

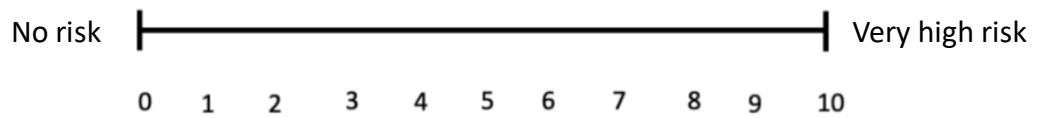
Supplementary material

Study questionnaire.

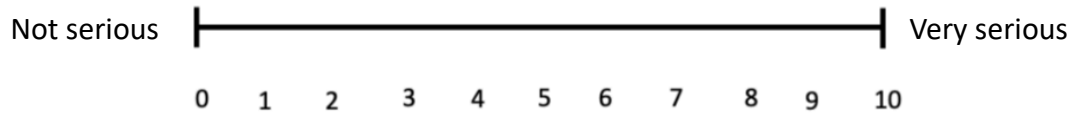
Acceptance of COVID-19 vaccination by dialysis patients.

Please place a cursor corresponding to your answer on a scale of 0 to 10.

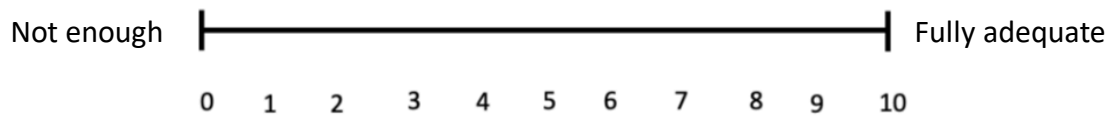
1. Do you think you are a person at risk for COVID-19?



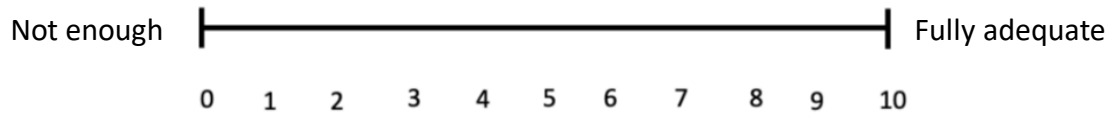
2. Do you think that COVID-19 is a serious disease?



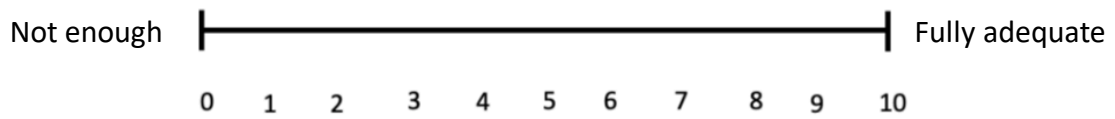
3. Do you think you get enough information about COVID-19 from the media?



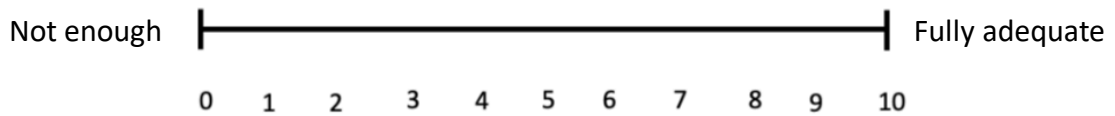
4. Do you feel you have enough information about COVID-19 from the dialysis team?



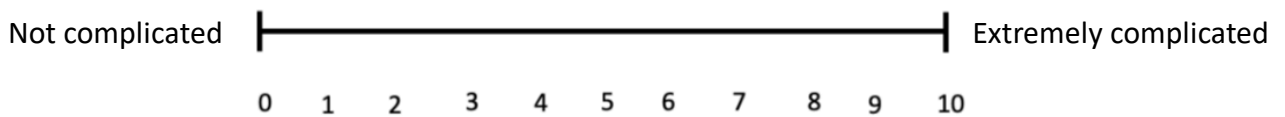
5. Do you think you have enough information about COVID-19 vaccines from the media?



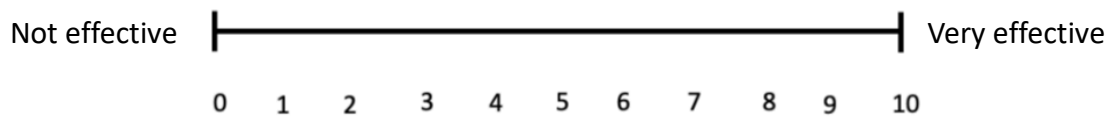
6. Do you feel you have enough information about COVID-19 vaccines from the dialysis team?



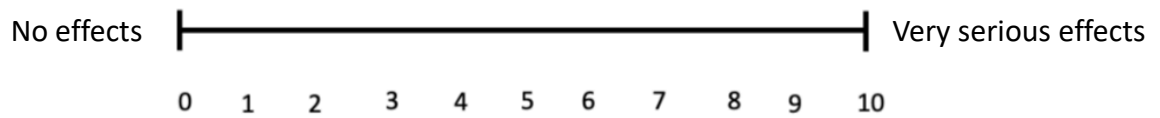
7. Do you think it is complicated for you to get vaccinated against COVID-19?



