

1 **Quantification of Covid-19 Vaccine Coercion in India: A Survey Study**

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14

15 **Abstract**

16 **Introduction:** Informed consent is the cornerstone of medical ethics, enshrined in the constitution
17 of most countries, as well as in international documents. However, mandates for Covid-19
18 vaccination as well as coercion was prevalent in many places in the world, including in India.
19 Against this background, we did a cross sectional study to assess and quantify the extent of Covid-
20 19 vaccine coercion in India.

21 **Methods:** A cross sectional study was conducted after obtaining ethical clearance from IIT
22 Bombay. This survey was conducted using a pretested questionnaire anonymously amongst the
23 college students and adults in Mumbai from October 2022 to December 2022. The questionnaire
24 contained details of why the vaccine was taken, and if the participant was a student. Descriptive
25 analysis was conducted and frequencies, percentages along with 95% confidence intervals were
26 used to summarize the findings.

27 **Results:** A total of 483 participants responded, which included both students and non-students, of
28 which 470 participants reported having taken the vaccine. A total of 106 (21.95%, 95% C.I. 18.48%
29 -25.85%) reported to have pressured into taking the vaccine. The level of coercion was similar
30 among college students 78 (21.61%, 95% C.I. 17.67%-26.14%) and non-student adults 28 (22.95%,
31 95% C.I. 15.82% – 31.43%).

32 **Conclusion:** A significant proportion was coerced into taking the vaccines, violating the
33 requirement for informed consent. These results are of paramount importance for future policies as
34 well as for posterity.

35 **Introduction:**

36 Informed consent is of paramount importance in medical ethics. The right to one's health and
37 bodily autonomy is guaranteed in Article-21 of the Indian constitution. Informed consent is also
38 given unequivocal importance in the international UNESCO declaration of bioethics in the article 6.
39 [1]. However, policies related to COVID-19 vaccine administration have been coercive in nature
40 around the world, including in India. Covid-19 vaccine mandates for various aspects of day-to-day
41 life were common in 2021 and early 2022. Few such examples in India are as follows, i) at
42 workplace in Tamil Nadu state [2–4], ii) for accessing public transportation in Maharashtra state
43 [5–7], iii) for accessing government services in Gujarat state [8–10], even the high court had upheld
44 the decision of covid vaccine mandate by the Ahmedabad Municipal Commissioner in this case, iv)
45 for entry into malls in Maharashtra state [6,7], v) for obtaining the ration from Public distribution
46 System in the Madhya Pradesh state [11,12], vi) to enter educational institutions like colleges in
47 Karnataka state [13,14] and vii) schools in the Chandigarh Union Territory [15].

48 On 02 May 2022, the Indian Supreme Court in the judgement of the case, “**Jacob Puliye vs**
49 **Union of India**” in paragraph 3 of the conclusion, ruled that such coercion is disproportionate and
50 violative of the Indian constitution, especially Article 21. [16,17] Further they opined that bodily
51 integrity is protected under Article 21 of the Constitution and no individual can be forced to be
52 vaccinated. [16,17] While the Hon'ble Supreme Court ruled on the unconstitutional nature of the
53 mandates, various forms of mandates and coercion continued for some time.

54 We did a cross sectional study to ascertain the extent of this coercion. This study will be an
55 important input in future policies, and also for historical record.

56 **Survey Methodology**

57 The survey sought to quantify the extent of Covid-19 vaccine coercion among students as well as
58 non-student adults. Since the survey involved personal health information, it was designed to be
59 anonymous: name or other identifying information was not collected or even asked during the
60 survey. In the student category, only college students were considered, not school students. College
61 students and adults who were willing to participate in the study were chosen as study participants.
62 In order to obtain this sensitive information and to maintain confidentiality, the data was collected
63 anonymously. After obtaining the Institutional Ethics Board approval, data collection was started.
64 15 sessions were conducted on different dates between 26th October 2022 and 19th December
65 2022 at two prominent sets of locations: within college campuses and outside. While the former
66 primarily targeted the student category, the latter primarily targeted the non-student category.
67 Within college campuses, various venues such as food court, hostel, classroom were considered.
68 Outside of college campuses, various locations like bus-stops, markets, and local train stations were
69 considered. All survey locations were in the city of Mumbai, Maharashtra, India.

