The Association between Mental Health Diagnoses and Influenza Vaccine Receipt among Older Primary Care Patients

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Introduction

- Those 65 years of age and older have the highest risk of influenza-related mortality. Yet a significant proportion of this group does not receive an annual flu vaccine, an effective method for preventing the flu.
- Knowing the factors associated with vaccine status specific to being a barrier or facilitator of vaccination in a primary care setting could allow for intervention development to target those most unlikely to obtain an annual vaccination.
- Evidence suggests mental health diagnoses are associated with an increased likelihood of not having an flu vaccine.
- However, no study to date has assessed for a relationship between mental health conditions and flu vaccine status while controlling for confounding variables.

The purpose of our study was to determine the association between flu vaccine receipt in patients 65 to 80 years old and a depression and/or anxiety in a primary care setting while controlling for confounding variables.
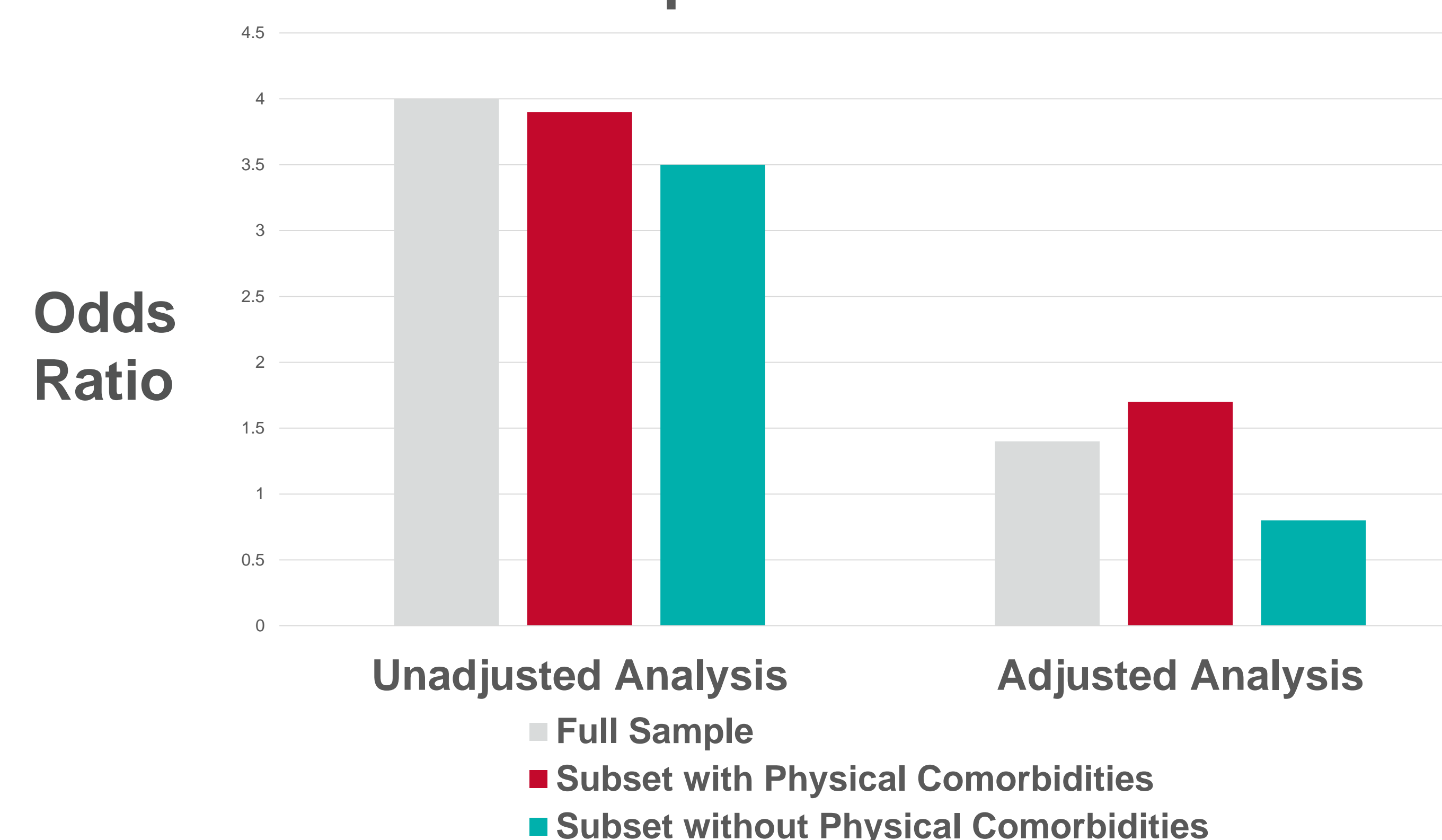
Methods

