

Evaluation of Social Determinants of Health and Barriers to Medication Adherence in Patients with Chronic Medications in a Large Community Pharmacy Chain

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Kroger Health / University of Cincinnati



OPA Annual Conference & Trade Show
Practice Strategies for Changing Times

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Disclosure Statement

- Ranelle Coffman has no relevant financial relationship(s) with ineligible companies to disclose.
- None of the planners for this activity have relevant financial relationships with ineligible companies to disclose.
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- Andrea Brookhart, PharmD, BCACP
- Brenda Barnes, PharmD, MS

Learning Objectives

At the completion of this activity, the participant will be able to:

1. Discuss the CDC social vulnerability index (SVI)
2. Identify patient-specific medication adherence barriers in patients who are nonadherent to chronic medications
3. Describe the relationship between SVI and patient-specific medication adherence barriers

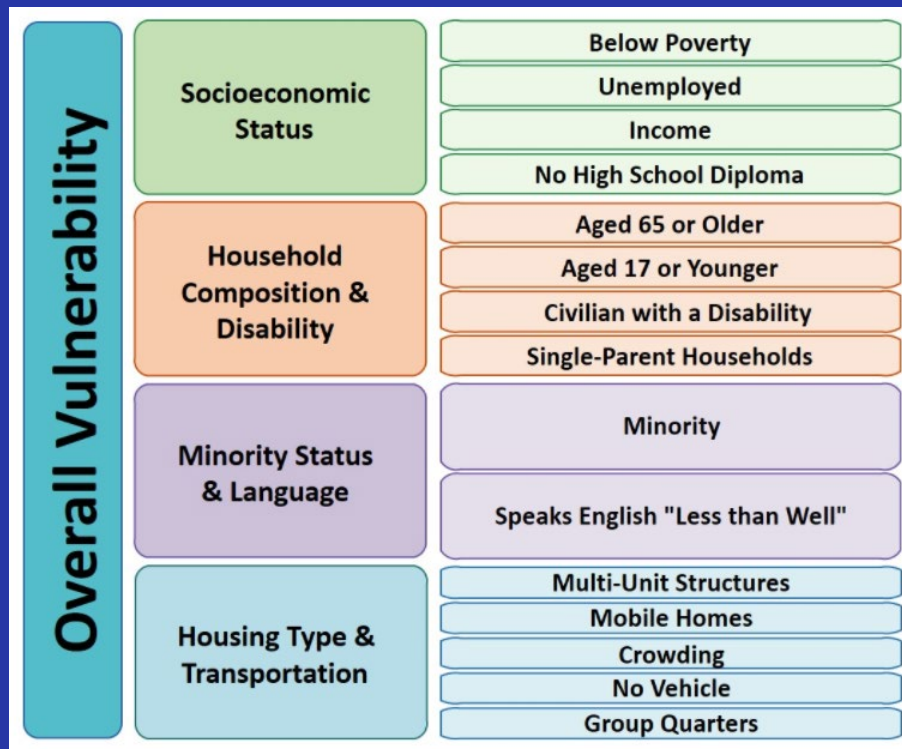
Background

- **Social determinants of health (SDoH)** are conditions in the places where people live, learn, work, and play that affect a wide range of health and quality of life risks and outcomes, including healthcare access and quality^{1,2}
- SDoH can have a **substantial impact on patients' medication-taking behavior** and, consequently, health outcomes
- By assessing patients' **social vulnerability**, barriers to medication adherence may be better understood and addressed

Gaps in Care

- Community pharmacists are uniquely positioned to help patients achieve their health goals with their **connection to the community** and accessibility
- Community pharmacy organizations have investigated many strategies and programs to **improve medication nonadherence**
- These organizations may improve their approach by **assessing patients' social vulnerability** and better understanding its relationship with barriers to adherence

Social Vulnerability Index (SVI)



- Indicates the relative vulnerability of every United States Census tract on 15 social factors⁴
- Provides social and spatial relevant information to help public health officials better prepare communities to respond to emergency events
- Four summary theme rankings are used to calculate an overall tract summary ranking, SVI
- Interpretation of SVI:
 - Ranges from 0 to 1
 - Higher value = greater vulnerability
 - Lower value = lower vulnerability

Objectives

Primary Objective

- to determine if a **relationship exists between patients' SVI and patient-specific medication adherence barriers** in patients who are nonadherent to chronic medications

Secondary Objective

- to evaluate the **impact of an SDoH assessment as part of a holistic adherence intervention** on changes in medication adherence rates, adherence barriers identified, and SDoH identified

Practice Site

- Assessed interventions across >2,300 pharmacies of a large community pharmacy chain
- Direct Patient Care Services:
 - Biometric healthcare screening
 - Vaccines
 - Medication therapy management
- Advanced Clinical Services:
 - Chronic disease state management
 - Appointment-based medication synchronization services



Methods

- Retrospective & prospective, multisite study
- Approved by the University of Cincinnati Institutional Review Board
- Historic adherence interventions
- Intervention period
 - Primary: 7/1/21 – 2/15/22
 - Secondary: 3/28/22 – 4/25/22
- Data analysis: regression analysis and descriptive statistics

Patient Identification

- Eligible study participants were identified through existing clinical services programs
 - Retrospective adherence assessments from the adherence intervention program
 - Prospective SDoH assessments added to adherence interventions

Intervention

- *Primary:* historic adherence interventions were evaluated to determine if a relationship exists between an SVI and medication adherence barriers
- *Secondary:* pharmacists will conduct an adherence and an SDoH assessment in five pharmacies within one regional division to implement solutions to improve medication adherence

Results: Patient Demographics

Demographics	n (%)
Gender	
Male	939 (42.5)
Female	1,274 (57.6)
Total Patients	2,212
Average Age	71 Years old
Medication Type by Class	
Hypertension: RAS-Antagonists	
Cholesterol: Statins	
Diabetes: Non-insulin	
(CDC Star Ratings Medications)	

Results: Average SVI per Adherence Barrier

Adherence Barrier	Count (%)	Average SVI
Barrier: Adverse Effects	45 (1.6)	0.65
Barrier: Convenience	31 (1.1)	0.46
Barrier: Cost Concern	26 (0.9)	0.53
Barrier: Directions	30 (1.1)	0.38
Barrier: Forgetfulness	165 (5.9)	0.44
Barrier: Limitations	4 (0.1)	0.48
Barrier: Medication Efficacy	32 (1.1)	0.43
Barrier: Motivation	24 (0.9)	0.45
Barrier: Other	10 (1.4)	0.42
Barrier: Regimen	10 (0.4)	0.53
General Nonadherence	529 (18.9)	0.46
Refill Eligible	1,899 (67.7)	0.46

Results: Primary Objective

Adherence Barrier	1 st Quartile Lowest 25%	2 nd Quartile 25-50%	3 rd Quartile 50-75%	4 th Quartile Highest 25%
Average Quartile SVI	0.111	0.332	0.570	0.835
Barrier: Adverse Effects	0.9%	1.3%	2.2%	3.8%*
Barrier: Convenience	1.6%	1.3%	0.7%	2.0%
Barrier: Cost Concern	0.7%	1.1%	1.4%	1.4%
Barrier: Directions	2.4%*	1.3%	1.1%	0.7%
Barrier: Forgetfulness	7.8%	7.8%	7.2%	7.1%
Barrier: Limitations	0.0%	0.4%	0.4%	0.0%
Barrier: Medication Efficacy	2.0%	0.7%	2.0%	1.1%
Barrier: Motivation	1.6%	0.7%	0.9%	1.1%
Barrier: Other	0.5%	0.2%	0.9%	0.2%
Barrier: Regimen	0.4%	0.2%	0.5%	0.7%
General Nonadherence	24.2%	21.9%	25.7%	23.9%
Refill Eligible	85.4%	87.3%	85.7%	85.0%
Total Barriers	553	553	553	553

Study Limitations

- Incidence rate of adherence barriers was too low to complete regression analysis as originally anticipated
- Matching SVI data to adherence interventions was completed at the U.S. census tract level
- Presence of a global pandemic impacted pharmacist ability to complete adherence assessments due to competing responsibilities with pandemic response

Discussion

- Pharmacist intervention documentation varied widely
- Standardization of pharmacist documentation is needed to improve barriers identified to better address medication adherence

Conclusion

- Forgetfulness was the most common patient-specific barrier identified by pharmacists
- Additional research with more interventions should be conducted to better understand the relationship between SVI and patient-specific medication adherence barriers

Next Steps

- Repeat data analysis after completion of more medication adherence interventions
- Continue implementation into five pharmacies within a regional division of a large community pharmacy chain to evaluate the impact of an SDoH assessment as part of a holistic adherence intervention on changes in medication adherence rates, adherence barriers identified, and SDoH identified
- Assess current standardized adherence intervention program

Question 1

- What is the most common **patient-specific barrier** identified during adherence interventions?
 - a) Adverse effects
 - b) Directions
 - c) Forgetfulness
 - d) Cost

Question 1

- What is the most common **patient-specific barrier** identified during adherence interventions?
 - a) Adverse effects
 - b) Directions
 - c) **Forgetfulness**
 - d) Cost

References

1. Centers for Disease Control and Prevention. Social Determinants of Health. Centers for Disease Control and Prevention. Published 2019. <https://www.cdc.gov/socialdeterminants/index.htm>.
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Need More Information?

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Understanding Pharmacy Deserts in Urban Areas and Effect on Adherence to Medications for Diabetes

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CareSource



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Disclosure Statement

- Dr. Monica Blankenship is an employee of CareSource and Synchrony Pharmacy

and

- All of the relevant financial relationships listed for this/these individual(s) have been mitigated.

and

- None of the planners for this activity have relevant financial relationships with ineligible companies to disclose.

Learning Objectives

At the completion of this activity, the participant will be able to:

- Identify potential contributing factors to medication non-adherence in urban areas

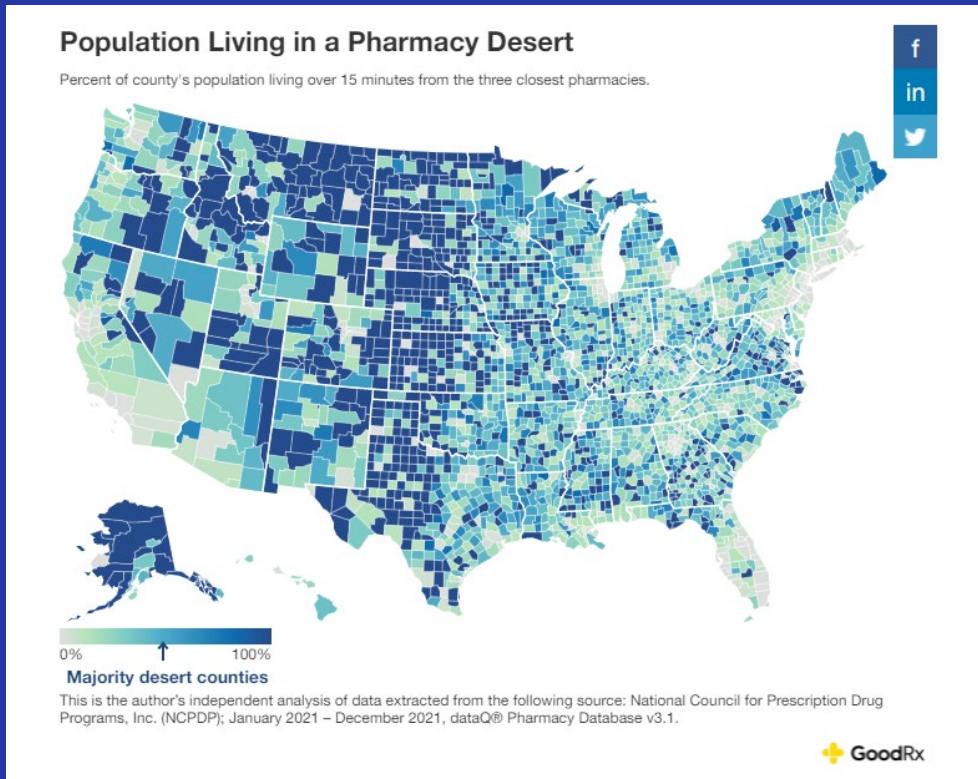
Background

<u>County</u>	<u>Population Density (people/km²)</u>
Marion County	919.88
Lake County	376.84
Hamilton County	309.50
Vanderburgh County	299.59
St. Joseph County	227.03
Allen County	217.34

U.S. Census Bureau (2020). Average Household Size and Population Density – County.
<https://covid19.census.gov/datasets/USCensus::average-household-size-and-population-density-county>

Barrier to Healthcare: Non-Adherence
How can we address this?