70
71 The following statement of informed consent was shown to a potential survey participant.
72 ***Purpose of study:*** *Informed consent is of paramount importance. Several Covid-19 vaccine policies*
73 *have been coercive, and there is even a Supreme Court ruling (02 May 2022) that such coercion is*
74 *disproportionate and violative of the Indian constitution. This study seeks to measure the effect of*
75 *the coercive policies, as it will be an important input in future policies, and also for historical*
76 *record.*

77 *In this survey, you are asked 2 questions.*

78 *No personal information is collected or stored. The survey results will be summarized for*
79 *students and non-students separately. It may be published, to improve understanding of past*

80 *policies. Please provide your answer to the above question after reading and understanding this*
81 *consent and question form.*

82 The informed consent statement was shown in English as well as in Hindi and explained briefly
83 to a potential participant. The response was collected from those who agreed to participate in the
84 survey. The two questions asked. For simplicity, there was exactly one question of content asked in
85 the survey: *Q1 What is the PRIMARY reason you took the Covid-19 vaccine?* The participant had to
86 choose from among six choices: *A) Willingly, for own health; B) Willingly, for others' health; C)*
87 *Pressured to take, for travel; D) Pressured to take, for education or work; E) Pressured, for some*
88 *other reason; F) Not taken the vaccine.* The first two responses would be considered as willingly
89 vaccinated while the latter three would be considered as vaccine coerced for analysis.

90 Since we wanted to separate the survey results by students versus non-students, an additional
91 logistical question asked was: *Q2 Are you a college student? Yes or no as answer.*

92

93 **Sample size estimation:** To estimate an assumed proportion of 20% vaccine coercion among the
94 college students and adults, at an acceptable error of 4% with alpha error at 5% and 80% power the
95 minimum sample size required would be 385. The software used was WinPepi v11.65. However,
96 we could collect a higher number of responses: 483 responses, of which 470 participants reported
97 having taken the vaccine.

98 Data collected using both the techniques were entered into Microsoft Excel sheet and analyzed
99 using Epi Info software developed by the Centers for Disease Control and Prevention. Descriptive
100 statistics were applied. Frequency, percentages and 95% Confidence Intervals were used to
101 summarise the collected data.

102 **Institute Ethics Committee (IEC) Approval:** This survey study was approved by the Institute
103 Ethics Committee (IEC) of the Indian Institute of Technology Bombay (IITB), on 18 October 2022.
104 Approval number: IITB-IEC/2022/026.

105

106 **Results:**

107 A total of 483 valid responses could be recorded. This consisted of 361 students and 122 non-
108 student adults. Among which 13 participants did not take the vaccine. Further analysis showed that,
109 for non-student adults, 28 (22.95%, 95% C.I. 15.82% - 31.43%) [Table 1] reported that the reason
110 for taking the vaccine was pressure due to travel, education or others which was similar in college
111 students as well where 78 (21.61%, 95% C.I. 17.67% - 26.14%) [Table 2] reported the same.
112 Overall, 106 (21.95%, 95% C.I. 18.48% - 25.85%) [Table 3] reported that pressure as a reason for
113 taking the vaccine. Figure 1 and Figure 2 summarize the survey results for non-students and
114 students respectively. This clearly shows that a significant proportion of participants reported
115 pressure as a reason for taking the vaccine. A small proportion of adults did not take vaccine in non-
116 college adults, 5 (4.1%) which was lower than that among college students 8 (2.2%).

117

118 **Discussion and Conclusion**

119 A significant percentage of students as well as non-students, about 1 in 5, reported that they have
120 been coerced into taking the Covid-19 vaccine. This is significant, especially given the Supreme
121 Court ruling of the unconstitutionality of the vaccine mandates. The Government of India has
122 claimed in its affidavit in another Supreme Court case that Covid-19 vaccination is voluntary [18].
123 Although the vaccination was voluntary as per the union government, our survey finds that due to

124 various coercive policies on the ground, a large section of the population was pressured into taking
125 the Covid-19 vaccines. This has important implications for future policies, as it concerns the issue
126 of trust in public health.

127 The coercive policies for the college student population are especially significant, as data from
128 the US as well as Europe shows that this age-group had no excess deaths in 2020 or 2021, due to
129 Covid-19, a mortality rate of 0.03 per 1,00,000 in age group 0-19 years [19]. Even during the peak
130 of August 2021 to September 2022, study from US revealed that COVID mortality was 0.6 per 100
131 000 for those aged 1 to 4 years; 0.4 per 100 000 for those aged 5 to 9 years; 0.5 per 100 000 for
132 those aged 10 to 14 years; and 1.8 per 100 000 for those aged 15 to 19 years. [20]

133 The survey study has been limited in scope, and it is difficult to extrapolate the results to other
134 places such as rural regions. In other places, the level of coercion could have been lower or higher.
135 The background details of the study participants were not taken which would provide more
136 accuracy in the estimation. Qualitative studies on coercion can elaborate the understanding on
137 vaccine coercion and would generate insights into the policy makers as well as healthcare givers.
138 This observational descriptive study provides an insight into vaccine coercion and brings this into
139 light which requires further studies to fill the lacunae and establish stronger evidence.