- We used a cross-sectional analysis of a retrospective cohort of EHR data from 4,102 patients who had a primary care appointment at a Primary Care clinic in a Midwestern, metropolitan area between July 2008 and June 2016.
- Patients 65 to 80 years of age (n=4,589) were included. Those with missing race, marital status, zip code, or gender were excluded. After applying the eligibility criteria, the final sample was 4,102.

Results

Sample Characteristics Overall and by Influenza Vaccine Receipt

	Overall	Flu Vaccine (n=1006)	No Flu Vaccine (n=3096)	
	n(%) or Mean (SD)	n(%) or Mean (SD)	n(%) or Mean (SD)	p-value
Age	70.80 (4.40)	70.83 (4.38)	70.79 (4.40)	0.7
Comorbidity Index	1.58 (2.21)	1.85 (2.27)	1.49 (2.18)	<.01
Anxiety or depression	274 (6.68)	147 (14.61)	127 (4.10)	<.01
Female	2426 (59.14)	619 (61.53)	1807 (58.37)	.07
White race	2326 (56.70)	554 (55.07)	1772 (57.24)	.22
Married	1852 (45.15)	479 (47.61)	1373 (44.35)	.07
Socioeconomic status				<.01
Lowest	1328 (32.37)	298 (29.62)	1030 (33.27)	
Lower middle	949 (23.14)	256 (25.45)	693 (22.38)	
Upper middle	926 (22.57)	260 (25.84)	666 (21.51)	
Highest	899 (21.92)	192 (19.09)	707 (22.84)	
Influenza	20 (.49)	11 (1.09)	9 (0.29)	<.01
Pneumonia	144 (3.51)	49 (4.87)	95 (3.07)	<.01
Respiratory disorder	944 (23.01)	312 (31.01)	632 (20.41)	<.01
Antidepressant	445 (10.85)	222 (22.07)	223 (7.20)	<.01
Benzodiazepine	171 (4.17)	76 (7.55)	95 (3.07)	<.01
Prior vaccine	1729 (42.15)	701 (69.68)	1028 (33.20)	<.01
High utilization	1839 (44.83)	777 (77.24)	1062 (34.30)	<.01

The Relationship Between Any Mental Health Diagnosis and Influenza Vaccine Receipt in the Total Sample and Subsets

Odds Ratio

- Full Sample
- Subset with Physical Comorbidities
- Subset without Physical Comorbidities

Discussion

- Any mental health diagnosis was not associated with reduced likelihood of influenza vaccine receipt. This finding may be explained by greater healthcare utilization among those with mental health concerns.
- In regards to social determinants of health, analyses did not find that race was associated with flu vaccine status but socioeconomic status was. Those in the lowest socioeconomic quartile had high rates of being unvaccinated.
- Results provide further evidence of the comorbidity of mental and physical conditions, supporting the integration of behavioral health providers into healthcare settings.

Future Directions

- Validity of future research could be improved by using data from primary care, pharmacies, and urgent care settings, all of which can administer vaccines.
- Given the increase in integrated behavioral health services in primary care, it is important that future research continue to expand our understanding of the relationship between mental health conditions and health behaviors or physical conditions.

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