

Article title: Understanding the prevalence and associated factors of behavioral intention of COVID-19 vaccination under specific scenarios combining effectiveness, safety, and cost in the Hong Kong Chinese general population

Supplementary file 1: Supplementary tables of “Understanding the prevalence and associated factors of behavioral intention of COVID-19 vaccination under specific scenarios combining effectiveness, safety, and cost in the Hong Kong Chinese general population”

Table S1. Prevalence of intention of taking up free COVID-19 vaccination (likely/definitely yes) given the vaccines were manufactured in a specific country

| Country of manufacture | All % | Sex | | Age groups | | |
|--------------------------|----------|--------------------------|--|-------------------------|--|---|
| | | Female % ORc (Ref) | Male % ORc (95% CI) | 18-35 % ORc (Ref) | 36-65 % ORc (95% CI) | >65 % ORc (95% CI) |
| Japan | 55.8 | 54.8 Ref=1.0 | 57.9 1.13 (0.76-1.69) | 46.0 Ref=1.0 | 56.4 1.52 (0.87-2.64) | 59.0 1.69 ^a (0.93-3.07) |
| The United States/Europe | 52.0 | 51.3 Ref=1.0 | 53.6 1.10 (0.74-1.64) | 42.9 Ref=1.0 | 49.8 1.32 (0.76-2.31) | 59.7 1.98 ^b (1.09-3.60) |
| Mainland China | 31.1 | 29.7 Ref=1.0 | 34.3 1.24 (0.81-1.89) | 9.5 Ref=1.0 | 26.3 3.40 ^c (1.40-8.26) | 48.6 8.99 ^d (3.65-22.16) |
| Russia | 32.2 | 28.4 Ref=1.0 | 40.7 1.73 ^b (1.14-2.63) | 19.0 Ref=1.0 | 24.7 1.39 (0.70-2.79) | 50.7 4.37 ^d (2.15-8.88) |
| Other countries | 27.8 | 25.5 Ref=1.0 | 32.9 1.43 (0.93-2.21) | 15.9 Ref=1.0 | 20.2 1.34 (0.64-2.82) | 45.8 4.49 ^d (2.12-9.50) |

Note. COVID-19: coronavirus disease 2019; ORc: crude odds ratio; Ref: reference group; a, .05<P<.10; b, P<.05; c, P<.01; d, P<.001.

Table S2. Levels of vaccine-related attributes influencing whether taking up COVID-19 vaccination by sex and age

| Variables | All Mean (SD) | Sex | | <i>P</i> (t-test) | Age groups | | | <i>P</i> (ANOVA) |
|--|------------------|---------------------|-------------------|-------------------|--------------------|--------------------|------------------|------------------|
| | | Female Mean (SD) | Male Mean (SD) | | 18-35 Mean (SD) | 36-65 Mean (SD) | >65 Mean (SD) | |
| 1) Side effect | 8.3 (1.8) | 8.4 (1.7) | 8.2 (1.9) | .175 | 8.3 (1.6) | 8.6 (1.4) | 7.9 (2.2) | .001 |
| 2) Effectiveness | 8.2(1.8) | 8.22 (1.8) | 8.24 (2.0) | .930 | 8.3 (1.5) | 8.4 (1.5) | 7.9 (2.3) | .035 |
| 3) Report on severe side effect | 8.1 (1.9) | 8.1 (1.8) | 8.0 (2.2) | .629 | 8.3 (1.6) | 8.1 (1.8) | 7.9 (2.2) | .297 |
| 4) Duration of protectiveness against COVID-19 | 7.0 (2.3) | 6.6 (2.6) | 6.9 (2.4) | .055 | 6.9 (2.1) | 7.0 (2.3) | 6.6 (2.7) | .264 |
| 5) Expert recommendation | 6.73(1.9) | 6.8 (2.0) | 6.7 (2.0) | .370 | 6.9 (2.1) | 6.9 (1.9) | 6.6 (2.2) | .233 |
| 6) Cost | 6.72(2.0) | 6.8 (2.0) | 6.6 (2.2) | .412 | 6.3 (2.1) | 6.7 (1.7) | 6.9 (2.4) | .144 |
| 7) Manufacturer | 6.71(2.5) | 6.8 (2.5) | 6.5 (2.7) | .340 | 7.6 (2.0) | 7.1 (2.3) | 5.7 (2.8) | <.001 |
| 7) Support from family members | 6.71 (2.4) | 6.9 (2.3) | 6.3 (2.6) | .007 | 6.5 (2.2) | 6.6 (2.3) | 7.0 (2.6) | .136 |
| 9) Convenience | 6.1 (2.3) | 6.2 (2.2) | 5.9 (2.3) | .229 | 6.1 (2.2) | 6.1 (2.1) | 6.2 (2.5) | .925 |
| 10) Evaluation from social media | 5.7 (2.3) | 5.8 (2.3) | 5.5 (2.2) | .195 | 6.2 (2.0) | 5.7 (2.3) | 5.4 (2.4) | .064 |