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217 Supplementary file:

218 Contents:

219 i) **Table 1:** Responses from non-student adults

220 ii) **Table 2:** Responses from college students

221 iii) **Table 3:** Responses from total participants (students & non-students)

Survey response	Frequency	Percentage	95% confidence interval
Pressured into taking	28	22.95%	15.82% - 31.43%
Willingly taken	89	72.95%	64.16% - 80.59%
Not taken	5	4.10%	1.34% - 9.31%
Total	122	100%	

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Table 2: Responses from college students			
Survey response	Frequency	Percentage	95% confidence interval
Pressured into taking	78	21.61%	17.67% - 26.14%
Willingly taken	275	76.18%	71.52% - 80.28%
Not taken	8	2.22%	1.13% - 4.31%
Total	361	100%	

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Table 3: Responses from total participants (students & non-students)			
Survey response	Frequency	Percentage	95% confidence interval
Pressured into taking	106	21.95%	18.48% - 25.85%
Willingly taken	364	75.36%	71.33% - 79%
Not taken	13	2.69%	1.58% - 4.55%
Total	483	100%	

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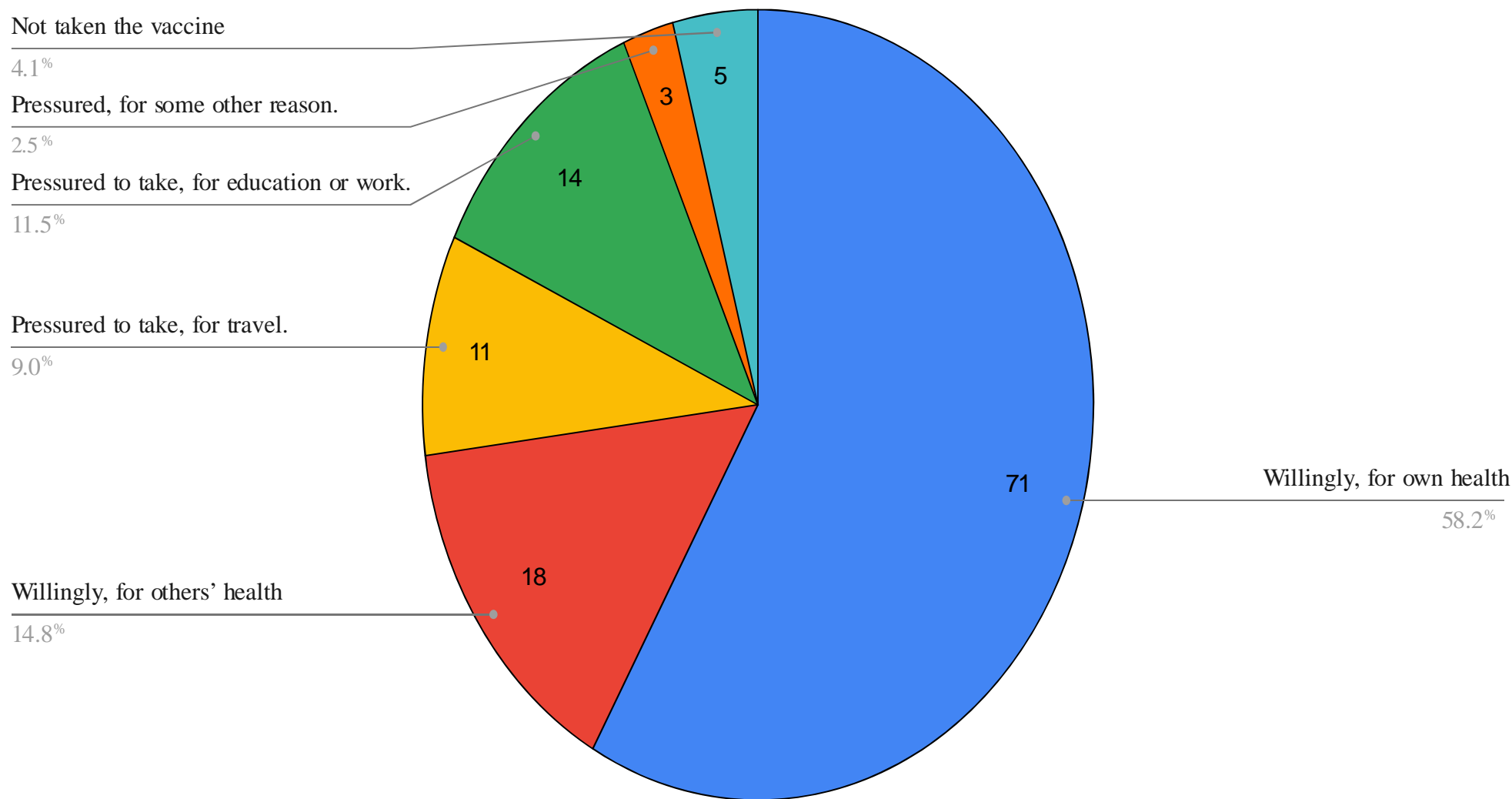