Background



GoodRx study published in 2021

- Identified Healthcare Deserts throughout the country
 - Over 40% of counties are in pharmacy deserts



Study Objective

Evaluate the correlation and impact that pharmacy deserts in urban areas have on adherence to medications for diabetes

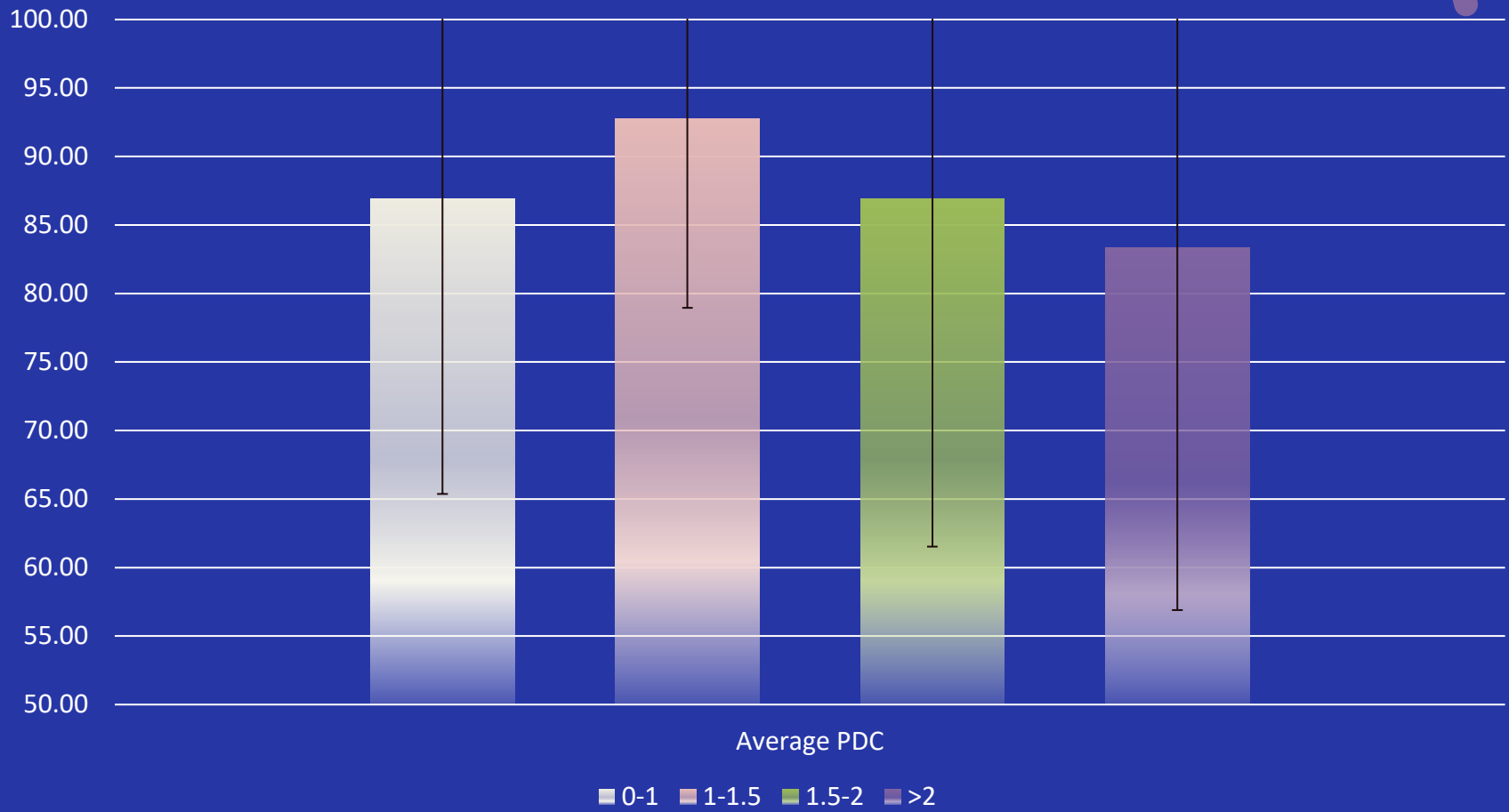
Methods

- Retrospective claims analysis over 10-month period
 - Medicaid members from 3 counties
 - At least 1 medication claim over the study period
 - Mile data from in-network pharmacy
 - 0-1 mile, 1-1.5 miles, 1.5-2 miles, >2 miles
- PDC: Proportion of Days Covered
 - A primary measure of medication adherence

Results: Allen County

Miles	Sample Size	Average of PDC	Max PDC	Min PDC	Std. Dev.
0-1	83	86.91	100.00	24.00	21.55
1-1.5	40	92.75	100.00	48.39	13.08
1.5-2	17	86.91	100.00	26.55	25.38
>2	16	83.31	100.00	26.32	26.42

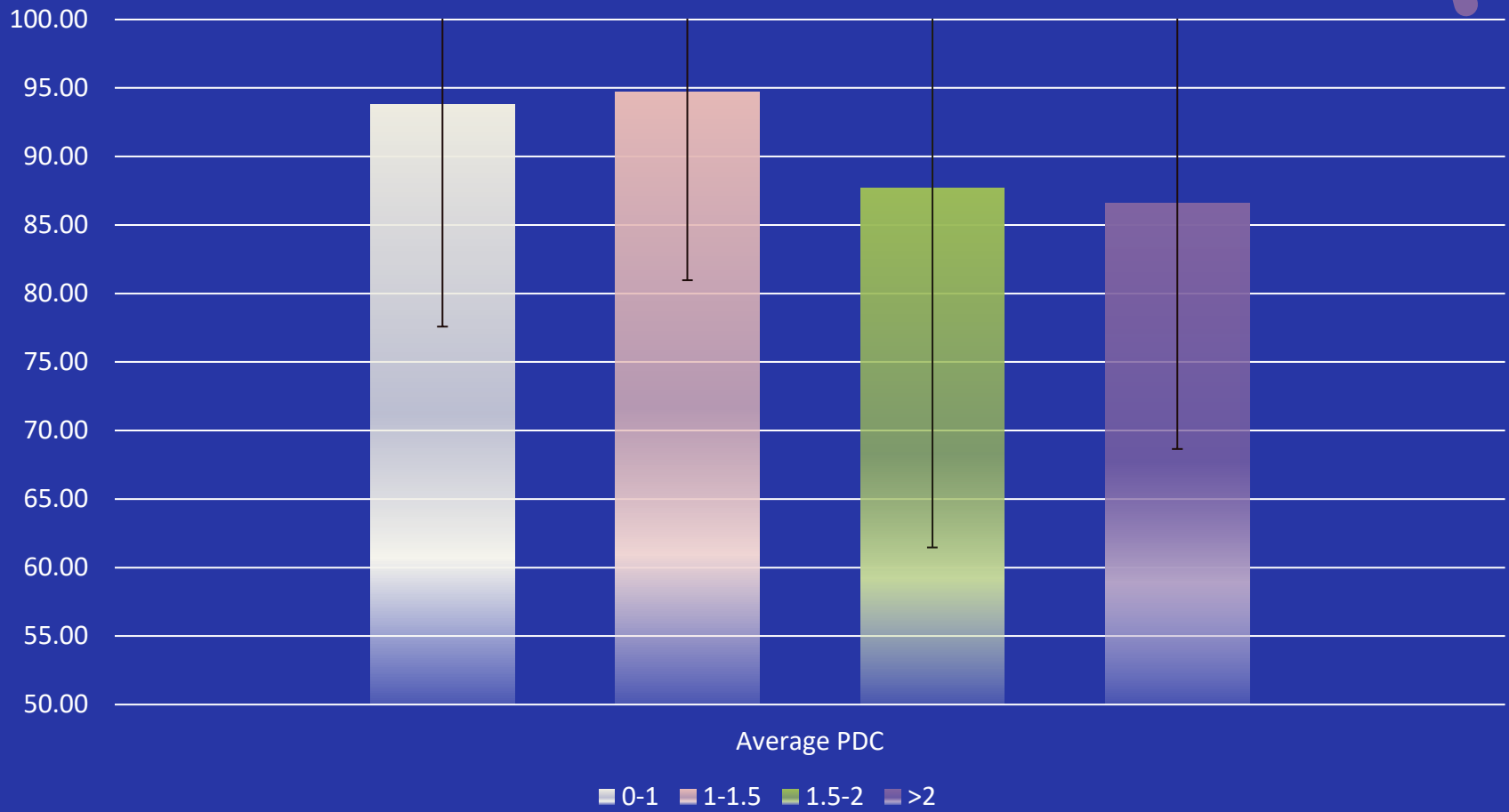
Results: Allen County



Results: Lake County

Miles	Sample Size	Average of PDC	Max PDC	Min PDC	Std. Dev.
0-1	60	93.77	100.00	28.57	16.19
1-1.5	22	94.68	100.00	51.28	13.71
1.5-2	23	87.72	100.00	18.07	26.26
>2	19	86.60	100.00	48.39	17.95

