

Supplementary Materials

File S1: Informed Consent, Questionnaire and Tables

INFORMED CONSENT (BLANK FORM)

The aim of this survey is collecting information about general population's doubts concerning vaccine production process, in order to understand how this topic may influence the vaccine hesitancy.

The study is promoted by the Department of Health Sciences of the University of Florence.

The questionnaire is completely anonymous, and data will be collected and managed in aggregated form according to European Union Regulation 2016/679 of European Parliament and the Italian Legislative Decree 2018/101.

Do you agree to participate to the study?

☐ I agree ☐ I do not agree

QUESTIONNAIRE

SECTION 1: SOCIODEMOGRAPHIC INFORMATION

- Age (years): select from 18 to 100
- Gender: ☐ M; ☐ F
- Do you work or have an education in the healthcare sector? ☐ Yes; ☐ No
- Do you have minor offspring? ☐ Yes; ☐ No

SECTION 2: KNOWLEDGE ABOUT VACCINE PRODUCTION PROCESS

- In your opinion, are controls carried out during vaccine production? ☐ Yes; ☐ Not enough;
☐ No

- Compared to the most common drugs, the vaccine production is: ☐ More controlled; ☐ Less controlled; ☐ Equally controlled
- How long does the process of vaccine production take? ☐ Less than 2 months; ☐ 6-24 Months; ☐ 3-5 years
- During the vaccine production process, how much time is spent on quality controls? ☐ <10% of the time; ☐ 10-50% of the time; ☐ >50% of the time
- Who controls the vaccine production process? ☐ National Health Institute; ☐ The drug company; ☐ External laboratories; ☐ All previous answers; ☐ None of the previous answers
- When is the quality of vaccine controlled? ☐ At different stages of production; ☐ During the shipping and the storage; ☐ All the previous answers; ☐ None of the previous answers
- Do you think the vaccine could be contaminated by impurities during production process?
☐ Yes; ☐ No
- Do you think adequate controls are carried out to ensure that the vaccine is not contaminated by impurities during the production process? ☐ Yes; ☐ No
- Is it guaranteed that the licensed vaccine has the same characteristics as the one studied before the production process? ☐ Yes; ☐ No
- If one day you could visit a pharmaceutical industry, what would you like to ask or to see? (Open short answer)

TABLES

Table S1. Results of Section 2 of questionnaire: summary of the distribution of knowledge and opinions about vaccine production process stratified by socio-demographic characteristics. [NOTE. HC: Healthcare. §: correct answer].

		Female		Male		Work/education: HC		Work/education: not HC		Minor offspring		Non-minors offspring		All	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
In your opinion, are controls carried out during the vaccine production?	Yes	83	94.3	44	93.6	47	100.0	80	90.9	35	92.1	92	94.8	127	94.1
	No	5	5.7	3	6.4	0	0	8	9.1	3	7.9	5	5.2	8	5.9
	Total	88	100	47	100	47	100	88	100	38	100	97	100	135	100
	<i>p</i> -value	0.87		0.03		0.54									
Compared to the most common drugs, the vaccine production is:	More controlled (§)	35	39.8	25	53.2	20	42.6	40	45.5	14	36.8	46	47.4	60	44.4
	Less controlled	3	3.4	1	2.1	0	0	4	4.5	1	2.6	3	3.1	4	3.0
	Equally controlled	50	56.8	21	44.7	27	57.4	44	50.0	23	60.5	48	49.5	71	52.6
	Total	88	100	47	100	47	100	88	100	38	100	97	100	135	100
	<i>p</i> -value	0.32		0.28		0.51									
How long does the process of vaccine production take?	Less than 2 months	6	6.8	3	6.4	2	4.3	7	8.0	3	7.9	6	6.2	9	6.7
	6-24 months (§)	61	69.3	28	59.6	32	68.1	57	64.8	20	52.6	69	71.1	89	65.9
	3-5 years	21	23.9	16	34.0	13	27.7	24	27.3	15	39.5	22	22.7	37	27.4
	Total	88	100	47	100	47	100	88	100	38	100	97	100	135	100
	<i>p</i> -value	0.45		0.71		0.11									

Table S1.

		Female		Male		Work/education: HC		Work/education: not HC		Minors offspring		Non-minors offspring		All	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
During the vaccine production process, how much time is spent on quality controls?	<10% of the time	3	3.4	2	4.3	1	2.1	4	4.5	2	5.3	3	3.1	5	3.7
	10-50% of the time	29	33.0	17	36.2	9	19.1	37	42.0	11	28.9	35	36.1	46	34.1
	>50% of the time (\$)	56	63.6	28	59.6	37	78.7	47	53.4	25	65.8	59	60.8	84	62.2
	Total	88	100	47	100	47	100	88	100	38	100	97	100	135	100
	p-value	0.89				0.02				0.65					
Who controls the vaccine production process?	National Health Institute	24	27.3	14	29.8	6	12.8	32	36.4	12	31.6	26	26.8	38	28.1
	The drug company	7	8.0	2	4.3	5	10.6	4	4.5	1	2.6	8	8.2	9	6.7
	External laboratories	7	8.0	3	6.4	4	8.5	6	6.8	4	10.5	6	6.2	10	7.4
	All the previous answers (\$)	50	56.8	28	59.6	32	68.1	46	52.3	21	55.3	57	58.8	78	57.8
	None of the previous answers	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Total	88	100	47	100	47	100	88	100	38	100	97	100	135	100
	p-value	0.84				0.03				0.52					

Table S1.

