização; Vacinação; Vacinas

Resumen

A pesar de los beneficios generales de la inmunización, la renuencia a la vacunación ha sido una tendencia en crecimiento que ha sido asociada con el resurgimiento de las enfermedades prevenibles por vacunación. El objetivo de este estudio fue evaluar la confianza y renuencia a las vacunas en Brasil, como parte de un proyecto más amplio para mapear la confianza en las vacunas globalmente. Mil sujetos fueron entrevistados, bien en línea o cara-a-cara, mediante un cuestionario general respecto a sus percepciones sobre las vacunas y la vacunación. Se utilizaron otras preguntas exploratorias con el subconjunto de encuestados, que eran padres de niños con una edad inferior a los cinco años. Tales preguntas recabaron información respecto al comportamiento sobre la vacunación, opiniones sobre vacunación y servicios de salud gubernamentales, así como su renuencia a las vacunas. Las razones para esta última se clasificaron como aquellas relacionadas con la confianza, conveniencia y/o complacencia, y la población fue también analizada sociodemográficamente. Los resultados mostraron que la confianza general en inmunización fue más alta que la confianza en servicios de planificación familiar, trabajadores de salud comunitarios y servicios de emergencia. Setenta y seis personas informaron de renuencia a la vacunación. Las razones más comunes para la renuencia fueron temas relacionados con la confianza (41,4%), eficacia/seguridad de la vacuna (25,5%) y preocupaciones sobre efectos adversos (23,6%). El análisis sociodemográfico reveló que la renuencia a la vacunación estaba asociada con el estado civil, nivel de educación e ingresos. A pesar de que la confianza general en las vacunas es alta, existe una clara tendencia hacia niveles más bajos de confianza, que estaba asociada con altos niveles de renuencia, lo que garantiza una supervisión permanente, debido a la dinámica y naturaleza cambiante del rechazo a las vacunas.

Negativa a la Vacunación; Programas de Inmunización; Vacunación; Vacunas

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