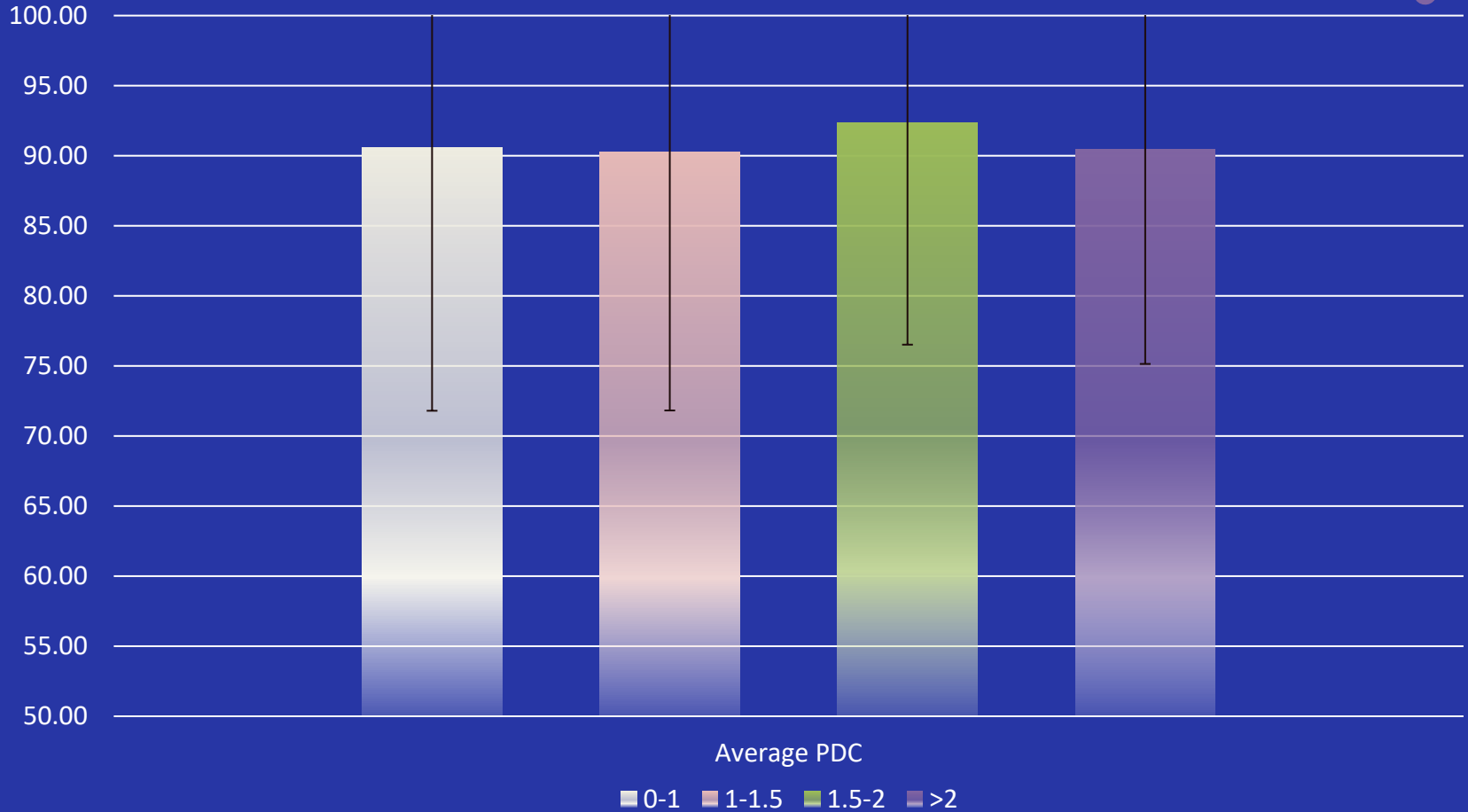
Results: Lake County



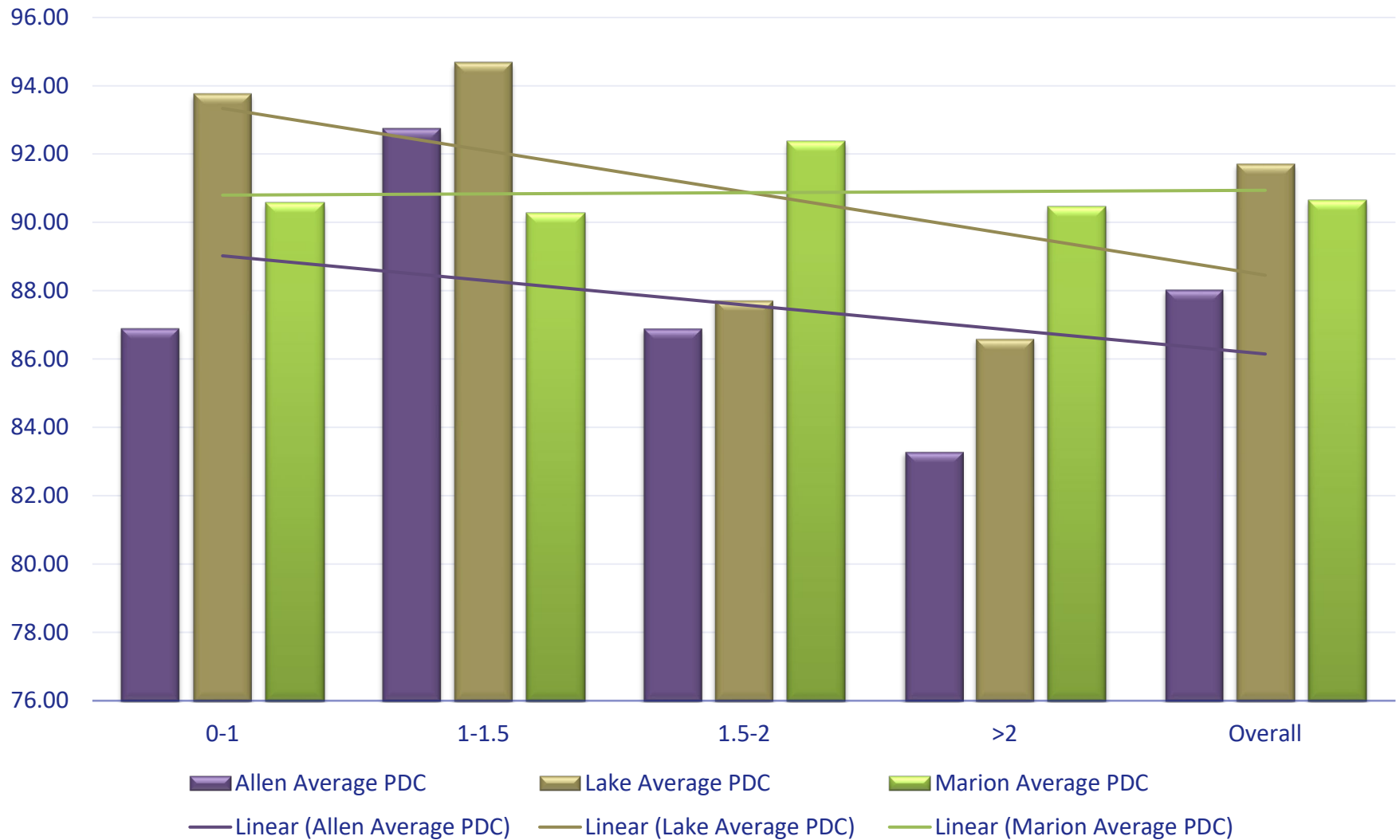
Results: Marion County

Miles	Sample Size	Average of PDC	Max PDC	Min PDC	Std. Dev.
0-1	266	90.57	100.00	21.64	18.77
1-1.5	111	90.29	100.00	23.08	18.47
1.5-2	38	92.37	100.00	23.33	15.85
>2	7	90.47	100.00	58.93	15.33

Results: Marion County



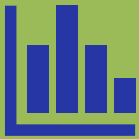
Discussion



An abstract geometric pattern on a dark blue background. The pattern includes a large orange-outlined triangle in the top left, a teal circle in the top right, a large pink semi-circle in the center, a teal circle on the left, a pink semi-circle at the bottom left, and an orange-outlined square on the bottom right. Several small, light purple dashed lines are scattered throughout the composition.

- Factors for consideration
 - Sample size
 - Disease state
 - Claims history
 - Medication burden

Conclusion



NO CORRELATION BETWEEN
MILES AND ADHERENCE



HIGHLIGHTED NEED TO
FURTHER INVESTIGATE
CAUSE OF NON-ADHERENCE



INCREASE GEOGRAPHICAL
STUDY SIZES AND RANGES

References

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- Nguyen A, Van Meijgaard J, Kim S, Marsh T. Mapping Healthcare Deserts. The GoodRx Research Team. Published September 2021. Accessed September 18, 2021 https://assets.ctfassets.net/4f3rgqwzdznj/1XSI43I40KXMQiJUtl0ilq/ad0070ad4534f9b5776bc2c41091c3.21/GoodRx_Healthcare_Deserts_White_Paper.pdf
- U.S. Census Bureau (2020). Average Household Size and Population Density – County. Retrieved from <https://covid19.census.gov/datasets/USCensus::average-household-size-and-population-density-county>

Need More Information?

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Impact of a Pharmacist-Run Electronic Consult Service in a Network of Patient-Centered Medical Homes

Kaitlin Kuznacic, PharmD

PGY1 Pharmacy Resident in Ambulatory Settings

The Ohio State University General Internal Medicine Clinics

The Ohio State University College of Pharmacy



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Disclosure Statement

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- None of the planners for this activity have relevant financial relationships with ineligible companies to disclose.

At the completion of this activity, the participant will be able to:

1. Describe electronic consult (eConsult) services
2. Identify the most utilized eConsult to pharmacy
3. Recognize the perceived benefits of an eConsult service

Learning Objectives

Background

Study Setting

The Ohio State University Division of General Internal Medicine Clinics

- 7 National Committee for Quality Assurance (NCQA) Patient-Centered Medical Homes (PCMHs)
- >60 attending physicians and >100 medical residents
- 10 pharmacists → 7.1 full time equivalents
- 2 pharmacy residents
- Serving >70,000 patients
- Value-based payment contracts with Centers for Medicare and Medicaid Services (CMS), Ohio Medicaid, and private insurers
- eConsult service began on February 25, 2020

Pharmacy Practice

Chronic disease management

Transitional care management

Population health management

Polypharmacy

Team-based care

eConsults

eConsult

What is an eConsult

- Asynchronous, consultative, provider-to-provider communication¹
- Occurs in a shared electronic health record (EHR)^{1,2}

Utilization in primary care

- Elicit expertise of specialists without referral
- Solidify care management decisions³

Types of eConsults

**Adverse drug
reaction review**

**Cost
savings/formulary
medication
question**

**Dosing
recommendation**

**Drug interaction
review**

**Drug therapy
recommendation**

**Fall risk
medication review**

**Medication
conversion
recommendation**

Medication taper

**Polypharmacy
medication review**

Objectives

Primary

- Describe the number and types of eConsults placed to pharmacists in a network of primary care PCMH

Secondary

- Describe the number of eConsults completed by, converted to an office visit with, or declined by a pharmacist
- Track the number of pharmacist recommendations made as a result of and implemented within 30 days of an eConsult
- Evaluate PCP perceptions of the eConsult service

eConsult: electronic consult

PCMH: patient-centered medical center

PCP: primary care provider

Methods

Two-Step Approach



EHR-generated report to identify eConsults placed to pharmacy during the study period



Electronic survey via Qualtrics™ sent to attending providers



Outcomes analyzed using descriptive statistics

EHR-Generated Report

eConsult to Pharmacy Placed by PCP

- February 25, 2020 – July 6, 2021

Data on EHR-generated Report

- Demographics
- eConsult category
- Outcome of eConsult

Retrospective Chart Review

- Recommendations for changes in medication therapy made
- Recommendation acceptance and implementation within 30 days

Electronic Survey via Qualtrics™

Sent to all attending PCPs

Data collection

- PCP demographics
- PCP utilization of eConsults
- PCP perception of eConsults

Survey

1. Identify your role within OSU General Internal Medicine
 - a. Resident physician
 - b. Attending physician
 - c. Nurse practitioner
2. How many years have you been in practice?
 - a. 0-5 years
 - b. 6-10 years
 - c. 11-15 years
 - d. 16-20 years
 - e. >20 years
3. Have you placed an eConsult to pharmacy?
 - a. Yes
 - b. No – If No is chosen, survey will end
4. Please choose the answer than represents how you feel about the following statement: The eConsult to pharmacy enhances my ability to provide safe and effective care for my patients.
 - a. Strongly agree
 - b. Somewhat agree
 - c. Neither agree nor disagree
 - d. Somewhat disagree
 - e. Strongly disagree

