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| **Supplementary table 1: The association between Perceived barriers and vaccination status.** |
|  |  |  |  |  |  |  |  |  |  |  |  |
|   | **Raw total** | **Have you ever had the flu vaccine before?** | **Have you had the flu vaccine during this year?** |
| **YES** | **NO** | **YES** | **NO** |
| N | % | N | % | N | % | N | % | N | % |
| **I am worried about the side effects of the flu vaccine** | **Strongly Agree, Agree** | 365 | 46.4% | 91 | 24.9% | 274 | 75.1% | 25 | 6.8% | 340 | 93.2% |
| **Neutral** | 176 | 22.4% | 47 | 26.7% | 129 | 73.3% | 10 | 5.7% | 166 | 94.3% |
| **Strongly Disagree, Disagree** | 245 | 31.2% | 119 | 48.6% | 126 | 51.4% | 47 | 19.2% | 198 | 80.8% |
| ***P-value*** | ***<0.001*** | ***<0.001*** |
| **I do not like vaccinations** | **Strongly Agree, Agree** | 374 | 47.6% | 78 | 20.9% | 296 | 79.1% | 18 | 4.8% | 356 | 95.2% |
| **Neutral** | 153 | 19.5% | 58 | 37.9% | 95 | 62.1% | 18 | 11.8% | 135 | 88.2% |
| **Strongly Disagree, Disagree** | 259 | 33.0% | 121 | 46.7% | 138 | 53.3% | 46 | 17.8% | 213 | 82.2% |
| ***P-value*** | ***<0.001*** | ***<0.001*** |
| **The flu vaccine might give me the flu** | **Strongly Agree, Agree** | 319 | 40.6% | 100 | 31.3% | 219 | 68.7% | 30 | 9.4% | 289 | 90.6% |
| **Neutral** | 223 | 28.4% | 62 | 27.8% | 161 | 72.2% | 20 | 9.0% | 203 | 91.0% |
| **Strongly Disagree, Disagree** | 244 | 31.0% | 95 | 38.9% | 149 | 61.1% | 32 | 13.1% | 212 | 86.9% |
| ***P-value*** | ***0.03*** | 0.253 |
| **I am worried that there may be something I do not know about the flu vaccine** | **Strongly Agree, Agree** | 407 | 51.8% | 89 | 21.9% | 318 | 78.1% | 24 | 5.9% | 383 | 94.1% |
| **Neutral** | 161 | 20.5% | 56 | 34.8% | 105 | 65.2% | 16 | 9.9% | 145 | 90.1% |
| **Strongly Disagree, Disagree** | 218 | 27.7% | 112 | 51.4% | 106 | 48.6% | 42 | 19.3% | 176 | 80.7% |
| ***P-value*** | ***<0.001*** | ***<0.001*** |
| **Someone I know had a bad experience with the flu vaccine** | **Strongly Agree, Agree** | 143 | 18.2% | 60 | 42.0% | 83 | 58.0% | 20 | 14.0% | 123 | 86.0% |
| **Neutral** | 135 | 17.2% | 32 | 23.7% | 103 | 76.3% | 10 | 7.4% | 125 | 92.6% |
| **Strongly Disagree, Disagree** | 508 | 64.6% | 165 | 32.5% | 343 | 67.5% | 52 | 10.2% | 456 | 89.8% |
| ***P-value*** | ***0.005*** | 0.194 |
| **I was not encouraged by family members, friends, or co-workers**  | **Strongly Agree, Agree** | 190 | 24.2% | 57 | 30.0% | 133 | 70.0% | 17 | 8.9% | 173 | 91.1% |
| **Neutral** | 181 | 23.0% | 38 | 21.0% | 143 | 79.0% | 11 | 6.1% | 170 | 93.9% |
| **Strongly Disagree, Disagree** | 415 | 52.8% | 162 | 39.0% | 253 | 61.0% | 54 | 13.0% | 361 | 87.0% |
| ***P-value*** | ***<0.001*** | ***0.029*** |