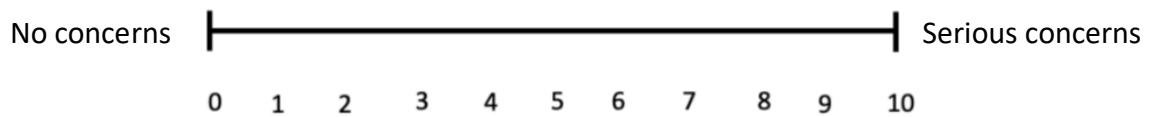
8. Do you think that COVID-19 vaccine is effective?



9. Do you think that COVID-19 vaccines can cause serious side effects?

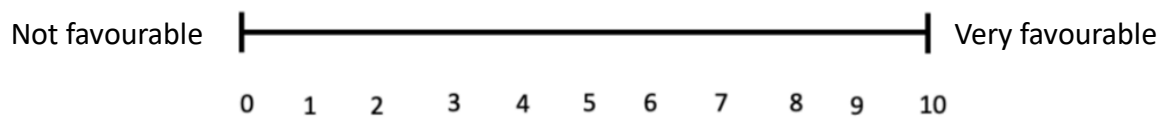


10. Do you have any concerns about the safety of COVID-19 vaccines?



What are they? _____

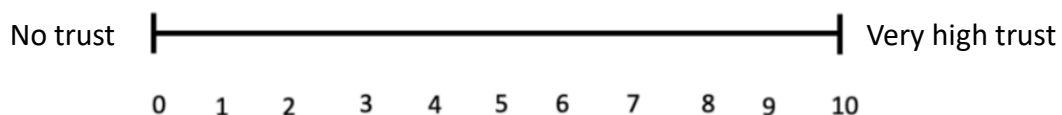
11. In general, are you in favor of vaccination?



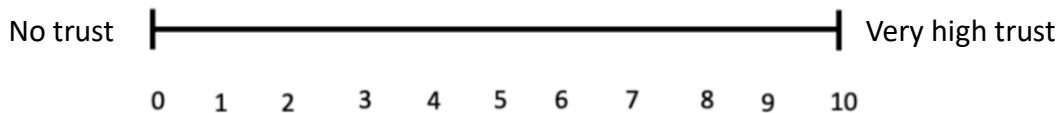
12. Did you get your seasonal flu shot this year?

Yes No I don't know

13. In general, do you trust the authorities to manage the health crisis?



14. In general, do you trust scientists to manage the health crisis?



15. Who do you trust to inform you about COVID-19 vaccines?

- Media
- General practitioner
- Dialysis team
- Family
- Authorities
- Pharmaceutical laboratories

16. Are you willing to be vaccinated against COVID-19?

Yes No I don't know

17. If your answered yes, say why.

To protect yourself

Yes No I don't know

To protect those around you

Yes No I don't know

Other reasons : _____

18. If you answered no, say why.

Supplementary table S1. General data on patients who did not answer the questionnaires and main reasons for declining/not being asked to participate in the study.

	All	Centers				p-values
		Le Mans	Cagliari	Paris	Pavia	
N (% of center)	58 (12.2%)	9 (6.6%)	5 (3.6%)	37 (45.7%)	7 (6.0%)	
Age, median (min-max)	71 (19-96)	69 (33-82)	65 (54-91)	72 (19-96)	75 (67-87)	0.194
Gender (woman), (%)	43.1%	33.3%	20.0%	46.0%	57.1%	0.547
Charlson Comorbidity Index, median (min-max)	8 (2-15)	8 (2-12)	7 (4-12)	7 (2-14)	9 (5-15)	0.772
Patients born in a country other than the one of residence, n (%)	34 (58.6%)	5 (55.6%)	2 (40.0%)	27 (73.0%)	0	0.001
Education level, n (%)						0.014
Illiterate	13 (22.4%)	0	0	13 (35.1%)	0	
Primary to middle school	27 (46.6%)	5 (55.6%)	5 (100%)	11 (29.7%)	6 (85.7%)	
Secondary school	8 (13.8%)	3 (33.3%)	0	5 (13.5%)	0	
University	10 (12.2%)	1 (11.1%)	0	8 (21.6%)	1 (14.3%)	
Local language understanding, n (%)						0.047
0: No comprehension	1 (1.7%)	0	0	1 (2.7%)	0	
1:	5 (8.6%)	2 (22.2%)	2 (40.0%)	1 (2.7%)	0	
2:	7 (12.1%)	2 (22.2%)	0	5 (13.5%)	0	
3: Some difficulty	5 (8.6%)	0	0	5 (13.5%)	0	
4: Almost complete understanding	10 (17.2%)	0	0	10 (27.0%)	0	
5: Near native speaker competence/bilingual	30 (51.7%)	5 (55.6%)	3 (60.0%)	15 (40.5%)	7 (100%)	
Activity, n (%)						0.072
Student	1 (1.7%)	0	0	1 (2.7%)	0	
Unemployed	19 (32.8%)	3 (33.3%)	0	16 (43.2%)	0	
Working full or part time	6 (10.4%)	0	0	6 (16.2%)	0	
Retired	32 (55.2%)	6 (66.7%)	5 (100%)	14 (37.8%)	7 (100%)	
Primary kidney disease, n (%)						0.005
Glomerulonephritis / Systemic disease	11 (19%)	0	0	9 (24.3%)	2 (28.6%)	
Nephroangiosclerosis / Diabetes	20 (34.5%)	1 (11.1%)	1 (20.0%)	18 (48.7%)	0	
Polycystic kidney disease	2 (3.5%)	0	1 (20.0%)	1 (2.7%)	0	
Other	25 (43.1%)	8 (88.9%)	3 (60.0%)	9 (24.3%)	5 (71.4%)	
Renal replacement therapy vintage (year), median (min-max)	3.5 (0.1-24.1)	1.8 (0.1-4.1)	2.0 (1.3-19.0)	3.6 (0.5-14.2)	7.7 (1.1-24.1)	0.025
Type of dialysis, n (%)						0.999
Hemodialysis	57 (98.3%)	9 (100%)	5 (100%)	36 (97.3%)	7 (100%)	
Home-hemodialysis	1 (1.7%)	0 (0%)	0 (0%)	1 (2.7%)	0 (0%)	
Reason for not completing the questionnaire						0.114
Not able to answer (lack of language ability/cognitive impairment)	45 (77.6%)	7 (77.8%)	5 (100%)	30 (81.1%)	3 (42.9%)	
Decided not to answer	13 (22.4%)	2 (22.2%)	0	7 (18.9%)	4 (57.1%)	
Previous kidney transplant, n (%)	4 (6.9%)	0	0	3 (8.1%)	1 (14.3%)	-
Vaccine not administered, n (%)	12 (20.7%)	3 (33.3%)	0	8 (21.6%)	1 (14.3%)	0.632
Not able to be vaccinated (contraindication – COVID infection - death), n (%)	1 (8.3%)	0	0	0	1 (100%)	0.083
Decided to refuse the vaccination, n (%)	11 (91.7%)	3 (100%)	0	8 (100%)	0	