Survey

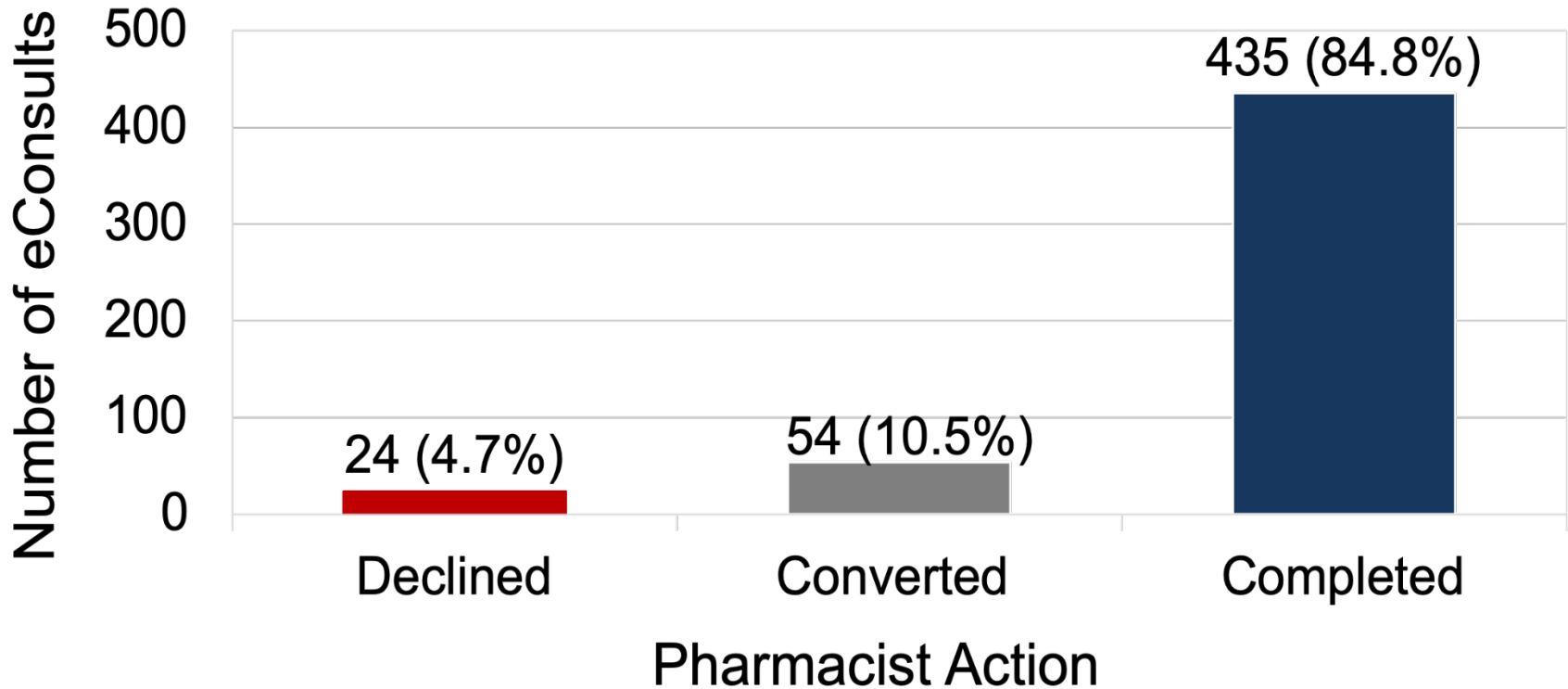
5. For each eConsult to pharmacy placed, I estimate that I save about ____ minutes in providing care for the patient:
 - a. 0-5 minutes
 - b. 6-10 minutes
 - c. 11-15 minutes
 - d. 16-30 minutes
 - e. >30 minutes
6. Please select the top 3 benefits of an eConsult to pharmacy.
 - a. Improvement in patient outcome(s)
 - b. Decrease in risk for adverse drug event
 - c. Ability to bill the eConsult as a physician resulting in wRVU
 - d. Ability to save money for health-system
 - e. Ability to save money for the patient
 - f. Ability to save provider time spent on patient care
 - g. Improvement in efficiency of or time until clinical intervention(s) for patient
 - h. Decrease in need for referral to other specialists
 - i. Other (please comment)
7. Please rate the overall value of the eConsult to pharmacy service for your patient.
 - a. Very valuable
 - b. Somewhat valuable
 - c. Neither valuable nor not valuable
 - d. Somewhat not valuable
 - e. Not at all valuable
8. Please enter any additional comments that you would like to share about the eConsult to pharmacy service.

EHR Report Results

eConsult Category

Type of eConsult (N=513)	N (%)
Adverse drug reaction review	48 (9.4)
Cost savings/formulary med question	110 (21.4)
Dosing recommendation	34 (6.6)
Drug interaction review	42 (8.2)
Drug therapy recommendation	106 (20.7)
Fall risk med review	1 (0.2)
Med conversion recommendation	35 (6.8)
Medication taper	32 (6.2)
Polypharmacy med review	28 (5.5)
No category selected	77 (15)

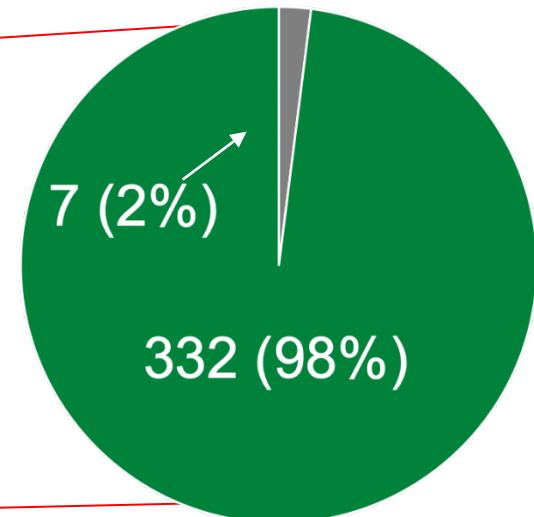
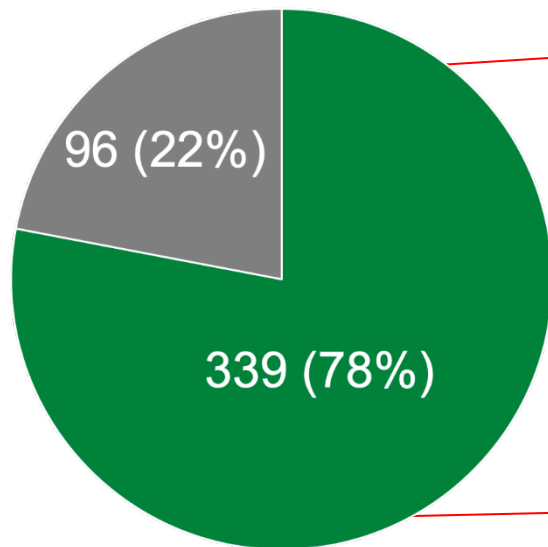
Pharmacist eConsult Action (N=513)



Pharmacist Recommendation Implementation

Specific medication recommendation
made by a pharmacist in eConsult
(N= 435)

Recommendations implemented by
PCP (N= 339)



■ No ■ Yes

PCP Survey Results

Survey Results

The eConsult to pharmacy enhances my ability to provide safe and effective care for my patients (N= 24)

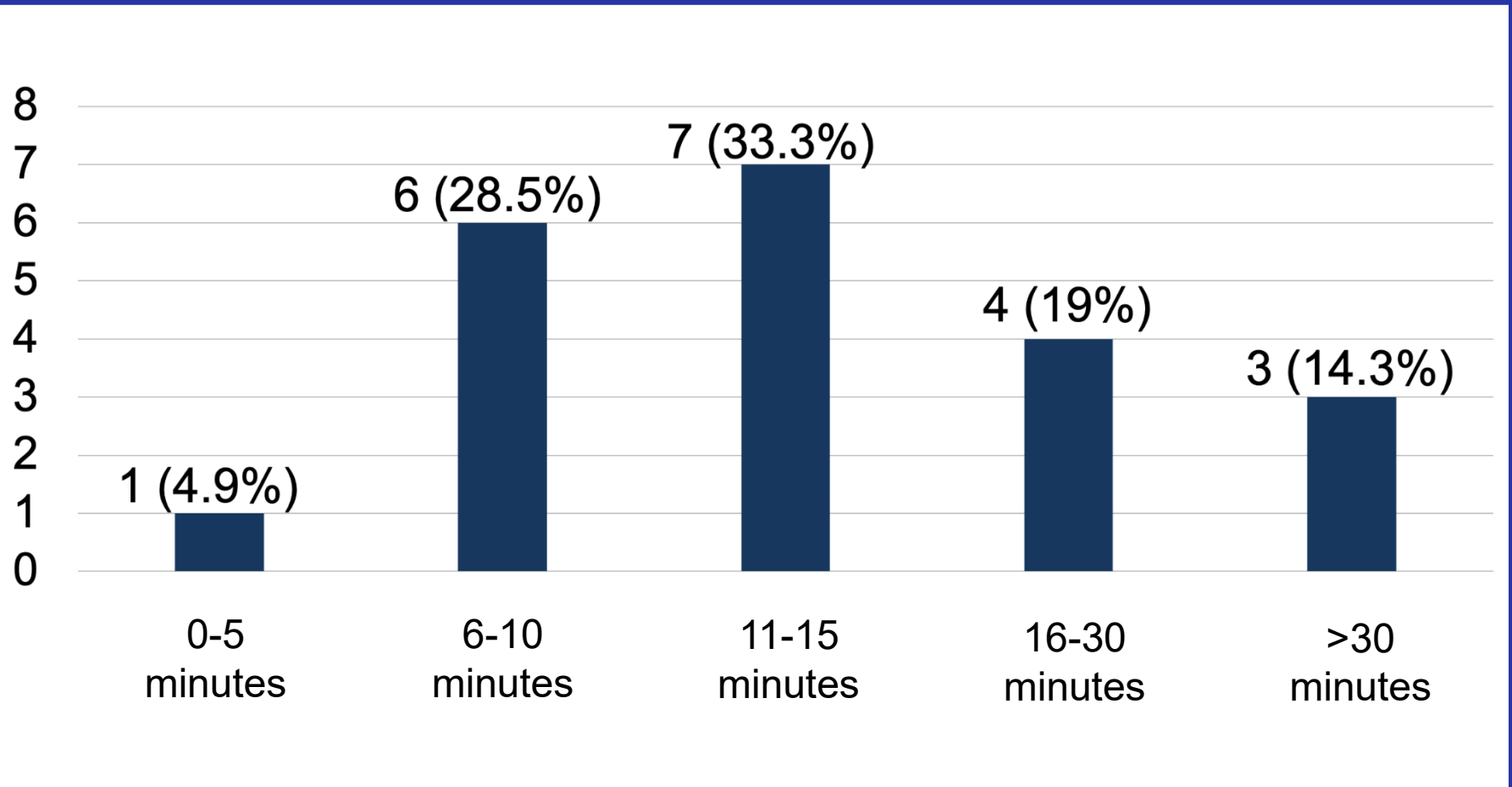
Strongly agree	23 (95.8%)
Somewhat agree	1 (4.2%)
Neither agree nor disagree	0 (0%)
Somewhat disagree	0 (0%)
Strongly disagree	0 (0%)

Survey Results

Please rate the overall value of the eConsult to pharmacy service for your patients (N=14)

Very valuable	14 (100%)
Somewhat valuable	0 (0%)
Neither valuable nor not valuable	0 (0%)
Somewhat not valuable	0 (0%)
Not at all valuable	0 (0%)

Perceived Time Saved in Providing Patient Care (N=21)



Perceived Benefits of an eConsult

Top 3 Perceived Benefits of an eConsult to Pharmacy (N=17)	N (%)
Improvement in patient outcomes	15 (88)
Ability to save provider time spent on patient care	14 (82)
Improvement in efficiency of, or time until, clinical intervention(s) for patient	10 (59)

Conclusions

Conclusions

Pharmacy eConsult Service

- Highly utilized by PCP
- Perceived as a benefit to providers and patients

Future Considerations

- eConsults that resulted in billing
- Describe financial sustainability of service

Acknowledgements

Kelli D. Barnes, PharmD, BCACP

Cory P. Coffey, PharmD, BCACP, BCPP

Kevin Goist, MD

References

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Need More Information?