Table S3. Background factors of behavioral intention of COVID-19 vaccination under various scenarios

| | S1: 80% + Rare MSE + Free (Likely/definitely yes) | S2: 80% + Rare MSE + HKD500 (Likely/definitely yes) | S3: 80% + Common MSE + Free (Likely/definitely yes) | S4: 80% + Common MSE + HKD500 (Likely/definitely yes) | S5: 50% + Rare MSE + Free (Likely/definitely yes) | S7: 50% + Common MSE + Free (Likely/definitely yes) | S9: 80% + Rare severe SE + Free (Likely/definitely yes) |
|---------------------------------|---|---|---|---|---|---|---|
| Variables | ORc (95% CI) | ORc (95% CI) | ORc (95% CI) | ORc (95% CI) | ORc (95% CI) | ORc (95% CI) | ORc (95% CI) |
| Educational level | | | | | | | |
| < College | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 |
| ≥ College | 0.54 (0.35-0.84) ^c | 0.73 (0.43-1.25) | 0.54 (0.32-0.90) ^b | 0.88 (0.47-1.65) | 0.96 (0.51-1.83) | 0.84 (0.41-1.74) | 0.70 (0.37-1.33) |
| Missing data | NA | NA | NA | NA | NA | NA | NA |
| Current marital status | | | | | | | |
| Married | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 |
| Single | 0.50 (0.30-0.85) ^b | 0.55 (0.28-1.06) ^a | 0.54 (0.29-1.00) ^a | 0.75 (0.35-1.61) | 0.77 (0.34-1.71) | 0.72 (0.29-1.79) | 0.54 (0.23-1.24) |
| Else | 1.66 (0.87-3.17) | 0.73 (0.31-1.72) | 1.67 (0.84-3.29) | 0.93 (0.35-2.51) | 1.61 (0.66-3.89) | 1.71 (0.67-4.42) | 1.53 (0.67-3.54) |
| Having children under 18 | | | | | | | |
| No | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 |
| Yes | 0.55 (0.29-1.04) ^a | 0.72 (0.32-1.58) | 0.53 (0.24-1.16) | 0.57 (0.20-1.64) | 0.45 (0.13-1.49) | 0.18 (0.02-1.31) ^a | 0.38 (0.12-1.27) |
| Employment status | | | | | | | |
| Full-time | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 |
| Retired | 2.54 (1.57-4.14) ^d | 1.26 (0.71-2.24) | 2.43 (1.42-4.16) ^b | 1.29 (0.66-2.51) | 3.19(1.52-6.71) ^c | 3.88 (1.68-8.95) ^c | 1.32 (0.62-2.82) |
| Housewives | 1.70 (1.02-2.83) ^b | 1.24 (0.68-2.26) | 1.37 (0.75-2.47) | 0.82 (0.38-1.77) | 0.71 (0.25-1.98) | 0.65 (0.19-2.22) | 2.34 (1.14-4.81) ^b |
| Else | 1.25 (0.60-2.58) | 0.46 (0.15-1.40) | 0.59 (0.21-1.64) | 0.35 (0.08-1.55) | 2.11 (0.73-6.08) | 1.87 (0.54-6.54) | 1.32 (0.45-3.88) |
| Chronic disease status | | | | | | | |
| No | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 |
| Yes | 3.15(2.09-4.75) ^d | 1.80 (1.11-2.91) ^b | 3.12(1.99-4.88) ^d | 2.29(1.29-4.07) ^c | 3.00(1.65-5.45) ^d | 3.11(1.61-6.03) ^c | 1.46 (0.83-2.59) |
| Don't know | NA | NA | NA | NA | NA | NA | NA |

Note. ORc, crude odds ratio; Ref, reference group; DV, dependent variable; NA, not applicable; MSE, mild side effect; SE, side effect; a, $.05 < P < .10$; b, $P < .05$; c, $P < .01$; d, $P < .001$.