Supplemental table S2. Distribution of the quantitative answers categorized into the three main scores (low: 0-3; medium 4-6; high 7-10).

Questions	Centers					p-values
	All	Le Mans	Cagliari	Paris	Pavia	
n	417	128	136	44	109	
Do you think you are a person at risk for COVID-19? (%)						0.053
Low	89 (21.5%)	17 (13.4%)	33 (24.3%)	9 (21.4%)	30 (27.5%)	
Medium	101 (24.4%)	39 (30.7%)	31 (22.8%)	13 (31.0%)	18 (16.5%)	
High	224 (54.1%)	71 (55.9%)	72 (52.9%)	20 (47.6%)	61 (56%)	
Do you think that COVID-19 is a serious disease?						0.499
Low	26 (6.3%)	7 (5.5%)	10 (7.4%)	1 (2.4%)	8 (7.4%)	
Medium	54 (13.1%)	20 (15.7%)	12 (8.8%)	5 (11.9%)	17 (15.7%)	
High	333 (80.6%)	100 (78.7%)	114 (83.8%)	36 (85.7%)	83 (76.9%)	
Do you think you get enough information about COVID-19 from the media?						0.080
Low	66 (15.9%)	22 (17.3%)	20 (14.7%)	3 (7.1%)	21 (19.3%)	
Medium	97 (23.4%)	26 (20.5%)	39 (28.7%)	5 (11.9%)	27 (24.8%)	
High	251 (60.6%)	79 (62.2%)	77 (56.6%)	34 (81%)	61 (56%)	
Do you feel you have enough information about COVID-19 from the dialysis team?						<0.001
Low	102 (24.8%)	52 (40.6%)	20 (15%)	4 (9.8%)	26 (23.9%)	
Medium	98 (23.8%)	32 (25%)	31 (23.3%)	11 (26.8%)	24 (22%)	
High	211 (51.3%)	44 (34.4%)	82 (61.7%)	26 (63.4%)	59 (54.1%)	
Do you think you have enough information about COVID-19 vaccines from the media?						0.681
Low	98 (23.8%)	33 (26.4%)	30 (22.1%)	8 (19.5%)	27 (24.8%)	
Medium	130 (31.6%)	36 (28.8%)	47 (34.6%)	10 (24.4%)	37 (33.9%)	
High	183 (44.5%)	56 (44.8%)	59 (43.4%)	23 (56.1%)	45 (41.3%)	
Do you feel you have enough information about COVID-19 vaccines from the dialysis team?						<0.001
Low	132 (32.4%)	67 (53.2%)	28 (21.1%)	6 (15%)	31 (28.4%)	
Medium	105 (25.7%)	36 (28.6%)	37 (27.8%)	10 (25%)	22 (20.2%)	
High	171 (41.9%)	23 (18.3%)	68 (51.1%)	24 (60%)	56 (51.4%)	
Do you think it is complicated for you to get vaccinated against COVID-19?						0.553
Low	251 (61.7%)	77 (63.1%)	84 (61.8%)	21 (52.5%)	69 (63.3%)	
Medium	70 (17.2%)	20 (16.4%)	28 (20.6%)	8 (20%)	14 (12.8%)	
High	86 (21.1%)	25 (20.5%)	24 (17.6%)	11 (27.5%)	26 (23.9%)	
Do you think that COVID-19 vaccine is effective?						<0.001
Low	40 (10%)	19 (16.1%)	9 (6.6%)	8 (19%)	4 (3.8%)	
Medium	117 (29.1%)	53 (44.9%)	36 (26.5%)	10 (23.8%)	18 (17%)	
High	245 (60.9%)	46 (39%)	91 (66.9%)	24 (57.1%)	84 (79.2%)	
Do you think that COVID-19 vaccines can cause serious side effects?						0.047
Low	143 (35.5%)	30 (25.4%)	48 (35.6%)	14 (33.3%)	51 (47.2%)	
Medium	142 (35.2%)	49 (41.5%)	49 (36.3%)	13 (31%)	31 (28.7%)	
High	118 (29.3%)	39 (33.1%)	38 (28.1%)	15 (35.7%)	26 (24.1%)	
Do you have any concerns about the safety of COVID-19 vaccines?						0.575
Low	210 (51.2%)	57 (45.2%)	74 (55.2%)	20 (47.6%)	59 (54.6%)	
Medium	75 (18.3%)	27 (21.4%)	22 (16.4%)	6 (14.3%)	20 (18.5%)	
High	125 (30.5%)	42 (33.3%)	38 (28.4%)	16 (38.1%)	29 (26.9%)	
In general, are you in favor of vaccination?						<0.001
Low	35 (8.5%)	18 (14.1%)	3 (2.2%)	10 (24.4%)	4 (3.7%)	