| **I am afraid/do not like needles, so I do not get the flu vaccine** | **Strongly Agree, Agree** | 181 | 23.0% | 34 | 18.8% | 147 | 81.2% | 13 | 7.2% | 168 | 92.8% |
| **Neutral** | 134 | 17.0% | 27 | 20.1% | 107 | 79.9% | 9 | 6.7% | 125 | 93.3% |
| **Strongly Disagree, Disagree** | 471 | 59.9% | 196 | 41.6% | 275 | 58.4% | 60 | 12.7% | 411 | 87.3% |
| ***P-value*** | ***<0.001*** | ***0.035*** |
| **It is difficult to arrange an appointment or to go to the clinic** | **Strongly Agree, Agree** | 208 | 26.5% | 59 | 28.4% | 149 | 71.6% | 17 | 8.2% | 191 | 91.8% |
| **Neutral** | 146 | 18.6% | 33 | 22.6% | 113 | 77.4% | 8 | 5.5% | 138 | 94.5% |
| **Strongly Disagree, Disagree** | 432 | 55.0% | 165 | 38.2% | 267 | 61.8% | 57 | 13.2% | 375 | 86.8% |
| ***P-value*** | ***0.001*** | ***0.014*** |
| **I do not have time to get the flu vaccine** | **Strongly Agree, Agree** | 146 | 18.6% | 39 | 26.7% | 107 | 73.3% | 11 | 7.5% | 135 | 92.5% |
| **Neutral** | 140 | 17.8% | 35 | 25.0% | 105 | 75.0% | 7 | 5.0% | 133 | 95.0% |
| **Strongly Disagree, Disagree** | 500 | 63.6% | 183 | 36.6% | 317 | 63.4% | 64 | 12.8% | 436 | 87.2% |
| ***P-value*** | ***0.008*** | ***0.013*** |
| **The flu vaccine is expensive** | **Strongly Agree, Agree** | 230 | 29.3% | 79 | 34.3% | 151 | 65.7% | 26 | 11.3% | 204 | 88.7% |
| **Neutral** | 311 | 39.6% | 76 | 24.4% | 235 | 75.6% | 23 | 7.4% | 288 | 92.6% |
| **Strongly Disagree, Disagree** | 245 | 31.2% | 102 | 41.6% | 143 | 58.4% | 33 | 13.5% | 212 | 86.5% |
| ***P-value*** | ***<0.001*** | 0.059 |
| **The flu vaccine is not covered in the health insurance** | **Strongly Agree, Agree** | 343 | 43.6% | 119 | 34.7% | 224 | 65.3% | 33 | 9.6% | 310 | 90.4% |
| **Neutral** | 279 | 35.5% | 64 | 22.9% | 215 | 77.1% | 22 | 7.9% | 257 | 92.1% |
| **Strongly Disagree, Disagree** | 164 | 20.9% | 74 | 45.1% | 90 | 54.9% | 27 | 16.5% | 137 | 83.5% |
| ***P-value*** | ***<0.001*** | ***0.014*** |
| **Flu vaccine is not available** | **Strongly Agree, Agree** | 146 | 18.6% | 58 | 39.7% | 88 | 60.3% | 17 | 11.6% | 129 | 88.4% |
| **Neutral** | 283 | 36.0% | 58 | 20.5% | 225 | 79.5% | 19 | 6.7% | 264 | 93.3% |
| **Strongly Disagree, Disagree** | 357 | 45.4% | 141 | 39.5% | 216 | 60.5% | 46 | 12.9% | 311 | 87.1% |
| ***P-value*** | ***<0.001*** | ***0.035*** |
| **Flu vaccine might be dangerous for patients** | **Strongly Agree, Agree** | 202 | 25.7% | 39 | 19.3% | 163 | 80.7% | 12 | 5.9% | 190 | 94.1% |
| **Neutral** | 299 | 38.0% | 86 | 28.8% | 213 | 71.2% | 20 | 6.7% | 279 | 93.3% |
| **Strongly Disagree, Disagree** | 285 | 36.3% | 132 | 46.3% | 153 | 53.7% | 50 | 17.5% | 235 | 82.5% |
| ***P-value*** | ***<0.001*** | ***<0.001*** |