		Female		Male		Work/education: HC		Work/education: not HC		Minors offspring		Non-minors offspring		All	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
When is the quality of vaccine controlled?	At all stages of production	40	45.5	24	51.1	16	34.0	48	54.5	19	50.0	45	46.4	64	47.4
	During transportation and storage	1	1.1	0	0.0	1	2.1	0	0.0	0	0.0	1	1.0	1	0.7
	All the previous answers (\$)	46	52.3	21	44.7	29	61.7	38	43.2	18	47.4	49	50.5	67	49.6
	None	1	1.1	2	4.3	1	2.1	2	2.3	1	2.6	2	2.1	3	2.2
	Total	88	100	47	100	47	100	88	100	38	100	97	100	135	100
	p-value	0.49				0.08				0.91					
Do you think the vaccine could be contaminated by impurities during the production process?	Yes	41	46.6	19	40.4	23	48.9	37	42.0	18	47.4	42	43.3	60	44.4
	No	47	53.4	28	59.6	24	51.1	51	58.0	20	52.6	55	56.7	75	55.6
	Total	88	100	47	100	47	100	88	100	38	100	97	100	135	100
	P Value	0.49				0.44				0.67					
Do you think adequate controls are carried out to ensure that the vaccine is not contaminated with impurities during the production process?	Yes	78	88.6	43	91.5	46	97.9	75	85.2	33	86.8	88	90.7	121	89.6
	No	10	11.4	4	8.5	1	2.1	13	14.8	5	13.2	9	9.3	14	10.4
	Total	88	100	47	100	47	100	88	100	38	100	97	100	135	100
	P Value	0.60				0.02				0.51					

Table S1.

		Female		Male		Work/education: HC		Work/education: not HC		Minors offspring		Non-minors offspring		All	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
Is it guaranteed that the licensed vaccine has the same characteristics as the one studied before the production process?	Yes	65	73.9	42	89.4	40	85.1	67	76.1	26	68.4	81	83.5	107	79.3
	No	23	26.1	5	10.6	7	14.9	21	23.9	12	31.6	16	16.5	28	20.7
	Total	88	100	47	100	47	100	88	100	38	100	97	100	135	100
	P Value	0.03				0.22				0.05					

Table S2. Results of Section 2 of questionnaire: answers related to the age groups. [NOTE. §: correct answer].

		20-29 years		30-39 years		40-49 years		>49 years		Total		<i>p</i> -value
		N	%	N	%	N	%	N	%	N	%	
In your opinion, are controls carried out during the vaccine production?	Yes	47	97.9	48	94.1	15	83.3	17	94.4	127	94.1	0.172
	No	1	2.1	3	5.9	3	16.7	1	5.6	8	5.9	
Compared to the most common drugs, the vaccine production is:	More controlled (§)	22	45.8	24	47.1	6	33.3	8	44.4	60	44.4	0.253
	Less controlled	0	0.0	2	3.9	0	0.0	2	11.2	4	3.0	
	Equally controlled	26	54.2	25	49.0	12	66.7	8	44.4	71	52.6	
How long does the process of vaccine production take?	Less than 2 months	4	8.3	3	5.9	1	5.6	1	5.6	9	6.7	0.582
	6-24 months (§)	35	72.9	29	56.9	12	66.7	13	72.2	89	65.9	
	3-5 years	9	18.8	19	37.3	5	27.8	4	22.2	37	27.4	
During the vaccine production process, how much time is spent on quality controls?	<10% of the time	2	4.2	2	3.9	0	0.0	1	5.6	5	3.7	0.707
	10-50% of the time	18	37.5	13	25.5	8	44.4	7	38.9	46	34.1	
	>50% of the time (§)	28	58.3	36	70.6	10	55.6	10	55.6	84	62.2	

Table S2.

		20-29 years		30-39 years		40-49 years		>49 years		Total		<i>p</i> -value
		N	%	N	%	N	%	N	%	N	%	
Who controls the vaccine production process?	National Health Institute	12	25.0	14	27.5	4	22.2	8	44.4	38	28.1	0.212
	The drug company	5	10.4	3	5.9	1	5.6	0	0.0	9	6.7	
	External laboratories	2	4.2	4	7.8	4	22.2	0	0.0	10	7.4	
	All the previous answers (§)	29	60.4	30	58.8	9	50.0	10	55.6	78	57.8	
	None of the previous answers	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	
When is the quality of vaccine controlled?	At all stages of production	19	39.6	24	47.1	9	50.0	12	66.7	64	47.4	0.669
	During transportation and storage	1	2.1	0	0.0	0	0.0	0	0.0	1	0.7	
	All the previous answers (§)	27	56.3	26	51.0	8	44.4	6	33.3	67	49.6	
	None of the previous answers	1	2.1	1	2.0	1	5.6	0	0.0	3	2.2	

Table S2.

		20-29 years		30-39 years		40-49 years		>49 years		Total		<i>p</i> -value
		N	%	N	%	N	%	N	%	N	%	
Do you think the vaccine could be contaminated by impurities during the production process?	Yes	19	39.6	25	49.0	9	50.0	7	38.9	60	44.4	0.719
	No	29	60.4	26	51.0	9	50.0	11	61.1	75	55.6	
Do you think adequate controls are carried out to ensure that the vaccine is not contaminated by impurities during the production process?	Yes	45	93.8	45	88.2	15	83.3	16	88.9	121	89.6	0.623
	No	3	6.3	6	11.8	3	16.7	2	11.1	14	10.4	
Is it guaranteed that the licensed vaccine has the same characteristics as the one studied before the production process?	Yes	41	85.4	40	78.4	12	66.7	14	77.8	107	79.3	0.409
	No	7	14.6	11	21.6	6	33.3	4	22.2	28	20.7	