Figure 1: Pie chart of responses from non-students (total: 122)

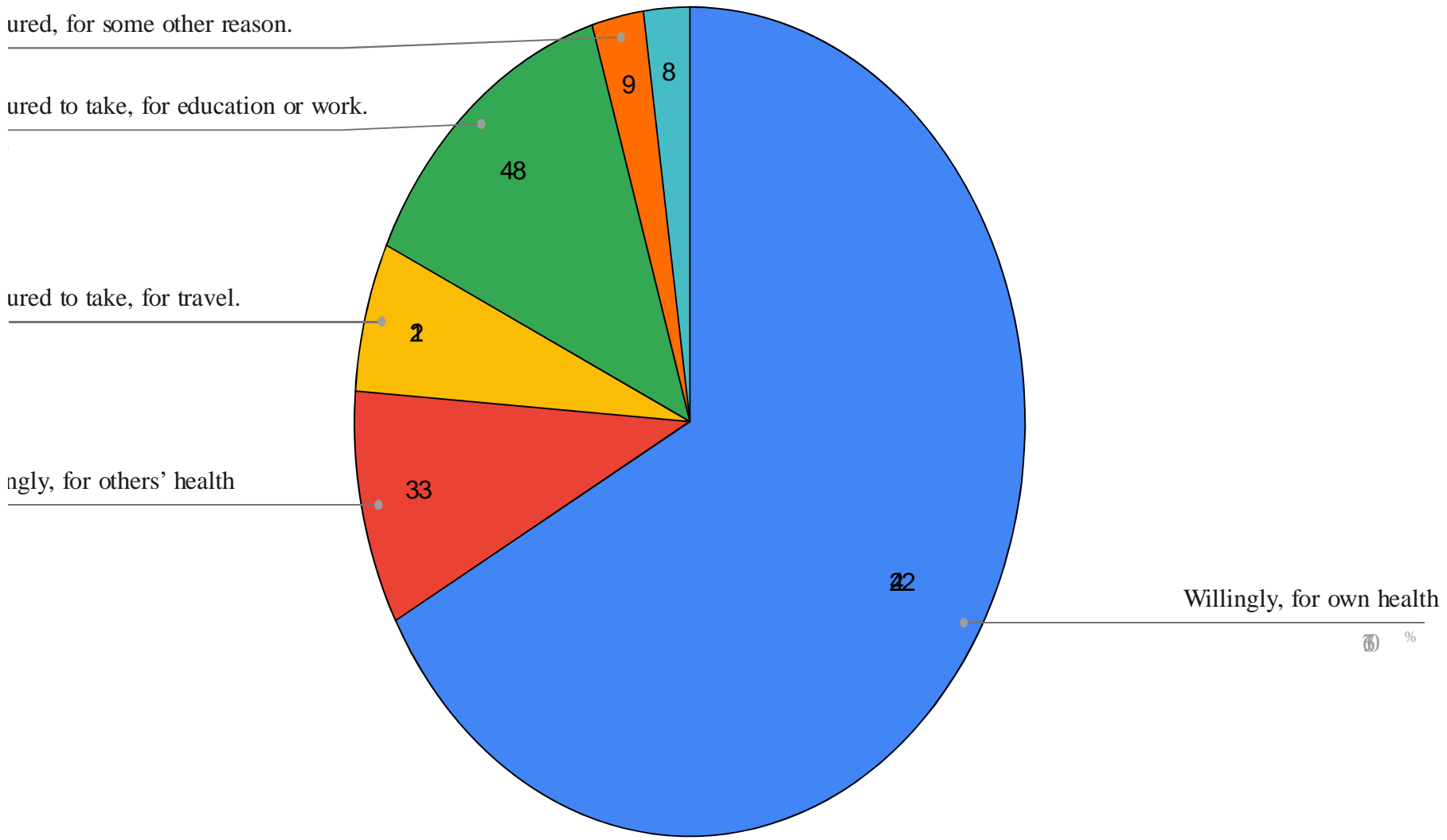


Figure 2: Pie chart of responses from students (total: 6)