Medium	39 (9.4%)	12 (9.4%)	11 (8.1%)	3 (7.3%)	13 (11.9%)	
High	340 (82.1%)	98 (76.6%)	122 (89.7%)	28 (68.3%)	92 (84.4%)	0.571
In general, do you trust the authorities to manage the health crisis?						
Low	119 (29%)	33 (26.4%)	39 (29.1%)	12 (28.6%)	35 (32.1%)	
Medium	126 (30.7%)	41 (32.8%)	45 (33.6%)	15 (35.7%)	25 (22.9%)	
High	165 (40.2%)	51 (40.8%)	50 (37.3%)	15 (35.7%)	49 (45%)	
In general, do you trust scientists to manage the health crisis?						0.286
Low	49 (12%)	17 (13.4%)	16 (11.9%)	7 (17.9%)	9 (8.4%)	
Medium	110 (27%)	32 (25.2%)	32 (23.9%)	15 (38.5%)	31 (29%)	
High	248 (60.9%)	78 (61.4%)	86 (64.2%)	17 (43.6%)	67 (62.6%)	

Supplementary table S3. Univariate logistic regression correlating COVID-19 vaccine hesitancy (refusal in the questionnaire). Analogic scores analyzed as continuous scores.

Univariate analysis	Odds-ratio	CI 95%		p-values
		Lower	Higher	
Covid-19 vaccine acceptancy questionnaire				
Do you think you are a person at risk for COVID-19? (Low vs. Medium and High)	0.551	0.381	0.792	0.001
Do you think that COVID-19 is a serious disease? (Low, Medium and High)	0.444	0.291	0.688	<0.001
Do you think you get enough information about COVID-19 from the media? (Low, Medium and High)	0.797	0.525	1.138	0.175
Do you feel you have enough information about COVID-19 from the dialysis team? (Low, Medium and High)	0.707	0.494	1.013	0.057
Do you think you have enough information about COVID-19 vaccines from the media? (Low, Medium and High)	0.581	0.393	0.851	0.007
Do you feel you have enough information about COVID-19 vaccines from the dialysis team? (Low, Medium and High)	0.705	0.487	1.012	0.060
Do you think that COVID-19 vaccine is effective? (Low, Medium and High)	0.123	0.070	0.204	<0.001
In general, are you in favor of vaccination? (Low, Medium and High)	0.157	0.100	0.238	<0.001
In general, do you trust the authorities to manage the health crisis? (Low, Medium and High)	0.401	0.260	0.597	<0.001
Do you think it is complicated for you to get vaccinated against COVID-19? (Low, Medium and High)	2.434	1.686	3.565	<0.001
Do you think that COVID-19 vaccines can cause serious side effects? (Low, Medium and High)	3.892	2.397	6.741	<0.001
Do you have any concerns about the safety of COVID-19 vaccines? (Low, Medium and High)	0.157	0.100	0.238	<0.001
In general, do you trust scientists to manage the health crisis? (Low, Medium and High)	0.283	0.184	0.426	<0.001
Did you get your seasonal flu shot this year? (refusal)	4.451	2.351	8.776	<0.001

Statistically significant data are in bold.

