

Variations in Covid-19 vaccination uptake among people in receipt of psychotropic drugs: cross-sectional analysis of a national population-based prospective cohort

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The UK's Joint Committee on Vaccinations and Immunisation identified people with mental health conditions as a priority group for Covid-19 vaccinations. These groups of people often have a higher risk of being infected with Covid-19 and have higher rates of Covid-19-related hospitalisation and death, compared to the wider population. Globally, there have been mixed reports on how many people with mental health conditions are vaccinated. Northern Ireland (NI) has both the highest rates of mental health conditions, and the lowest uptake of Covid-19 vaccinations, of all UK nations. We therefore wanted to see if there was a link between people in NI receiving psychotropic drugs, as an indicator of mental health conditions, and their likelihood of receiving a Covid-19 vaccination. We also wanted to look at whether mental health conditions could help explain any geographic differences in vaccine uptake.

What we did

We created a national cohort using a unique dataset made up of information on:

- medication dispensed by community pharmacists
- population data (such as age and gender)
- vaccination status.

We also used data on emergency department attendance and secondary care Patient Administration System data to help us identify whether someone was a resident in NI. All data was linked by the unique identifier and the dataset was anonymised and made available to us through the Business Services Organisation's online Secure Research Platform. Our study population was made up of NI residents who were aged 18 and over on 1 December 2020 and alive on 9 September 2021.

We accounted for whether individuals had physical health problems as well as any mental health conditions. We did this by counting the number of British National Formulary chapters a person had been receiving medications from. To be included, a person had to be prescribed a medication repeatedly in the six months before the start of the vaccination programme. We adapted this method from one that has been used in earlier studies which looked at how existing health conditions could impact a person's likelihood of receiving the Covid-19 vaccines and/or the effectiveness of the vaccines.

We used prescriptions to look at four different groups of psychotropic medications:

- antidepressants
- antipsychotics
- anxiolytics (medications used to treat anxiety)
- hypnotics (commonly known as sleeping pills)

As when we accounted for a person's physical health status, to be counted, a person had to have been prescribed these medications in the six-month period leading up to the vaccination programme. We used the prescription of psychotropic medications as a proxy for mental health conditions as we did not have access to any individual-level primary and secondary care diagnostic data. However, this method has allowed us to examine population-wide coverage of mental health treatment with reasonable validity.

What we found

Overall, we examined the data of 1,433,814 NI residents, 81% of whom were found to have received at least one dose of a Covid-19 vaccine. We found that nearly one-in-five (19%) of our study population were prescribed some type of psychotropic medication in the lead up to the vaccination programme. Antidepressants were the most prescribed medication, used by 21% of women and 12% of men. Meanwhile, antipsychotics were the least common, only given to 2% of the population. Anxiolytic and hypnotic medications were both prescribed to around 3% of people. As found in other studies, our results showed that physical illness was strongly associated with the use of psychotropic medications, especially antidepressants.

- After adjustment for sociodemographic and health characteristics, we found that the use of psychotropic medications was a significant risk for lower vaccine uptake.
- Antidepressant use did not affect a person's chances of being vaccinated.
- Those receiving anxiolytics, antipsychotics or hypnotics all had lower odds of vaccination compared to people who had not been prescribed them.
- Anxiolytics and antipsychotics had the greatest individual effects, particularly in people under 40 receiving both anxiolytics and hypnotics.
- We found that the use of psychotropic medications did not help to explain the differences in vaccine uptake often seen between people living in more and less deprived areas.

Why it matters

Understanding if a person having a mental health condition affects whether they get vaccinated against Covid-19 is important, as it helps us to understand how equitable the availability of vaccination services is. We can use this information to evaluate how effective our current approaches are at reaching these priority groups.

What next?

Our study may be the first nationwide study investigating variation in Covid-19 vaccination uptake among people with severe and common mental health disorders. It highlights the urgent need for innovative, evidence-based approaches to support people who have mental health conditions to be vaccinated. More research is needed to explore other priority groups that may have lower vaccination uptake rates. Subsequently, our next steps are to examine variation in vaccine uptake among pregnant women and the associations with adverse maternal, perinatal and postnatal outcomes.

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