

COVID-19 VACCINATION DISPARITIES BETWEEN GENDER AND INCOME LEVEL FOR ADRD PATIENTS

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Introduction

This research focuses on the specific demographics that influence COVID-19 vaccine hesitancy in Alzheimer's and Dementia related disease (ADRD) patients. Looking into how both gender and income level influence vaccine hesitancy will allow public health efforts to create more informed and targeted information to combat vaccine hesitancy and increase vaccine coverage. Studies state that having vaccination coverage is the more effective way to prevent morbidity and mortality from Covid-19. (Valier et al.) ADRD patients are at higher risk, indicating how critical vaccination coverage is for these patients. The research gathered highlights specifically how gender and economics impact vaccine coverage and hesitancy for patients. Continued research into the additional demographic and social determinants that affect vaccination coverage for ADRD patients will allow for interventions to be more targeted, and therefore effective at increasing coverage.

Methodology

- Data taken from the All of Us (AoU) Researcher Workbench was used to complete a retrospective cross-sectional study. COVID-19 vaccine survey questionnaires were used to collect the data.
- Relevant data was extracted from additional sources, including the COVID-19 vaccine survey, Social Determinants of Health, and Electronic Health Record (EHR). Differences in COVID-19 vaccine coverage between male, female, and transgender/non-binary identifying patients were investigated.
- Additionally, economic factors were added to create a cross-sectional study by investigating income levels of 1-50k, 50-100k, and over 100k a year.
- A Chi-Squared test was performed to analyze statistical significance

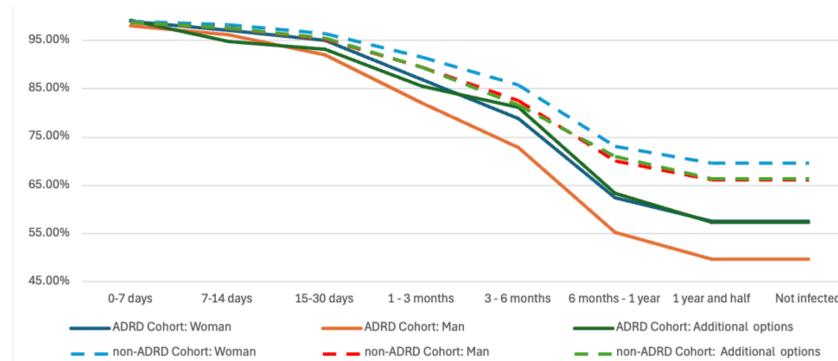
References



Results

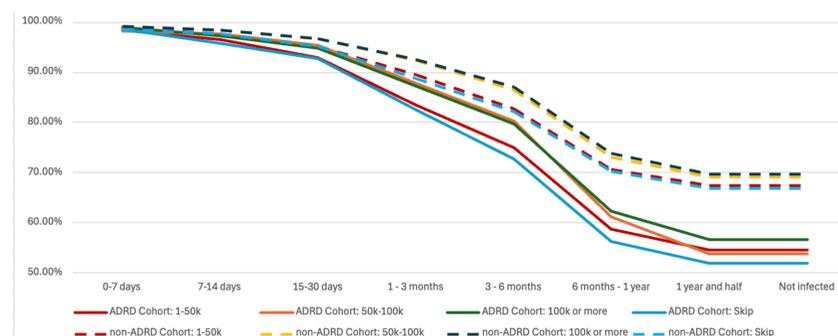
Results					
	No Doses	1 Dose	2 Doses	3 Doses	Row Totals
Female	6 (5.36) [0.08]	3646 (3351.53) [25.87]	11368 (10706.46) [40.88]	10738 (11694.65) [78.26]	25758
Male	2 (3.41) [0.58]	1819 (2133.52) [46.36]	6162 (6815.50) [62.66]	8414 (7444.57) [126.24]	16397
Transgender/Non-binary/Additional options/Prefer not to say	1 (0.23) [2.55]	165 (144.95) [2.77]	455 (463.04) [0.14]	493 (505.78) [0.32]	1114
Column Totals	9	5630	17985	19645	43269 (Grand Total)

- The chi-square statistic is 386.7138. The p-value is < 0.00001. The result is significant at $p < .05$. This indicates a statistically significant relationship between gender identity and Covid-19 vaccine coverage.



Results					
	No Doses	1 Dose	2 Doses	3 Doses	Row Totals
1-50k	4 (3.40) [0.10]	2045 (2129.35) [3.34]	7196 (6802.20) [22.80]	7120 (7430.04) [12.94]	16365
50-100k	3 (1.98) [0.53]	1113 (1237.54) [12.53]	3722 (3953.30) [13.53]	4673 (4318.19) [29.15]	9511
100k or more	1 (1.92) [0.44]	1371 (1202.01) [23.76]	3439 (3839.83) [41.84]	4427 (4194.24) [12.92]	9238
prefer not to say	1 (1.70) [0.29]	1101 (1061.10) [1.50]	3628 (3389.67) [16.76]	3425 (3702.53) [20.80]	8155
Column Totals	9	5630	17985	19645	43269 (Grand Total)

- The chi-square statistic is 213.2319. The p-value is < 0.00001. The result is significant at $p < .05$. This indicates a statistically significant relationship between income level and Covid-19 vaccine coverage.



Discussion

- Chi Squared analysis indicates a statistical significance between gender identity and Covid-19 vaccine dose coverage.
- Female identifying individuals had the highest dosage coverage in comparison men and transgender/non-binary/additional options
- Immunity retention decreased across all gender identities but men had the fastest (98% at 0-7 days and 49.6 at 1 year)
- Higher income groups (100k or more a year) had higher rates of vaccination coverage (2 and 3 doses of the Covid-19 vaccine)
- 1-50k income a year group had the lowest percentage of individuals who remained uninfected (54.5%), compared to 56.7% in the 100k and more a year income group
- Higher income groups had longer rates of immunity to Covid-19 following vaccination

Conclusion & Future Research

The data indicates a statistically significant association between gender identity and income level and Covid-19 vaccination coverage for ADRD patients. While this association has been established as significant, additional longitudinal studies are required to further determine why these factors have different dosage coverage for the Covid-19 vaccine. Investigating access to healthcare, vaccine hesitancy, and other social and demographic factors would allow providers to overcome the disparity in vaccination coverage for certain populations. The link between lower vaccination coverage and lower income levels also suggests that continuing to address how socioeconomic factors contribute to vaccination coverage and hesitancy for ADRD patients is critical.

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