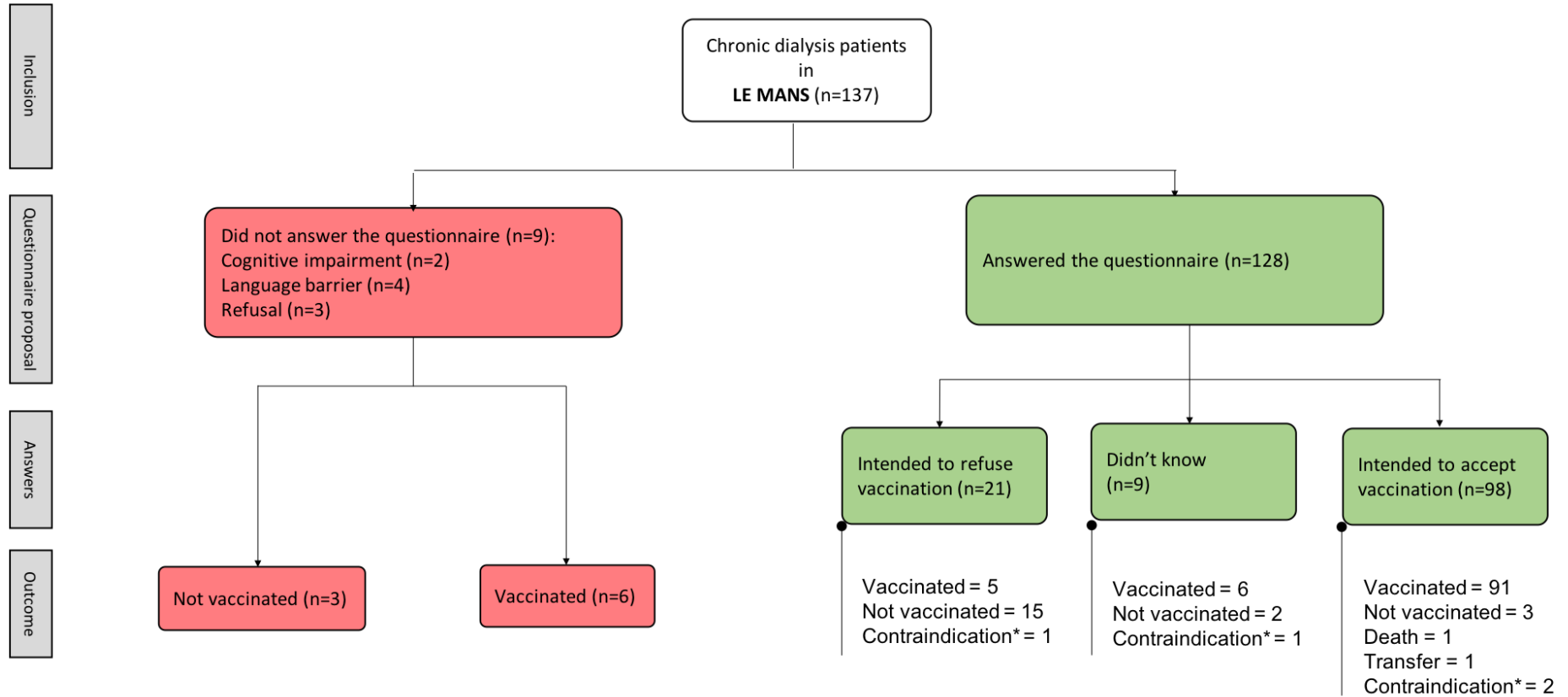
Supplementary table S4. Univariate logistic regression correlating COVID-19 vaccine hesitancy (refusal in the questionnaire) dichotomized as high (7-10) versus low scores (0-6).

Univariate analysis	Odds-ratio	CI 95%		p-values
		Lower	Higher	
Covid-19 vaccine acceptancy questionnaire				
Do you think you are a person at risk for COVID-19? (High vs. Medium and Low)	0.916	0.612	1.370	0.669
Do you think that COVID-19 is a serious disease? (High vs. Medium and Low)	0.741	0.450	1.222	0.240
Do you think you get enough information about COVID-19 from the media? (High vs. Medium and Low)	0.764	0.507	1.151	0.198
Do you feel you have enough information about COVID-19 from the dialysis team? (High vs. Medium and Low)	1.091	0.728	1.635	0.673
Do you think you have enough information about COVID-19 vaccines from the media? (High vs. Medium and Low)	0.771	0.512	1.161	0.213
Do you feel you have enough information about COVID-19 vaccines from the dialysis team? (High vs. Medium and Low)	1.152	0.765	1.736	0.499
Do you think that COVID-19 vaccine is effective? (High vs. Medium and Low)	0.393	0.258	0.599	<0.001
In general, are you in favor of vaccination? (High vs. Medium and Low)	0.322	0.192	0.540	<0.001
In general, do you trust the authorities to manage the health crisis? (High vs. Medium and Low)	0.760	0.501	1.152	0.196
Do you think it is complicated for you to get vaccinated against COVID-19? (High vs. Medium and Low)	2.349	1.447	3.814	<0.001
Do you think that COVID-19 vaccines can cause serious side effects? (High vs. Medium and Low)	1.597	1.028	2.481	0.037
Do you have any concerns about the safety of COVID-19 vaccines? (High vs. Medium and Low)	2.689	1.739	4.156	<0.001
In general, do you trust scientists to manage the health crisis? (High vs. Medium and Low)	0.603	0.398	0.911	0.016

Supplementary table S5. Some thematic comments on the questionnaires.