| **I am against taking flu vaccine** | **Strongly agree, agree** | 144 | 18.3% | 24 | 16.7% | 120 | 83.3% | 12 | 8.3% | 132 | 91.7% |
| **Neutral** | 210 | 26.7% | 40 | 19.0% | 170 | 81.0% | 9 | 4.3% | 201 | 95.7% |
| **Strongly disagree, disagree** | 432 | 55.0% | 193 | 44.7% | 239 | 55.3% | 61 | 14.1% | 371 | 85.9% |
| ***P-value*** | ***<0.001*** | ***<0.001*** |
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|  |  |  |  |  |  |  |  |  |  |  |  |
| **Supplementary Table 2:** **The association between Perceived cues to action and vaccination status.** |
|  |  |  |  |  |  |  |  |  |  |  |  |
|   | **Raw total** | **Have you ever had the flu vaccine before?** | **Have you had the flu vaccine during this year?** |
| **YES** | **NO** | **YES** | **NO** |
| N | % | N | % | N | % | N | % | N | % |
| **Recommendation of my doctor/ nurse/ pharmacist is important for making the right decision to take the vaccine** | Strongly agree, agree | 601 | 76.5% | 219 | 36.4% | 382 | 63.6% | 75 | 12.5% | 526 | 87.5% |
| Neutral | 103 | 13.1% | 22 | 21.4% | 81 | 78.6% | 4 | 3.9% | 99 | 96.1% |
| Strongly disagree, disagree | 82 | 10.4% | 16 | 19.5% | 66 | 80.5% | 3 | 3.7% | 79 | 96.3% |
| ***P-value*** | ***<0.001*** | ***0.003*** |
| **I trust the guidelines that recommend that all high-risk groups should get the flu vaccine.** | Strongly agree, agree | 544 | 69.2% | 212 | 39.0% | 332 | 61.0% | 74 | 13.6% | 470 | 86.4% |
| Neutral | 149 | 19.0% | 29 | 19.5% | 120 | 80.5% | 5 | 3.4% | 144 | 96.6% |
| Strongly disagree, disagree | 93 | 11.8% | 16 | 17.2% | 77 | 82.8% | 3 | 3.2% | 90 | 96.8% |
| ***P-value*** | ***<0.001*** | ***<0.001*** |
| **I feel I have received all the information I need to decide if I should get the flu vaccine** | Strongly agree, agree | 443 | 56.4% | 195 | 44.0% | 248 | 56.0% | 66 | 14.9% | 377 | 85.1% |
| Neutral | 147 | 18.7% | 28 | 19.0% | 119 | 81.0% | 6 | 4.1% | 141 | 95.9% |
| Strongly disagree, disagree | 196 | 24.9% | 34 | 17.3% | 162 | 82.7% | 10 | 5.1% | 186 | 94.9% |
| ***P-value*** | ***<0.001*** | ***<0.001*** |
| **If the flu vaccine is available for free, I'll take it** | strongly agree, agree | 385 | 49.0% | 179 | 46.5% | 206 | 53.5% | 58 | 15.1% | 327 | 84.9% |
| Neutral | 221 | 28.1% | 54 | 24.4% | 167 | 75.6% | 17 | 7.7% | 204 | 92.3% |
| Strongly disagree, disagree | 180 | 22.9% | 24 | 13.3% | 156 | 86.7% | 7 | 3.9% | 173 | 96.1% |
| ***P-value*** | ***<0.001*** | ***<0.001*** |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Supplementary Table 3: Participants' responses to other factors that may predict vaccination rate.** |
|  |  |  |  |  |  |  |  |  |  |  |  |
|   | **Raw total** | **Have you ever had the flu vaccine before?** | **Have you had the flu vaccine during this year?** |