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Assessing the Effectiveness of Consultant Pharmacist Led Heart Failure Management in the Skilled Nursing Setting

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University of Cincinnati/Medication Managers



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Disclosure Statement

- Solida Nay has no relevant financial relationship(s) with ineligible companies to disclose.
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- None of the planners for this activity have relevant financial relationships with ineligible companies to disclose.



Learning Objectives

1. Discuss the prevalence of heart failure in the US
2. Describe care concerns for elderly patients with heart failure
3. Review study design and objectives
4. Outline methods for data collection
5. Address study limitations and future directions

Background^{1,2,3}

Heart Failure statistics in US

- 2012: 5.7 million adults diagnosed
- 2018: 6.2 million adults diagnosed
 - 85% of heart failure cases occurred in patients > 65 years of age
- 2018: 379,800 HF related death
- 2030 projection: 8.5 million adults with heart failure

Estimated cost related to Heart Failure:

- 2012: \$30.7 billion
- 2020: \$43.6 billion
- 2030 projection: \$69.7 billion

Background⁴

Medicare: Top five principal diagnosis with the highest number of 30-day all cause adult hospital readmissions, 2018

Medicare	Admitted	30-day readmission	Rate
Septicemia	1,144,300	213,900	18.7
Heart Failure	775,900	178,000	22.9
COPD	387,600	78,000	20.1
Pneumonia	437,000	73,800	16.9
Acute and unspecified renal failure	360,000	72,100	20.0

Background⁴

Medicare: Top five principal diagnosis with the highest number of 30-day all cause adult hospital readmissions, 2018

Medicare	Admitted	30-day readmission	Rate
Septicemia	1,144,300	213,900	18.7
Heart Failure	775,900	178,000	22.9
COPD	387,600	78,000	20.1
Pneumonia	437,000	73,800	16.9
Acute and unspecified renal failure	360,000	72,100	20.0

Geriatric Patients and Heart Failure

- Geriatric Considerations
 - Frailty
 - Fall risk
 - Worsening of renal function
 - Increase risk of adverse events
 - Polypharmacy
 - Comorbidity
- Communication gap during transitions of care
- Misdiagnosis
 - Signs and symptoms of heart failure may be falsely attributed to aging process or other diseases



Significance of Study

- Limited clinical studies include patients >75 years of age
- Lack of studies involving long-term care residents with heart failure
- Potential to quantify impact of consultant pharmacist led heart failure management in skilled nursing setting
- Assess patient health outcomes associated with heart failure
 - exacerbation, progression, and readmission

Study Objectives

- Primary
 - Assess the impact of a consultant pharmacist heart failure (HF) management protocol in reducing readmission rates and heart failure exacerbations
- Secondary
 - Assess reduction in heart failure related symptoms
 - Measure the number of patients on appropriate heart failure therapy based on current guidelines
 - Track the rate of acceptance for HF-related recommendations

Study Design: Retrospective chart review of patients in skilled nursing setting

Inclusion

- Patients ≥ 65 years of age
- HF diagnosis upon admission based on ICD-10 code
- Residents receiving consultant pharmacist services

Exclusion

- Patients not utilizing electronic health records as part of routine care
- Lack of HF diagnosis
- Appropriate HF guideline directed medication therapy (GDMT)
- Target or max tolerated dose

Study Inclusion ICD-10 Codes

I11.0 *Hypertensive
heart disease with heart
failure

I50.20 *Unspecified
systolic (congestive)
heart failure

I50.21 *Acute systolic
(congestive) heart failure

I50.22 *Chronic systolic
(congestive) heart failure

I50.23 *Acute on chronic
systolic (congestive)
heart failure

I50.30 *Unspecified
diastolic (congestive)
heart failure

I50.31 *Acute diastolic
(congestive) heart failure

I50.32 *Chronic diastolic
(congestive) heart failure

I50.33 *Acute on chronic
diastolic (congestive)
heart failure

I50.4 *Unspecified
combined systolic
(congestive) and diastolic
(congestive) heart failure

I50.41 *Acute combined
systolic (congestive) and
diastolic (congestive)
heart failure

I50.42 *Chronic
combined systolic
(congestive) and diastolic
(congestive) heart failure

I50.43 *Acute on chronic
combined systolic
(congestive) and diastolic
(congestive) heart failure

I50.9 *Heart failure,
unspecified.

Study Setting

Facility

- Long-term care facilities receiving consultant pharmacist services via Medication Managers

Data

- Long-term care facilities with electronic health records

Diagnosis Report

Facility #: —

Date: Jan 12, 2022

Time: 22:18:02 ET

Diagnosis Report *NEW*

Resident: All Unit: All Floor: All Status: Current Diagnosis Date Range: 01/01/2022 - 01/31/2022

Status: Active, Resolved Therapy: Both Code: I11.0 I11.9 I50.20 I50.30 I50.40 I50.9

<u>Resident Name</u>	<u>Location</u>	<u>Date</u>	<u>Rank</u>	<u>Resolved By/ Date</u>	<u>Classification</u>
UNSPECIFIED COMBINED SYSTOLIC (CONGESTIVE) AND DIASTOLIC (CONGESTIVE) HEART FAILURE (I50.40)					
	HC II 2210 R	10/28/2020	Diagnosis 14		Admission
UNSPECIFIED DIASTOLIC (CONGESTIVE) HEART FAILURE (I50.30)					
	HC II 2307 R	06/09/2019	Diagnosis 10		Admission
	HC I 1102 R	03/26/2019	Diagnosis 3		Admission
	HC II 2408 L	11/08/2021	Diagnosis 5		Admission
UNSPECIFIED SYSTOLIC (CONGESTIVE) HEART FAILURE (I50.20)					
	HC II 2402 L	03/07/2021	Diagnosis 2		Admission
	HC I 1305 L	01/07/2022	Diagnosis 13		Admission

Identifying Patients Admitted for Heart Failure Exacerbation

Allergies: Codeine

Code Status: FULL CODE

Special Instructions: Fluid restriction. To dining room for meals.

Diet: No Added Sugar diet, Level 7 - Regular texture, Level 0 - Thin consistency

Diagnosis: ACUTE ON CHRONIC SYSTOLIC (CONGESTIVE) HEART FAILURE

Admission (Re-entry): 1/8/2022

Initial Admission Date (MDS): 1/8/2022

Discharge Date:



Identifying Patients Admitted for Heart Failure Exacerbation

Custom Information	
Type Description	Item Description
Admission Type	Short Term
COVID 19 Vaccine Type	Moderna All Doses
COVID 19 Vaccine Status	Yes
Medicare Coverage	A & B
Medical Equipment Needed (ex:DME, Pulm, IV, Wound)	Sacral wound, IV cefepime Q24
Behavioral Issues	no
Wound Care Needs	Sacral
Elopement Risk	no
Admitting Diagnosis	CHF exacerbation, BLE Edema, UTI
Current Infections	yes - UTI
Monies to be Collected on Admission	-0-
Other Comments/Notables	Moderna 2/24/21 & 3/24/21

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Data Collection

Baseline
demographics

Medications

Pharmacist
recommendations

Recommendation
acceptance

HF admission
information

Labs

Monthly Follow-ups

- Tracking recommendations response rate
- Updates for heart failure related symptoms
 - Monthly physical notes
 - Progress reports
 - Labs
- Input data into main data collection tool

Data Collection Tool

Initial recommendation submission date	Follow up recommendation submission date	Resident	DOB	Gender	Age	HF Diagnosis	HF GDMT on profile Y=1, N=0	Appropriate dose of HF GDMT Y=1, N=0	Previous HF Admission number	Labs to indicate HF exacerbations present Y=1, N=0	Ejection Fraction
28-Sep				F	70	combined syst. And dias. HF	1	0	0	Progress note + edema	
22-Jan				F	71	Unspecified HF	1	0			
22-Jan				F	67	Unspecified HF	1	0			
22-Jan				F	88	systolic HF, hypertensive heart disease with heart failure	1	0	0		15 - 20% (hosp note from 12/15/21)
22-Jan				F	86	Systolic HF	0	0	1		
30-Jan				F	77	Systolic HF	0	0	0		20-25% (dc summary)
19-Feb				M	81	unspecified heart failure	1	0			
19-Feb				F	84	systolic HF, and unspecified HF	0	0	0		
20-Feb				F	73	unspecified heart failure	0	0	0	1 (elevated troponin and BNP per hospital admis note from 1/24/22)	35-40%
20-Feb				F	78	unspecified heart failure	0	0	1	0	

Data Collection Tool

Number of HF therapy recommendations	therapy recommendation acceptance	Types of recommendations	Accepted Y=1, N=0	Declined with Rationale	Declined without Rationale	Pending Y=1,N=0
1		switch tartrate to succinate				
1	1	Switch Met T. to Met S.	1			0
1		Initiate metop. Succin.				1
1		Initiate Met S.				1
1	1	Switch Met T. to Met S.	1			0
1		initiate Lisinopril				1
1		Initiate metop. Succin.				