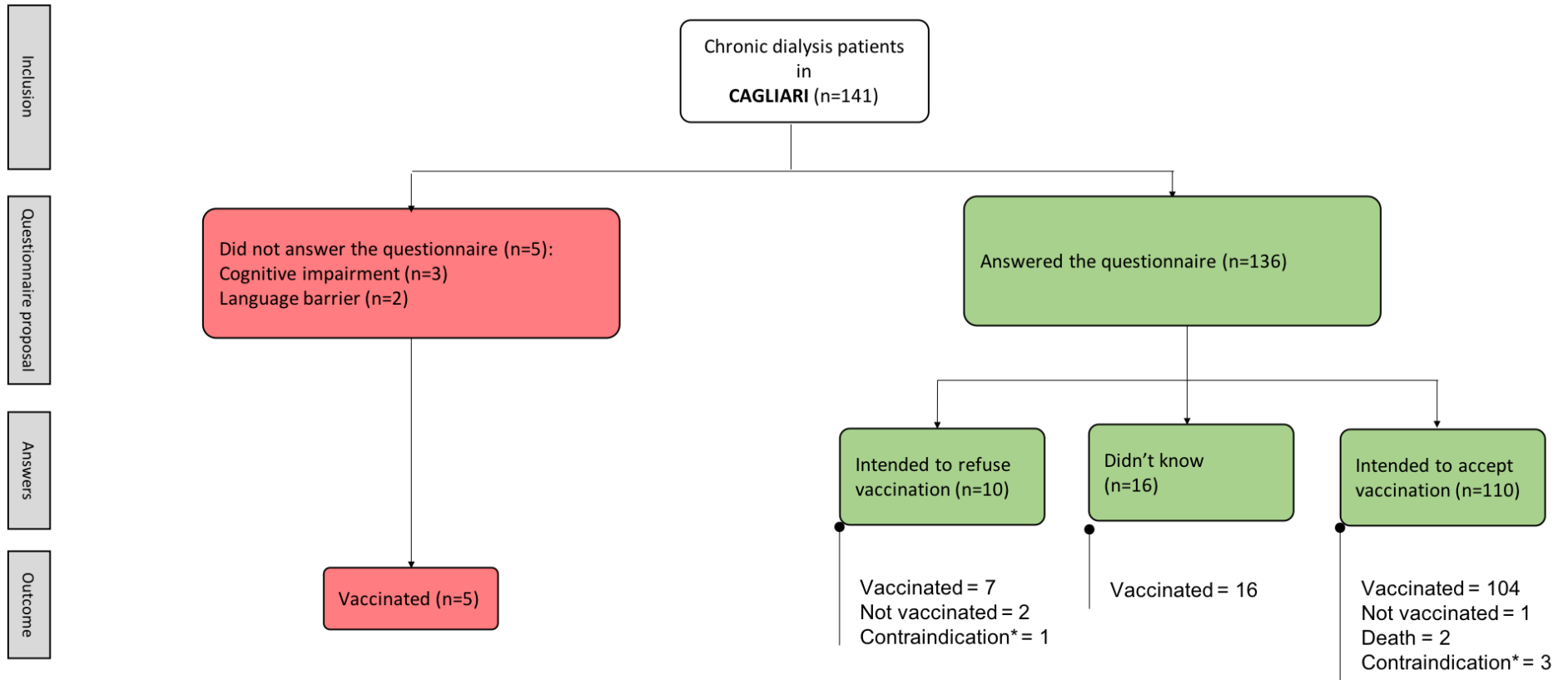
Center	Sex	Age	Do you have any concerns about the safety of COVID-19 vaccines?
Le Mans	M	79	Too much conflicting information, no confidence
Le Mans	F	56	I do and say what my son says
Le Mans	M	41	Fear of contracting Covid-19
Le Mans	F	81	Fear of contracting other illness (grandson had cancer following a vaccine)
Le Mans	M	88	No particular concerns but small doubts
Le Mans	M	73	Firstly because of no confidence in laboratories and secondly, it's a matter of finance
Paris	F	42	Side effects: facial deformity
Pavia	F	81	Everything
Centre	Sex	Age	Who do you trust to inform you about COVID-19 vaccines?
Le Mans	M	64	The WHO Director
Le Mans	M	87	The respondent himself
Centre	Sex	Age	Other reasons for getting vaccinated?
Cagliari	F	63	No more testing for SARS CoV2
Le Mans	M	66	Return of social activities (evenings with friends, going to restaurants, playing pétanque, etc.)
Paris	F	52	No other choice
Paris	M	85	Out of curiosity
Paris	F	43	To reassure my daughter
Centre	Sex	Age	Reason for refusing vaccination
Le Mans	M	79	We are making too much fuss about this virus
Le Mans	F	56	My son does not want me to be vaccinated
Le Mans	F	66	My granddaughter has advised me against it
Le Mans	M	56	Family decision
Le Mans	M	82	Not for the moment, may be in the future
Le Mans	M	60	I consider myself too young to be vaccinated against Covid-19
Paris	M	57	I want to wait until all French people are vaccinated, I want to wait 5 years
Pavia	F	76	Because the vaccine is not produced by the dialysis team but from external enterprises
Cagliari	F	59	Because I am not afraid, I have already been through bad situations
Cagliari	F	60	I don't feel ready!
Cagliari	M	65	My wife is against vaccination. I cannot risk divorce for a vaccine!
Pavia	F	81	The vaccine is a joke! The manufacturers only try to make money by scaring us
Pavia	M	63	Because I don't want to be injected with something that can change my genetic code

Supplementary figure S1. Flow chart of the study population: single center data.