Table S4. Adjusted analysis for factors 4 of behavioral intentions of COVID-19 vaccination under various scenarios

| | S1: 80% + Rare MSE + Free (Likely /definitely yes) | S2: 80% + Rare MSE + HKD500 (Likely /definitely yes) | S3: 80% + Common MSE + Free (Likely /definitely yes) | S4: 80% + Common MSE + HKD500 (Likely /definitely yes) | S5: 50% + Rare MSE + Free (Likely /definitely yes) | S7: 50% + Common MSE + Free (Likely /definitely yes) | S9: 80% + Rare severe SE + Free (Likely /definitely yes) |
|---|---|---|---|---|---|---|---|
| Variables | ORc (95% CI) | ORc (95% CI) | ORc (95% CI) | ORc (95% CI) | ORc (95% CI) | ORc (95% CI) | ORc (95% CI) |
| External factors of BICV | | | | | | | |
| 1. Overall trust toward government | | | | | | | |
| Very strong | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 |
| Neutral | 3.99(1.99-7.99) ^d | 2.42 (1.09-5.40) ^b | 3.54 (1.53-8.17) ^c | 3.34 (1.29-8.67) ^b | 3.41(1.06-10.98) ^b | 4.75(1.27-17.82) ^b | 2.23 (0.84-5.92) |
| Trust/very strong trust | 8.22(4.12-16.41) ^d | 3.34 (1.53-7.30) ^c | 6.15(2.69-14.03) ^d | 2.26 (0.85-5.97) | 5.31(1.67-16.83) ^c | 4.76(1.24-18.31) ^b | 2.51(0.96-6.55) ^a |
| Don't know | 4.17 (0.87-19.99) ^a | 4.20 (0.71-24.82) | 1.51 (0.16-14.42) | NA | 9.93 (1.27-77.33) ^b | 4.79 (0.36-62.91) | 1.88 (0.19-19.17) |
| 2. Trust toward governmental | | | | | | | |
| Very strong | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 |
| Neutral | 2.73 (1.40-5.33) ^c | 1.14 (0.50-2.59) | 2.20 (0.96-5.06) ^a | 1.72 (0.65-4.58) | 1.09 (0.36-3.32) | 1.38 (0.38-4.96) | 1.26 (0.48-3.33) |
| Trust/very strong trust | 7.39(3.74-14.61) ^d | 3.63 (1.67-7.87) ^c | 6.52(2.86-14.85) ^d | 2.54 (0.97-6.64) ^a | 3.64 (1.28-10.34) ^b | 3.88(1.15-13.16) ^b | 2.31 (0.91-5.86) ^a |
| 3. Overall satisfaction with government | | | | | | | |
| Very strong | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 |
| Neutral | 4.22(2.16-8.25) ^d | 2.28 (1.05-4.96) ^b | 4.03 (1.74-9.33) ^c | 3.41 (1.29-9.00) ^b | 2.36 (0.78-7.12) | 4.02(1.08-14.89) ^b | 2.79 (1.04-7.49) ^b |
| Satisfaction/very strong | 8.97(4.41-18.24) ^d | 3.88 (1.73-8.68) ^c | 7.72(3.23-18.41) ^d | 3.03 (1.07-8.55) ^b | 5.43(1.73-17.04) ^c | 5.84(1.45-23.48) ^b | 3.12 (1.12-8.66) ^b |
| Don't know | 3.54 (0.58-21.60) | 2.27 (0.23-22.36) | 2.16 (0.21-21.81) | NA | 4.81 (0.39-58.71) | 6.12 (0.43-86.38) | 2.67 (0.24-29.10) |
| 4. Frequency of exposure to positive social media | | | | | | | |
| Extremely/quite infrequent | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 |
| Average | 0.96 (0.58-1.57) | 1.48 (0.77-2.82) | 0.99 (0.55-1.80) | 0.63 (0.29-1.39) | 1.34 (0.56-3.19) | 1.89 (0.70-5.11) | 1.82 (0.73-4.52) |
| Extremely/quite frequent | 3.02(1.69-5.39) ^d | 3.67(1.83-7.35) ^d | 3.85 (2.02-7.33) ^d | 2.74 (1.28-5.88) | 4.39(1.82-10.62) ^c | 4.89(1.76-13.59) ^c | 7.61(3.05-18.96) ^d |
| Don't know | NA | NA | NA | NA | NA | NA | NA |

Internal factors of BICV

1.Descriptive norms

| | | | | | | | |
|--|------------------------------|------------------------------|-------------------------------|------------------------------|-------------------------------|------------------------------|------------------------------|
| Perceived level of vaccination among Hong Kong citizens ^c | 1.34(1.18-1.53) ^d | 1.48(1.27-1.73) ^d | 1.39 (1.20-1.61) ^d | 1.53(1.28-1.84) ^d | 1.24 (1.03-1.50) ^b | 1.33(1.08-1.64) ^c | 1.34(1.13-1.58) ^c |
|--|------------------------------|------------------------------|-------------------------------|------------------------------|-------------------------------|------------------------------|------------------------------|

| | | | | | | | |
|---|------------------------------|-------------------------------|-------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| Perceived level of vaccination among acquaintances ^c | 1.48(1.32-1.66) ^d | 1.32 (1.18-1.47) ^d | 1.30 (1.17-1.45) ^d | 1.28(1.12-1.45) ^d | 1.41(1.22-1.62) ^d | 1.47(1.25-1.72) ^d | 1.26(1.10-1.43) ^c |
|---|------------------------------|-------------------------------|-------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|