Results

Projected Sample Size

Target of 52 patients

$N = 52$

Confidence Level = 80%

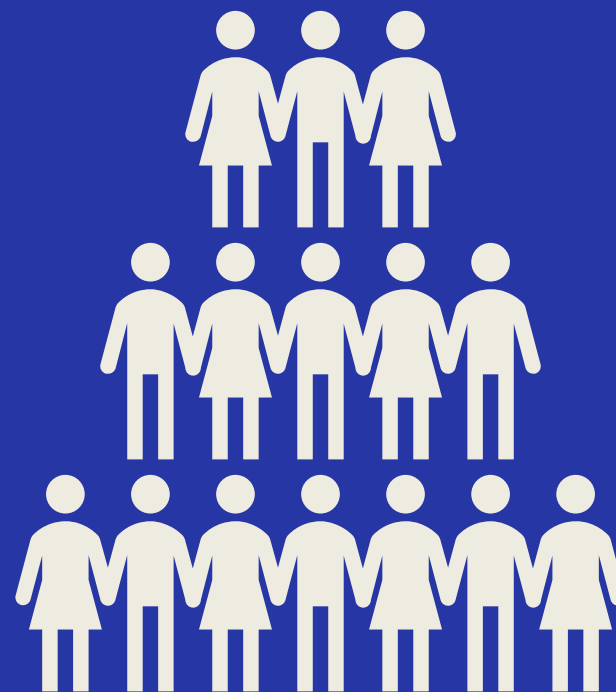
Alpha Level = 0.05



Research is in
progress



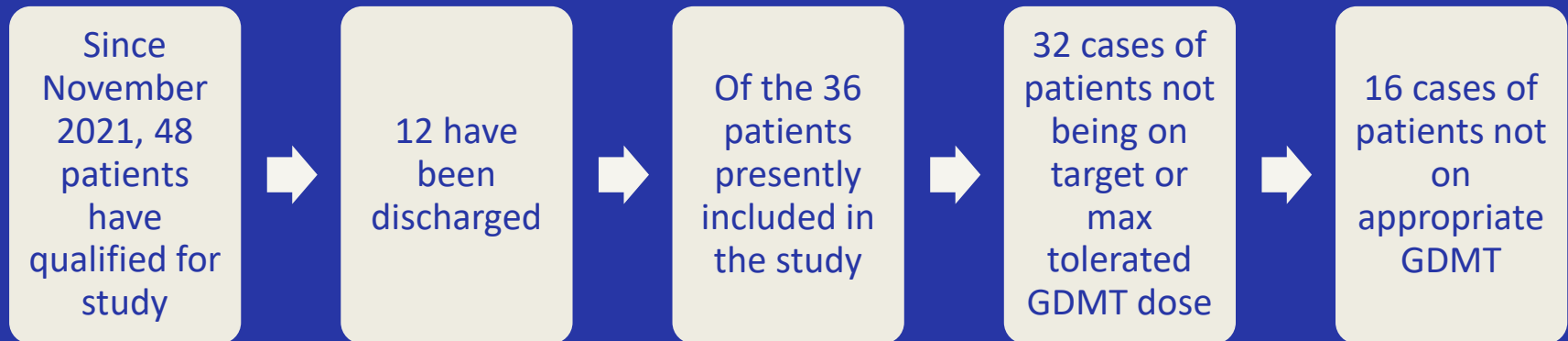
Data collection to
conclude in April



36 patients currently included in the
study

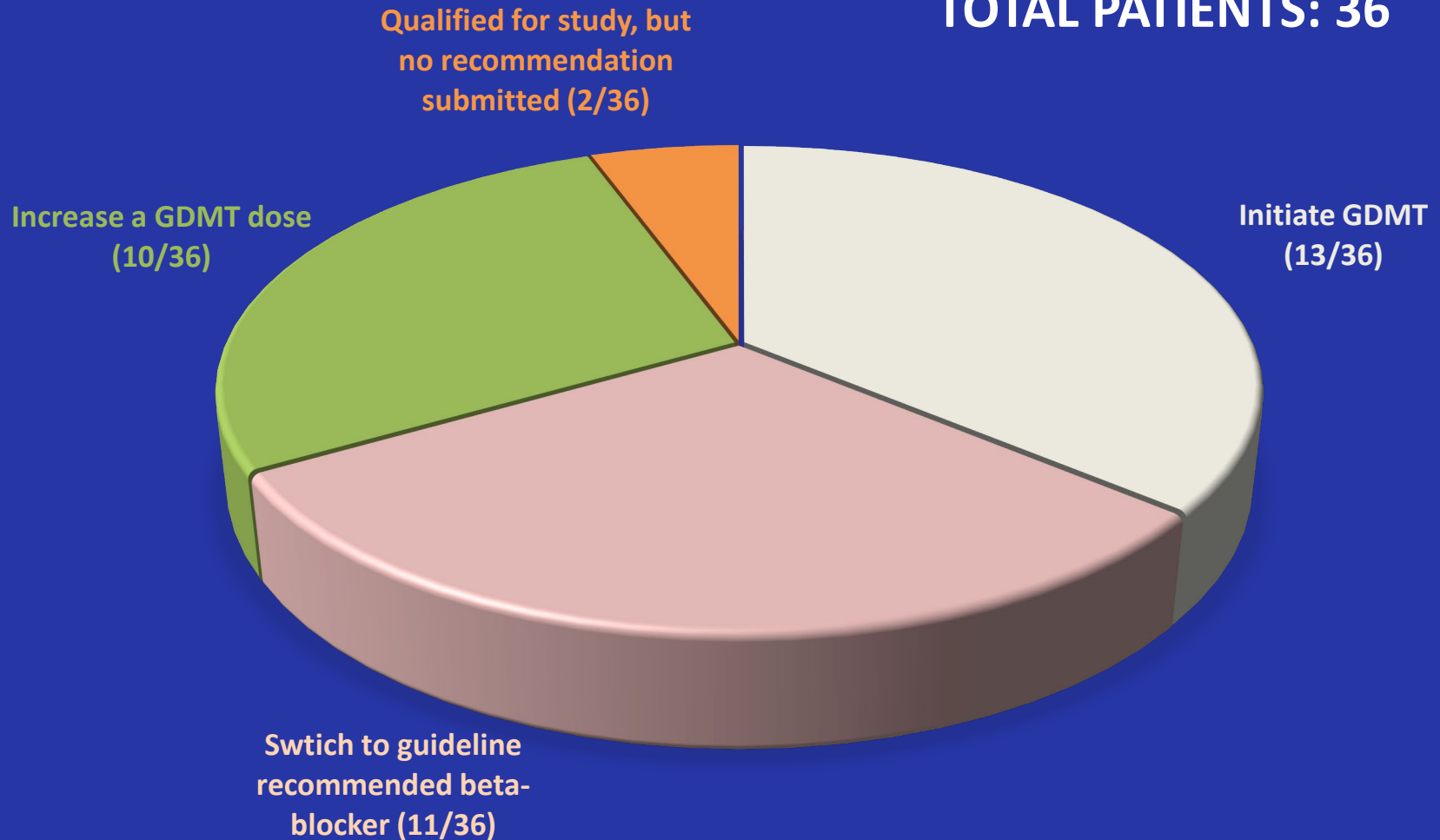


Skilled Nursing Heart Failure Residence



Types of Recommendations

TOTAL PATIENTS: 36



Study Limitations



Lack of consistent medical documentations



Loss of patient in the study for non-heart failure related reasons



Pharmacist recommendations are not assessed and/or updated in a timely manner

Discussion



Patients currently included in study have not had any worsening of heart failure symptoms or reports of heart failure exacerbation



Patient initially included in the study but have since been discharged were for reasons unrelated to heart failure status



Full impact of study can not be determined considering data collection is in progress and number needed to meet power has not been accomplished (n = 52)

Future Improvement for Study

- Coordinate with LTC facilities to develop a protocol to assess patients with active heart failure diagnosis
 - Consistency in lab draw, monthly physical monitoring documentation
 - Timely response and update for pharmacist recommendations
- Increase involvement amongst other disciplines of healthcare to enhance therapeutic communication plans and patient care

Key Points

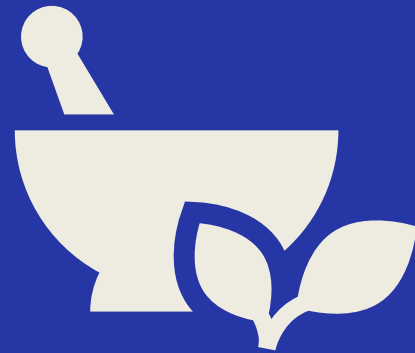
- Lack of literature regarding patients in skilled nursing setting with heart failure
- No studies assessing the impact of consultant pharmacist led heart failure management
- Approximately 85% of heart failure cases occur in patient >65 years old
- HF patients have the highest 30-day all cause readmission rates for Medicare patients
- Many patients in skilled nursing setting are not receiving optimal care based on current heart failure guideline
 - Not on appropriate heart failure GDMT and/or not at target dose

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Need More Information?

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Patient Confidence and Trends in Self-Care Treatment

Bailee Wood, Mackenzie Deitsch, Emma Pruzan,
Danielle Schieber, Lindsey Dahlquist, and Alyssa
Pearce

PharmD Candidates Class of 2023
University of Findlay



OPA Annual Conference & Trade Show
Practice Strategies for Changing Times

April 1-3, 2022



Disclosure Statement

- Bailee Wood, Mackenzie Deitsch, Emma Pruzan, Danielle Schieber, Lindsey Dahlquist, and Alyssa Pearce have no relevant financial relationship(s) with ineligible companies to disclose.

and

- None of the planners for this activity have relevant financial relationships with ineligible companies to disclose.

Learning Objectives

At the completion of this activity, the participant will be able to:

1. Compare individuals' confidence in self-selecting an over-the-counter (OTC) product to approaching a pharmacist for advice
2. Identify trends in supplement use during the COVID-19 pandemic, influencing factors, and reason for use
3. Identify the major influencing factors when selecting an OTC product

Background / Objective

300,000+ FDA approved OTC products²

Pharmacists receive formalized training on selection process

- Past Research Lacks^{3,4}:
 - A link between patient-perceived knowledge of and confidence in selection of OTC products
 - An evaluation of barriers to seeking pharmacist assistance

Study Aims:

1. Self-perceived confidence of OTC drug knowledge
2. Understanding of the pharmacist's role in self-treatment
3. Willingness to seek help from a pharmacist
4. Barriers to approaching a pharmacist

Methods

Data Collection

- November 2021
- 3 locations in Findlay, Ohio
- 14-quesont, Likert scale survey
- Must be 18+ YO

Data Analysis

- Microsoft Excel
- Kruskal-Wallis test
 - Evaluate differences within the data
 - $\alpha = 0.05$