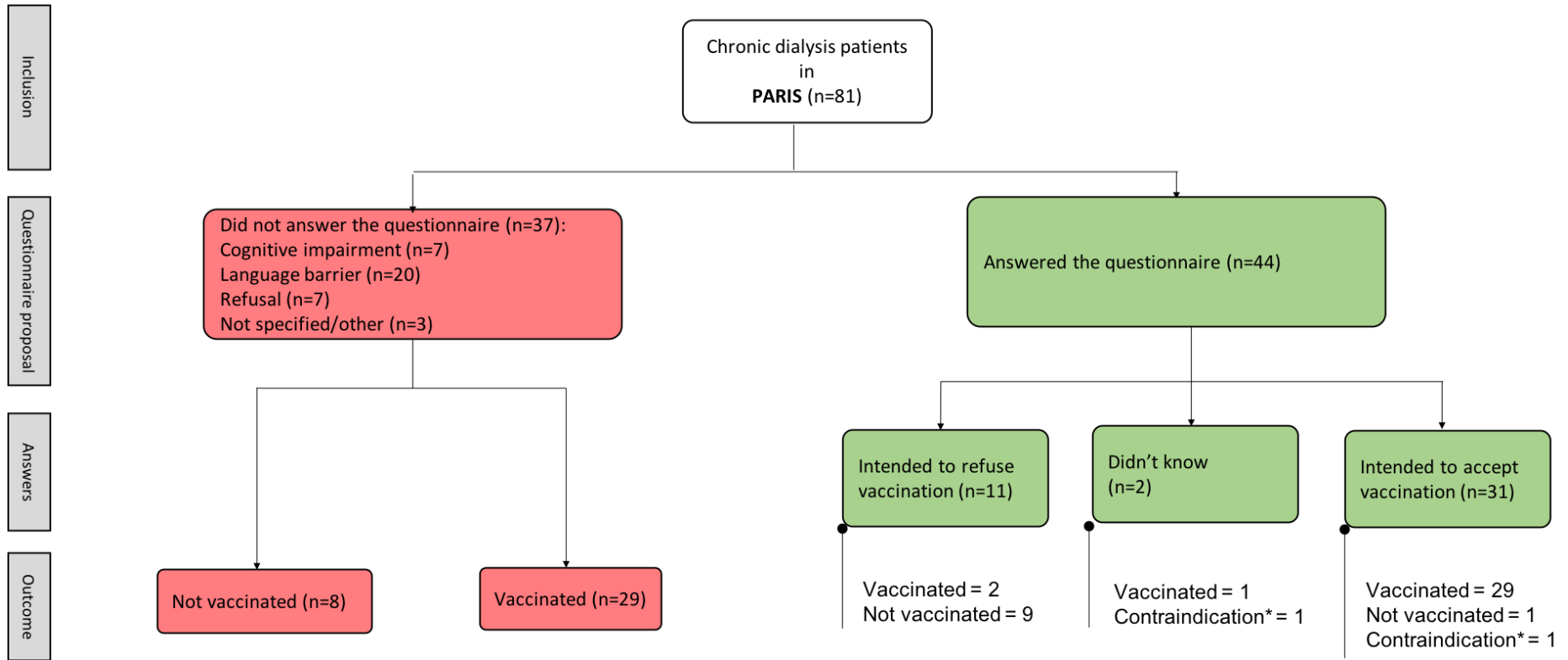
Final data: Vaccination (78.9%), Refusal (16.8%), Contraindication* (2.9%), Transfer (0.7%), Death (0.7%)

*Contraindication: hospitalization, recent COVID-19, plasma exchanges.



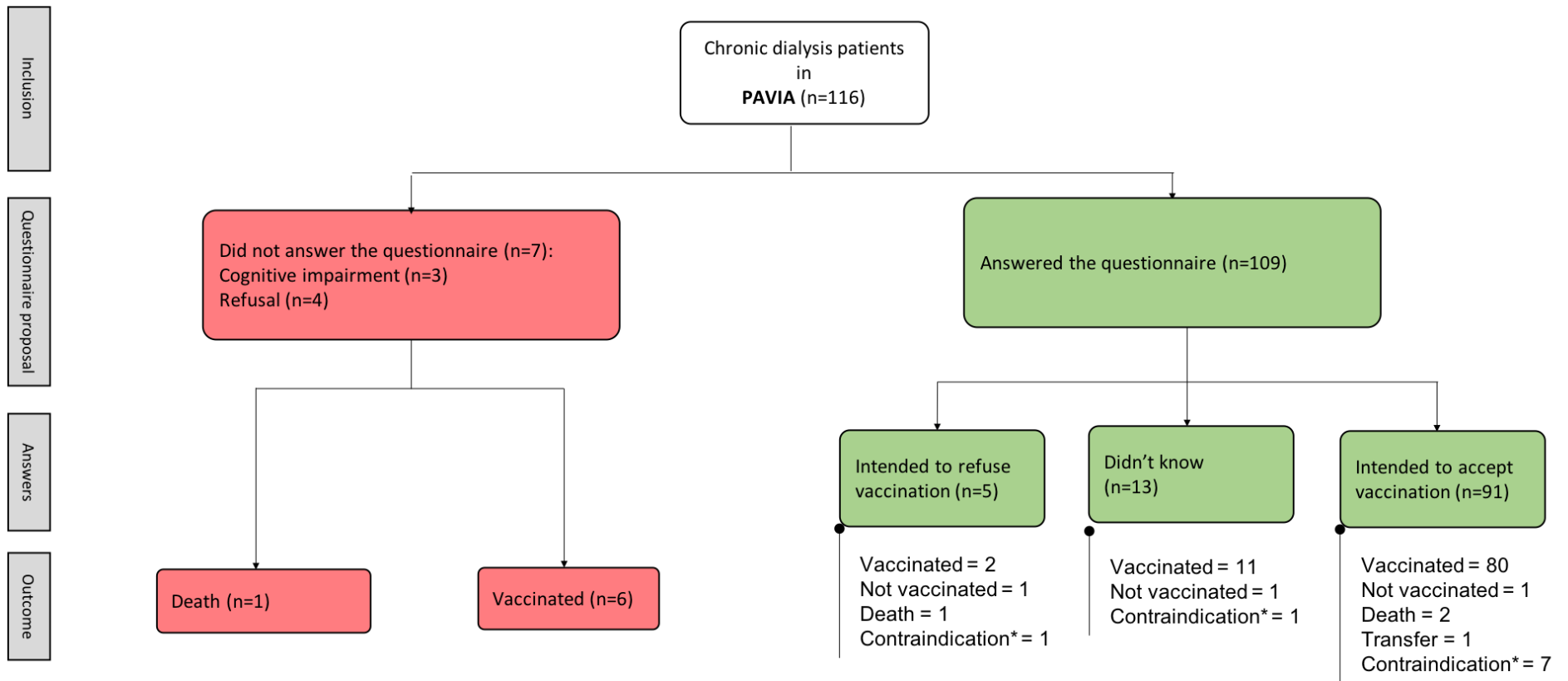
Final data: Vaccination (93.6%), Refusal (2.2%), Contraindication* (2.8%), Death (1.4%)

*Contraindication: hospitalization, recent COVID-19, plasma exchanges.



