Title: Why are older adults and individuals with underlying chronic diseases in Germany not vaccinated against flu? A population-based study

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Author's response to reviews: see over
Point-by-point answers to the reviewers’ comments

Reviewer: Roshni Joshi

1. *Re-draft of the text. Major language revision is required before submission*
   - As recommended, the revised version of the manuscript has been edited by a native-English speaker.

2. *Methods: recruiting participants from those who answer their mobile phone introduces selection bias to the participant population. Depending on the time and day of phone calls will consequent in particular groups of people included in study*
   - To prevent selection bias, telephone interviews (landline or mobile) were conducted at different times: Calls took place on Mondays through Fridays from 9:30 a.m. to 2:30 p.m. and from 3:00 p.m. to 8:00 p.m., and Saturdays from 10:00 a.m. to 3:00 p.m. If the number dialed gave a busy signal or rang but was unanswered, up to 10 further attempts were made to call the number. The management of the telephone calls and call-backs was automatically regulated by the computer-assisted telephone interviewing software Voxco CC3 (10.3, Montreal, Canada). We have included this information in the revised manuscript (page 5, lines 20–25).

3. *During model building for statistical analysis; are sex, age and education status included as a priori? As including it in only the final model will bias the statistical outcomes and findings.*
   - Thank you for this comment. As these variables (sex, age, and education status) were important they were included a priori. We have clarified this on page 8, lines 21–23.

4. *There are many errors of language through the text, mainly grammatical. For example, the structure of the methods section from lines 18-21 need to be checked.*
   - As recommended, the manuscript has been edited by a native-English speaker. The revised manuscript has also been shortened.
Reviewer: Vassiliki Papaevangelou

1. This is an interesting study discussing influenza vaccination among elderly and high risk patients. It is well designed and presented.

- We thank the reviewer for this comment.

2. My major problem is that authors do not clearly enough explain what they did with elderly high risk patients. In page 6, lines 24-25 until page 7, lines1-2, they state that this group was included in the high risk group. However, when they performed univariate and multivariate analysis (page 7, lines 12-15) they had only two groups i.e. >60 yo and high risk 18-60yo. Therefore, one may conclude that in this analysis older high risk were considered just >60yo. Please explain.

- Thank you for this comment. In Germany, seasonal influenza vaccination is recommended for people ≥60 years of age as standard vaccination and for people with underlying chronic diseases as indication vaccination. To increase influenza vaccination uptake in the target groups, an annual national information campaign is run in Germany. We were especially interested in differences between these two vaccination target groups in terms of vaccination coverage rates and factors associated with vaccination uptake, which could be used to tailor the vaccination campaign and to monitor vaccination coverage. For this purpose we stratified the study population into two sub-groups. Group 1 consisted of people aged 18–59 years with underlying chronic diseases (representing people getting the flu shot as indication vaccination). Group 2 comprised people aged ≥60 years, irrespective of whether they had an underlying chronic disease (representing people getting the flu shot as standard vaccination). With regard to (i) reasons for not being immunized, (ii) information seeking behavior and (iii) influenza- and influenza vaccination-related attitudes and knowledge, we were interested in the general results for people ≥60 years of age and/or those suffering from underlying chronic diseases (at-risk people). We have included this information in the revised manuscript (page 8, lines 11–17).

3. I strongly disagree with the discussion paragraph, page 15, lines 15-25. I believe that physicians treated chronically ill patients more than any other doctors need to annually
repeat and emphasize the need for influenza vaccination. This is actually in agreement with your finding that a proportion of interviewees did not know that annual vaccination is needed. Please rephrase.

- We thank the reviewer for this comment, and agree that the wording was confusing. To resolve this we have shortened and clarified the relevant section (page 17/18, lines 24–8).

4. I think that the manuscript overall could be shortened and I would suggest some editing by Native English speaker. For example in page 14, line 12, the “for example” could be omitted.

- As recommended, the manuscript has been edited by a native-English speaker. We have also shortened the manuscript.