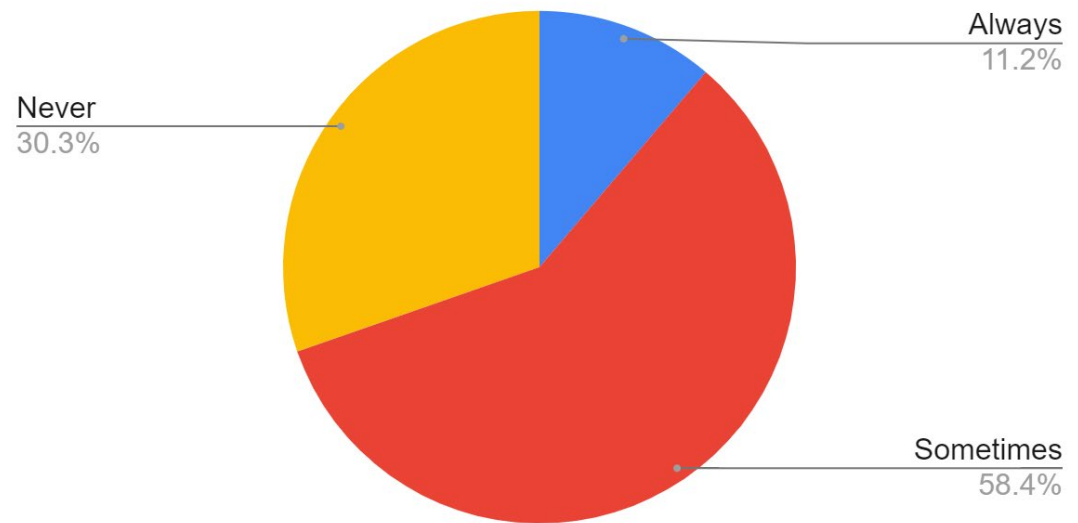
Results

N = 94 individuals

- 87% Caucasian
- 67% Female
- 52% 18-24 YO
- 69% No Comorbidities

88% agreed that pharmacists are knowledgeable resources on OTC medications

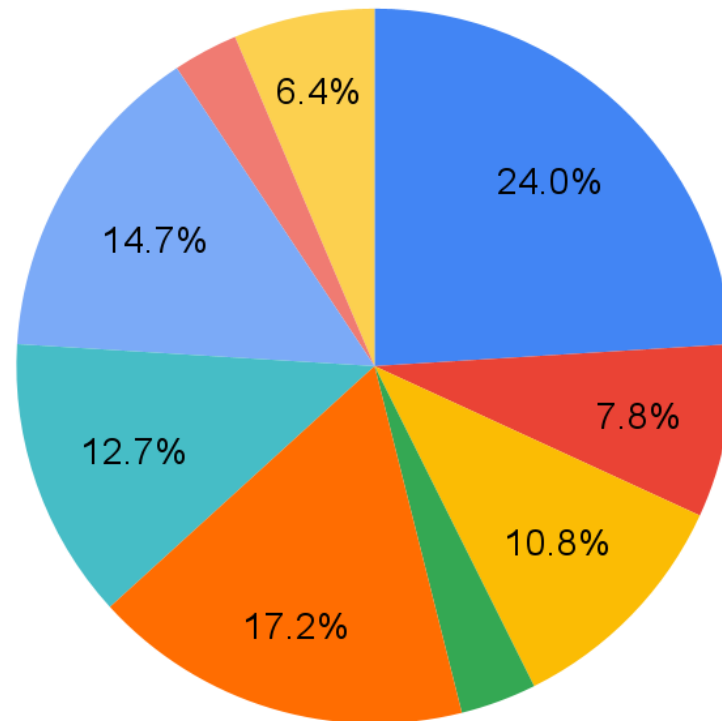
Frequency of Approaching Pharmacists
for Assistance on Selecting an OTC



Why a Pharmacist Was Not Approached

When Selecting an OTC Products

- I didn't have any questions
- Pharmacist appeared too busy
- Didn't have time to ask
- Embarrassed or felt uncomfortable
- Asked a friend/family member
- Asked my healthcare provider
- Found my answer online
- I am a healthcare provider
- I routinely ask my pharmacist



Results: Knowledge and Confidence

No difference was found when comparing patient-perceived knowledge of OTCs vs confidence selecting OTCs for themselves ($p = 0.8021$)

A difference was found when comparing patient-perceived knowledge of OTCs vs confidence selecting OTCs for others ($p < 0.001$)

Conclusion

- Individuals felt confident in their understanding of OTC products and selecting a product for themselves, but not in selecting a product for someone else.
- Patients consider pharmacists knowledgeable OTC resources but are often not approached for advice.

Background / Objective

Vitamins and supplements gained popularity throughout the COVID-19 pandemic for protection and treatment against SARS-COV-2

There is insufficient data to recommend for or against the use of supplements in the prevention or treatment of COVID-19 as well as influencing factors that may have contributed to use¹

Study Aims:

1. Evaluate trends in vitamin and supplement use prior to and during the pandemic
2. Identify influencing factors that may have contributed to use
3. Identify reasons for use

Methods

Data Collection

- October-December 2021
- 12-question survey
- Community pharmacy located in mid-Ohio
- Must be 18+ YO

Data Analysis

- Microsoft Excel

Results

60% female

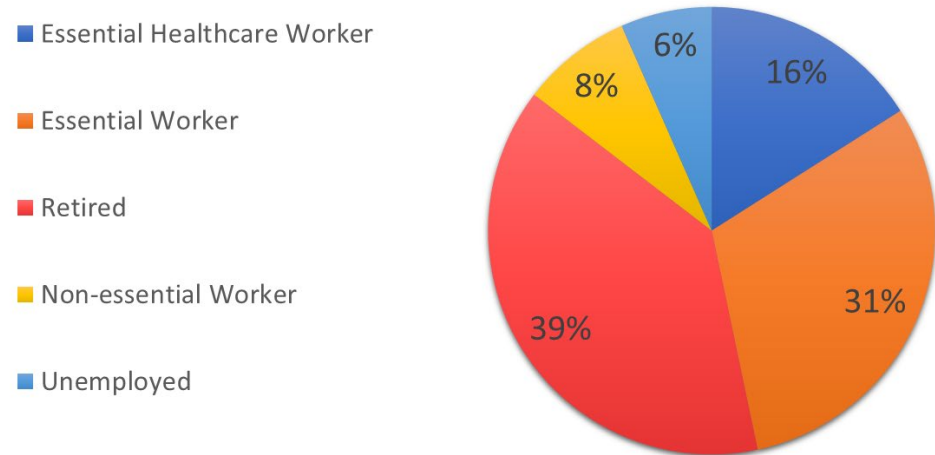
98.7% Caucasian

42.7% aged 65 years or older

48% with at least one comorbidity:

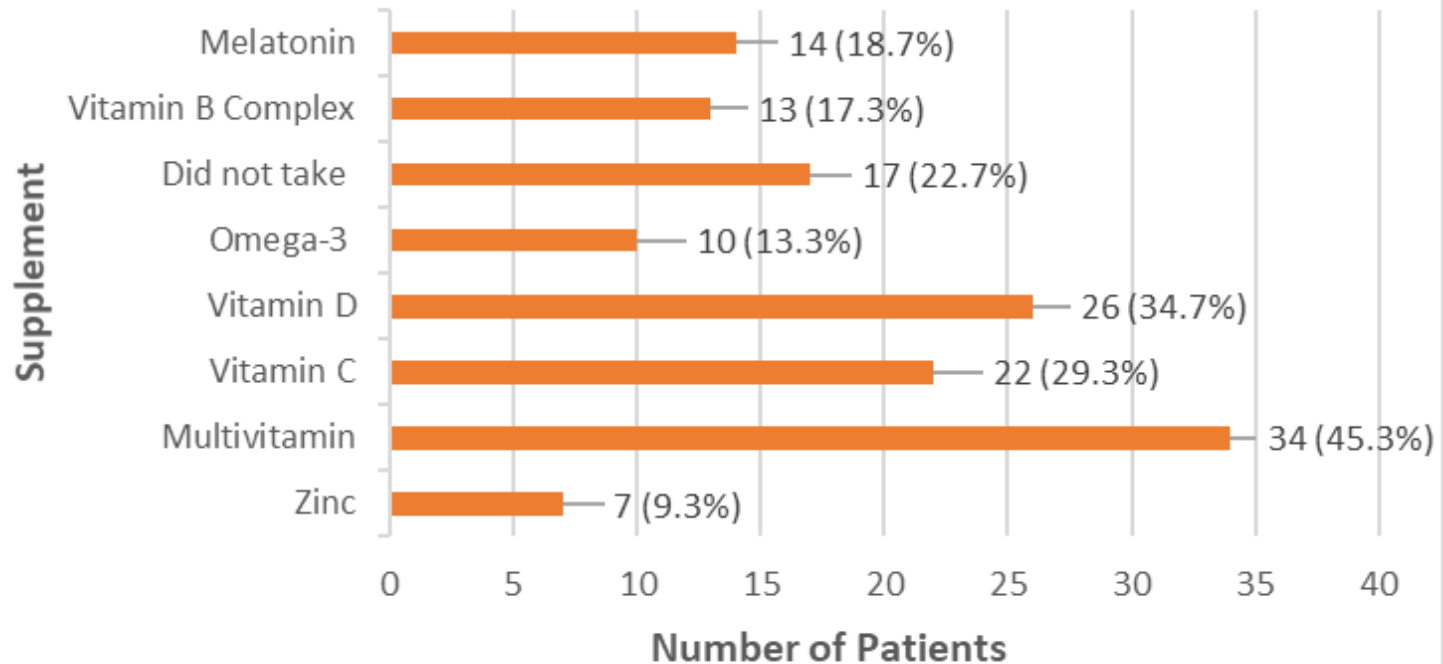
- Heart disease (16%)
- Obesity (14.7%)
- Lung disease (12%)

Employment Status During the Pandemic



Supplement Use Prior to the Pandemic

(Select all that Apply)



Results

77.3% took supplements **prior**

11.7% increase in use **during** the pandemic

Results

Greatest increase in use:

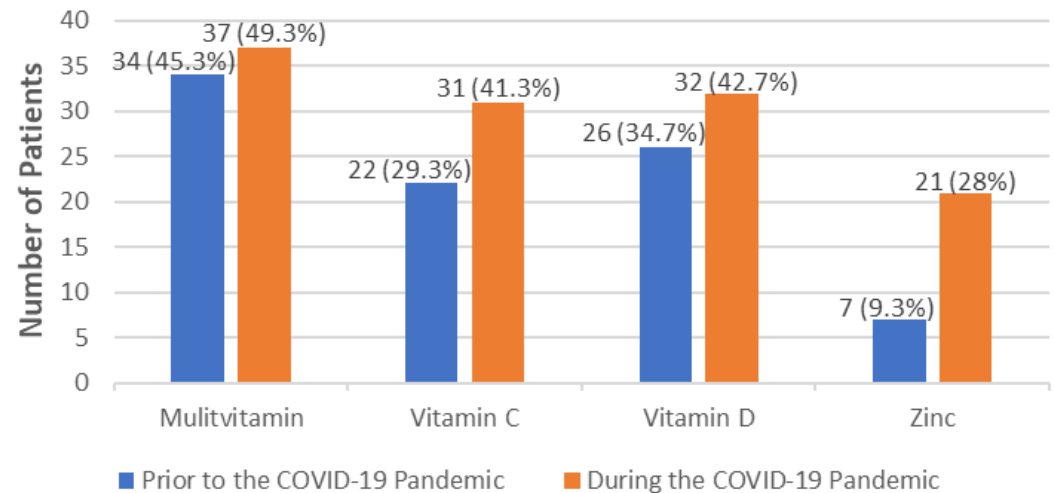
- Zinc (18.7%)
- Vitamin C (12%)

Retired individuals had greatest increase in zinc use (5.3%)

Essential workers had greatest increase in Vitamin C use (4%)

Trends in Supplement Use

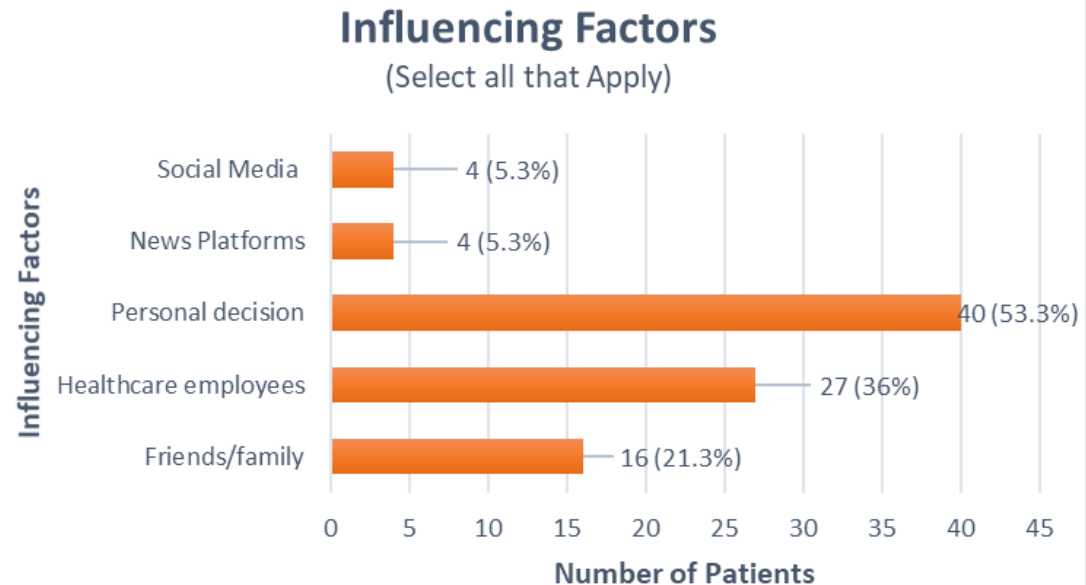
(Select all that Apply)