| YES | NO | YES | NO |
| N | % | N | % | N | % | N | % | N | % |
| **Have you ever received advice from a doctor about taking the flu vaccine?** | Yes | 377 | 48.0% | 183 | 48.5% | 194 | 51.5% | 66 | 17.5% | 311 | 82.5% |
| No | 409 | 52.0% | 74 | 18.1% | 335 | 81.9% | 16 | 3.9% | 393 | 96.1% |
| ***P-value*** | ***<0.001*** | ***<0.001*** |
| **Have you ever received advice from a nurse about taking the flu vaccine?** | Yes | 194 | 24.7% | 106 | 54.6% | 88 | 45.4% | 44 | 22.7% | 150 | 77.3% |
| No | 592 | 75.3% | 151 | 25.5% | 441 | 74.5% | 38 | 6.4% | 554 | 93.6% |
| ***P-value*** | ***<0.001*** | ***<0.001*** |
| **Have you ever received advice from a pharmacist about taking the flu vaccine?** | Yes | 275 | 35.0% | 148 | 53.8% | 127 | 46.2% | 51 | 18.5% | 224 | 81.5% |
| No | 511 | 65.0% | 109 | 21.3% | 402 | 78.7% | 31 | 6.1% | 480 | 93.9% |
| ***P-value*** | ***<0.001*** | ***<0.001*** |
| **Have you received advice from anyone (****friend,relative,colleague) about taking the flu vaccine?** | Yes | 434 | 55.2% | 190 | 43.8% | 244 | 56.2% | 66 | 15.2% | 368 | 84.8% |
| No | 352 | 44.8% | 67 | 19.0% | 285 | 81.0% | 16 | 4.5% | 336 | 95.5% |
| ***P-value*** | ***<0.001*** | ***<0.001*** |
| **Has anyone or a source influenced you not to get the flu vaccine?** | Yes | 154 | 19.6% | 49 | 31.8% | 105 | 68.2% | 21 | 13.6% | 133 | 86.4% |
| No | 632 | 80.4% | 208 | 32.9% | 424 | 67.1% | 61 | 9.7% | 571 | 90.3% |
| ***P-value*** | 0.795 | 0.147 |
| **Do you know of anyone who has had severe side effects (life-threatening such as liver/kidney failure/arrhythmia) from the flu vaccine?** | Yes | 76 | 9.7% | 40 | 52.6% | 36 | 47.4% | 16 | 21.1% | 60 | 78.9% |
| No | 710 | 90.3% | 217 | 30.6% | 493 | 69.4% | 66 | 9.3% | 644 | 90.7% |
| ***P-value*** | ***<0.001*** | ***0.001*** |
| **Do you know anyone who has had moderate side effects (led to hospitalization) from the flu vaccine** | Yes | 121 | 15.4% | 59 | 48.8% | 62 | 51.2% | 21 | 17.4% | 100 | 82.6% |
| No | 665 | 84.6% | 198 | 29.8% | 467 | 70.2% | 61 | 9.2% | 604 | 90.8% |
| ***P-value*** | ***<0.001*** | ***0.007*** |
| **Do you know anyone who has had mild side effects from the flu vaccine?** | Yes | 309 | 39.3% | 144 | 46.6% | 165 | 53.4% | 53 | 17.2% | 256 | 82.8% |
| No | 477 | 60.7% | 113 | 23.7% | 364 | 76.3% | 29 | 6.1% | 448 | 93.9% |
| ***P-value*** | ***<0.001*** | ***<0.001*** |
| **Do you have** **enough information about the safety and side effects of the flu vaccine?** | Yes | 289 | 36.8% | 152 | 52.6% | 137 | 47.4% | 59 | 20.4% | 230 | 79.6% |
| No | 497 | 63.2% | 105 | 21.1% | 392 | 78.9% | 23 | 4.6% | 474 | 95.4% |
| ***P-value*** | ***<0.001*** | ***<0.001*** |