2.Perceived impact of COVID-19 vaccine on controlling COVID-19 in Hong Kong

| | | | | | | | |
|----------------------|-------------------------------|--------------------------------|-------------------------------|--------------------------------|--------------------------------|-------------------|------------------|
| Very low/quite low | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 |
| Moderate | 0.97 (0.41-2.32) | 1.13 (0.30-4.22) | 1.05 (0.35-3.09) | 1.22 (0.25-5.96) | 1.31 (0.26-6.55) | 1.22 (0.24-6.23) | 1.32 (0.41-4.22) |
| Quite high/very high | 3.56 (1.54-8.20) ^c | 4.42 (1.27-15.38) ^b | 3.43 (1.24-9.51) ^b | 3.79 (0.85-17.01) ^a | 4.28 (0.94-19.43) ^a | 3.03 (0.66-13.95) | 0.82 (0.26-2.61) |
| Don't know | 0.72(0.07-7.18) | NA | 1.46 (0.14-15.66) | NA | NA | NA | NA |

3.Perceived duration of protectiveness of the COVID-19 vaccine

| | | | | | | | |
|------------|------------------------------|-------------------------------|-------------------------------|------------------------------|-------------------------------|------------------|------------------------------|
| < 1 year | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 |
| ≥ 1 year | 2.65(1.58-4.45) ^d | 2.11 (1.15-3.87) ^b | 6.28(3.21-12.27) ^d | 4.09(1.74-9.61) ^c | 2.32 (1.05-5.14) ^b | 2.60(1.06-6.36)* | 1.77 (0.89-3.51) |
| Don't know | 0.80 (0.47-1.36) | 0.83 (0.43-1.59) | 1.99 (1.00-3.95) ^a | 1.87 (0.76-4.60) | 1.03 (0.44-2.40) | 1.05 (0.41-2.72) | 0.43(0.18-1.00) ^a |

4.Perceived risk

| | | | | | | | |
|----------------|------------------|------------------|-------------------------------|-------------------------------|-------------------------------|------------------|-------------------------------|
| Low/very low | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 |
| Moderate | 1.38 (0.88-2.17) | 0.88 (0.51-1.50) | 1.04 (0.63-1.72) | 0.71 (0.37-1.38) | 1.90 (0.98-3.70) ^a | 1.55 (0.75-3.22) | 1.38 (0.75-2.54) |
| High/very high | 0.60 (0.29-1.21) | 0.50 (0.20-1.24) | 0.25 (0.10-0.61) ^c | 0.15 (0.03-0.68) ^b | NA | NA | 0.22 (0.05-0.99) ^b |

| | | | | | | | |
|-----------------------------------|-------------------------------|------------------------------|-------------------------------|-------------------------------|-------------------------------|------------------------------|------------------------------|
| 5. Life satisfaction ^c | 1.43 (1.15-1.78) ^c | 1.58(1.20-2.08) ^c | 1.50 (1.16-1.94) ^c | 1.48 (1.07-2.06) ^b | 1.88 (1.24-2.85) ^c | 1.90(1.20-3.00) ^c | 1.35(1.00-1.83) ^a |
|-----------------------------------|-------------------------------|------------------------------|-------------------------------|-------------------------------|-------------------------------|------------------------------|------------------------------|

6.Influenza vaccination in the past 12 months

| | | | | | | | |
|------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|------------------------------|------------------------------|
| No | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 | Ref=1.0 |
| Yes | 2.11 (1.29-3.45) ^c | 1.86 (1.04-3.33) ^b | 2.27 (1.34-3.83) ^c | 2.20 (1.11-4.37) ^b | 3.00 (1.50-5.99) ^c | 2.77(1.29-5.91) ^c | 2.56(1.30-5.04) ^c |
| Don't know | NA | NA | NA | NA | NA | NA | NA |

Note. ORa, adjusted odds ratio (the models were adjusted for sex, age, educational level, current marital status, having children under 18, employment status, and chronic disease status); Ref, reference group; DV, dependent variable; NA, not applicable; MSE, mild side effect; SE, side effect. a, $.05 < P < .10$; b, $P < .05$; c, $P < .01$; d, $P < .001$; e, those who answered “don’t know” and refused to answer were excluded from the analysis.