Results

Promotion of overall health and well-being (84%) was the most common reason for use

- Prevention of COVID-19 (16%)
- Treatment of COVID-19 (2.7%)



Conclusion

- Most utilized → multivitamins
- Influencing factor → personal choice
- Intention of use → promote overall health and well-being and prevention of COVID-19

Overall Conclusions

OTC Confidence Study

- Pharmacists are not regularly approached for OTC assistance
- Individuals feel confident selecting OTCs for themselves

COVID-19 Supplement Study

- Personal decisions and healthcare providers influenced vitamin and supplement use
- Use was intended to promote overall health and well-being and to prevent COVID-19

Overall: Personal decisions are a major influence in selecting OTC products

Future Research

- Evaluate appropriateness of individuals' OTC selections
- Test effectiveness of different interventions to improve accessibility of pharmacists
- Larger studies that include greater variations in population and location

CE Question

Based on the studies conducted, what is a common finding amongst individuals who take OTC/vitamins based on personal choice?

- a. They are unaware of the products available
- b. They feel confident in selecting products for themselves
- c. They regularly approach a pharmacist and ask for advice

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Need More Information?

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Comparison of Quality of Life Between Men and Women With Chronic Liver Diseases Using Chronic Liver Disease Questionnaire: A Meta-Analysis.

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University of Cincinnati



OPA Annual Conference & Trade Show
Practice Strategies for Changing Times

April 1-3, 2022



Disclosure Statement

- Marwan Alrasheed has no relevant financial relationship with ineligible companies to disclose.
- None of the planners for this activity have relevant financial relationships with ineligible companies to disclose.

Learning Objectives

At the completion of this activity, the participant will be able to:

1. Differentiate between the quality of life (QoL) of men and women with chronic liver disease (CLD).
2. Identify different questionnaires used to measure QoL.
3. Understand different types of search strategies to conduct a meta-analysis.

Background

- CLDs have a high prevalence in adults globally.
- They have been linked with low QoL.
- QoL Questionnaires:
 - Chronic Liver Disease Questionnaire (CLDQ).
 - Short Form 36 (SF36)
 - The World Health Organization Quality of Life (WHOQOL)

Background

- Rational:
 - With high prevalence and uncertainty of specific symptoms, it is important to measure the QoL in CLD patients.
 - Understanding QoL is important toward enhancing the healthcare in a particular patients.

Objective

- To measure the difference between QoL of men and women who are having CLD using the CLDQ.

Methods

- Search strategy:
 - English language publications and abstracts on PubMed, Google Scholar, and EMBASE through October 2020.
 - Forward and backward citation searching.
- Inclusion and exclusion criteria:
 - Any study measured the QoL using CLDQ on CLD patients was included.
 - Any study did not report the difference in QoL between males and females was excluded.

Methods

- Data variables:



Methods

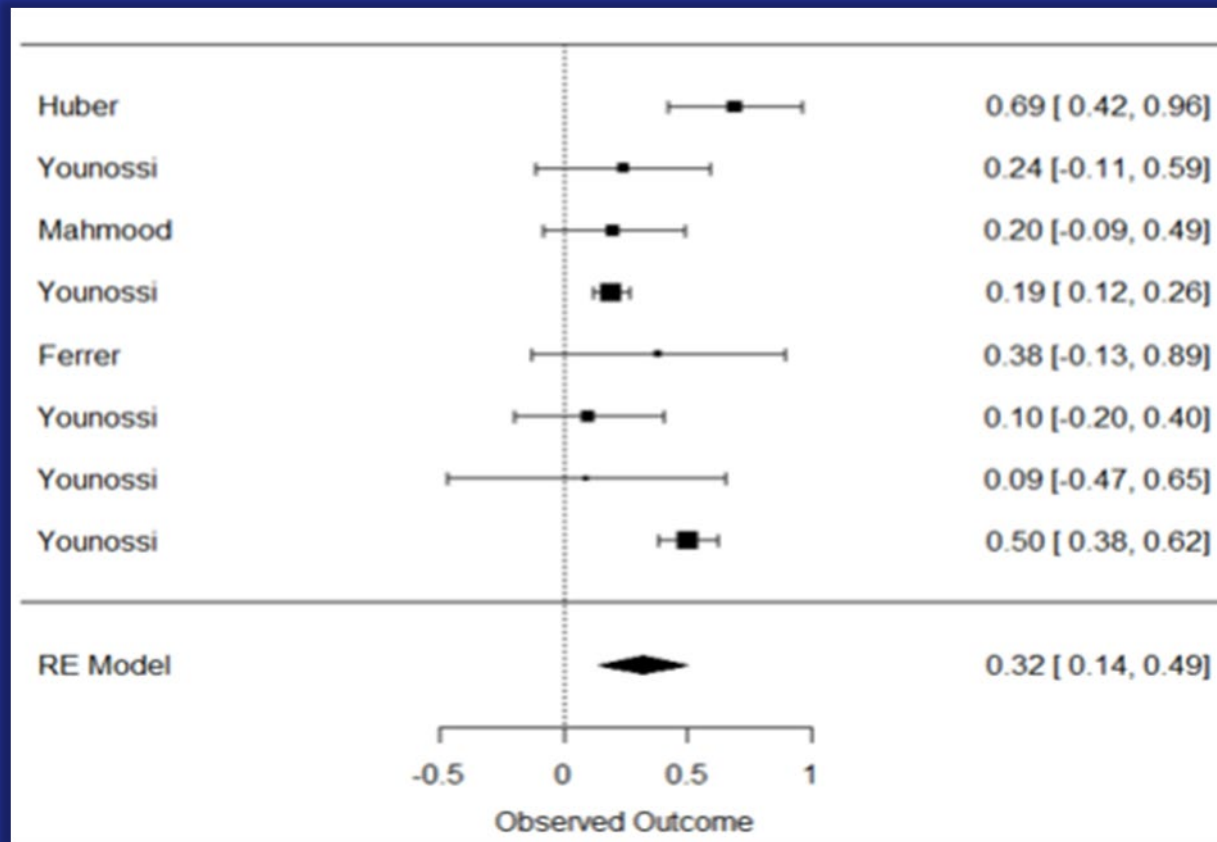
- Statistical analysis:
 - We calculated the variance of the mean difference between males and females for each CLDQ domain.
 - A random-effects model was performed in this meta-analysis.
 - Effect sizes were reported as the variance of the mean difference and the mean difference values.
 - Sensitivity analysis was performed to detect any study that had a high impact on the overall results.

Results

- We analyzed data from 8 studies with 6846 total number of patients.
- Women showed a significant lower QoL than men in 5 domains of the CLDQ.

Results

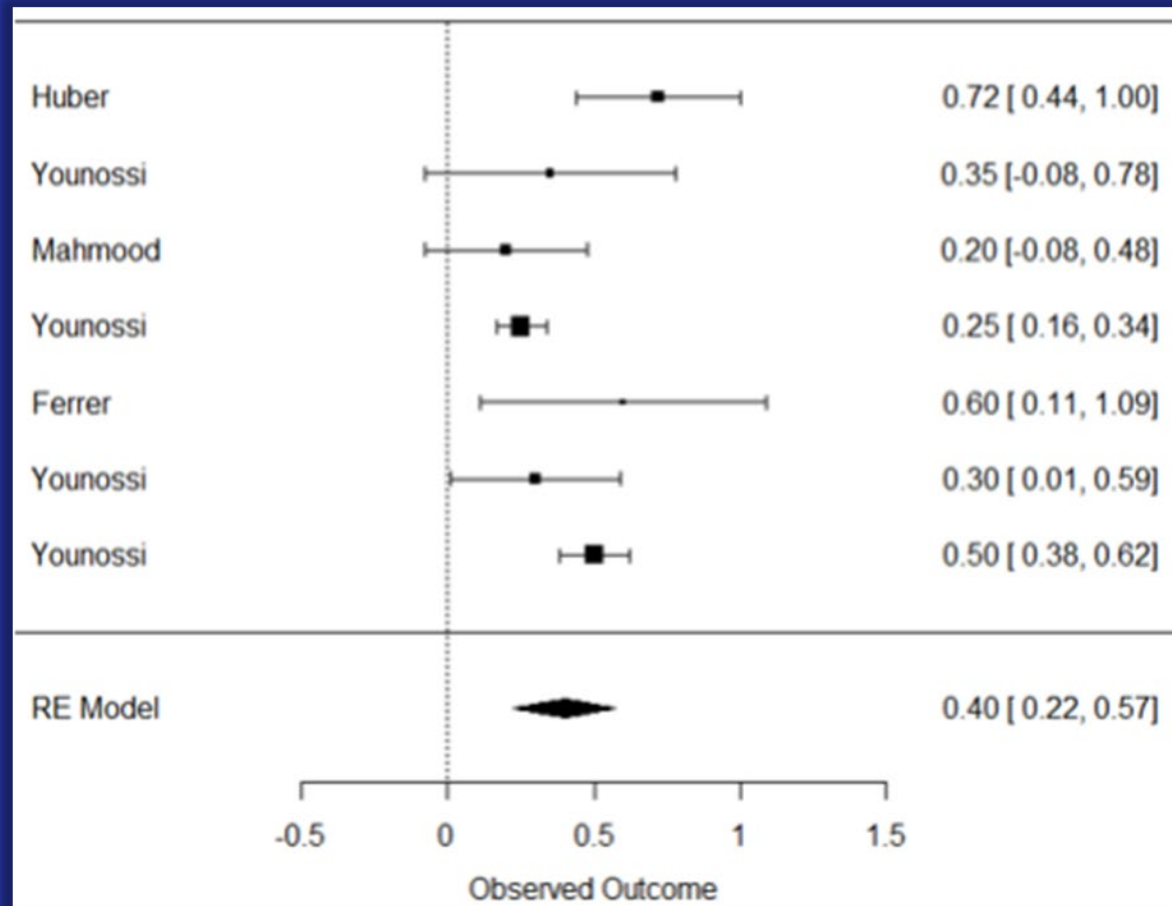
CLDQ overall score



I^2 : 74.01%

Results

Systemic symptoms:



I^2 : 68.56%

Discussion and Conclusions

- In this study, we found that women have a worse QoL than men in CLD.
- A significant difference in QoL between males and females was observed in all domains of CLDQ except fatigue.
- Previous studies suggested that CLD have more burden on female patients.

Discussion and Conclusions

- Evaluating QoL is inherently subjected to recall bias ,response shift, and different standard of living .
- We recommend to future researchers to investigate the reason behind the high burden of CLD on female patients using different study designs and tools.

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Need More Information?

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