Final data: Vaccination (75.3%), Refusal (22.2%), Contraindication* (2.5%)

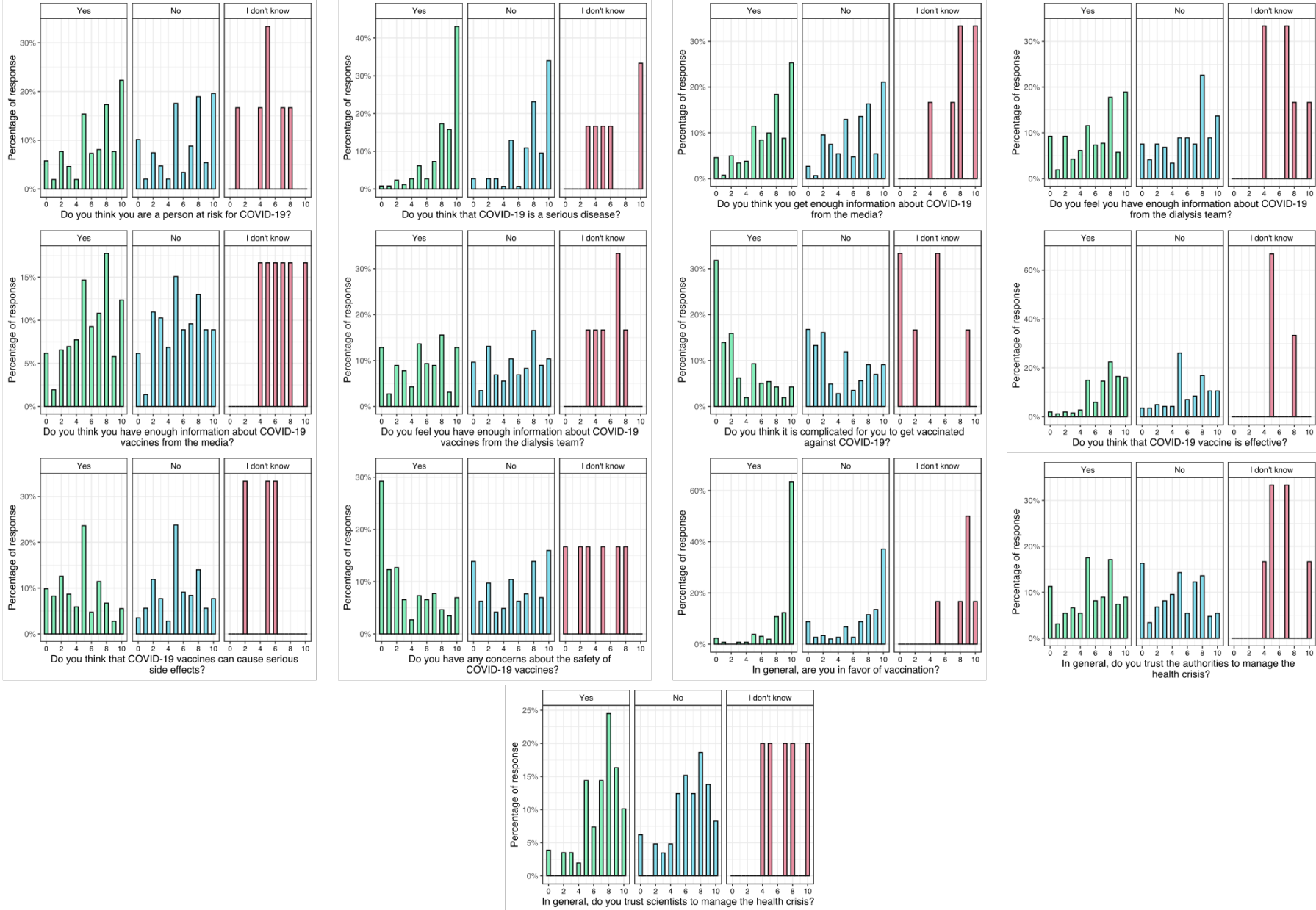
*Contraindication: hospitalization, recent COVID-19, plasma exchanges.



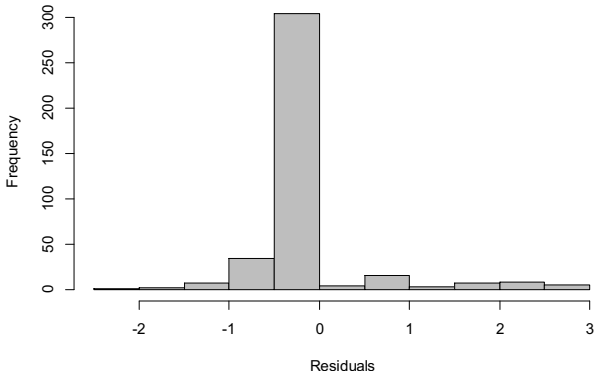
Final data: Vaccination (85.3%), Refusal (2.6%), Contraindication* (7.8%), Transfer (0.9%), Death (3.4%)

*Contraindication: hospitalization, recent COVID-19, plasma exchanges.

Supplementary figure S2. Detail of responses given in the questionnaire.



Supplementary Figure S3. Residuals of the multivariate analysis with vaccine refusal as outcome. Explanatory variables dichotomized (low scores vs others).



Supplementary figure S4. Residuals of the multivariate analysis with vaccine refusal as outcome. Explanatory variables dichotomized (higher scores vs others).

