The Transition of Self-Care in College Students with Asthma - the Development of an Asthma App Lurie Children's Hospital **Nursing Research Conference** October 23, 2019

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FUNDING FOR THIS STUDY WAS PROVIDED BY THE PALMER RESEARCH AWARD AND THE SWAG (SCHOLARSHIP WORKING ACTIVITY GROUP) GRANT

# COLLEGE STUDENTS WITH ASTHMA

- An important task that must be accomplished during early adulthood/emerging adulthood is taking responsibility for one's own health care.
- College students with asthma (CSA) were less likely to have a usual source of care or primary health care (p. = .001), less likely to have a prescription for a rescue medication (p = .02) and more likely to visit the ED in the last year (p = .003) than older adolescents.

(IOM, Improving the Health, Safety and Well Being of Youth, 2013).

# TRANSITION TO SELF-CARE IN COLLEGE STUDENTS WITH ASTHMA

- In 2014, a grounded theory design was used to conceptualize the basic social process of how college students transition from home-based asthma management to independent self-care management (Hogan & Velsor-Friedrich, 2016).
- The student participants ranged in age from 18-22 years. Interviews were audio taped, data were transcribed verbatim and analyzed using constant comparison methods.

# THE BEING UNPREPARED THEORY

The **Being Unprepared Theory** emerged as the basic social process used by adolescents transitioning from home-based management of their asthma to managing their asthma in college.

The process is characterized by five key categories and associated subcategories. Participants described (a) Relying on Others, primarily parents, to manage their asthma while in high school.

This reliance on others resulted in CSA's (b) Lacking Preparation for Self-Management in College. They were relatively unprepared for (c) Dealing with the Unexpected Stressors Associated with Starting College or for (d) Managing Severe Episodes.

### RELYING ON OTHERS

• Conceptual definition: Participants described becoming more independent in high school, however, they further described relying on their parents, primarily mothers for day-to day management responsibilities including keeping track of allergy medications, inhaler refills, reminders to carry inhalers, doing treatments, and knowing when to seek professional help.

### RELYING ON OTHERS

### **Parental Involvement**

"I was solely kind of in control of it. I just basically, my parents filled prescriptions and stuff...I was kind of handling it on my own a little bit."

"So, she [mother] was more like the administrative part of my chronic illness."

### **Obtaining Help from Others**

"Our basketball manager, yeah would take care of it [inhaler], make sure it was ready."

"We [friend] would swap inhalers...which I'm sure isn't the best of ideas."

# LACKING PREPARATION FOR SELF-MANAGEMENT IN COLLEGE

• Conceptual definition: Participants did not recall receiving information from parents or health care professionals about managing their asthma independently in college.

• Many students were unprepared for managing their asthma and they did not have an action plan if they experienced a serious episode.

# LACKING PREPARATION FOR SELF-MANAGEMENT IN COLLEGE

### **Continuing Parental Assistance in College**

"If I needed medication right now, I'm not sure. I would probably call mom and have her figure it out, you, know."

"Refills? I have no idea, like I'm, I don't know. I would tell mom she would order it. I don't know how she does it though."

"I would not reorder my prescriptions. I have other fish to fry...Should I be more aware or should I like be more attentive to my asthma?"

### Not Informing others about it

"I don"t think they, [friends] would know what to do [if I needed help.]

 $^{\prime}$  "I don't know if I am supposed to tell people I have an inhaler, I never though about it."

# MANAGING SEVERE EPISODES

**Conceptual definition:** Participants described symptoms of severe episodes that frightened them.

However, most of them did not have a thought out plan for seeking help, especially if symptoms occurred in the evening or night. They were not certain where urgent care or hospitals were located in the area. Many students were not sure of the name of their medications to inform healthcare professionals if they needed medical care.

### MANAGING SEVERE EPISODES

### **Experiencing Severe Symptoms**

- "I was literally like I could not get breath into me."
- "I got off the treadmill, Oh my God, what am I going to do? I can't breathe."
- "I just couldn't breath. It was so bad that I started tearing up and fell to the ground."

### Lacking an Effective Action Plan

- "I'm not sure were the closest hospital is to be honest with you."
- "I have no idea, I guess call campus safety or my mom.
- "Call 911 or something. You know, asthma attacks are a real thing, people have died from them".

# BECOMING BETTER PREPARED

• Conceptual definition: Participants recalled getting an information packet about health care resources during orientation but couldn't recall the information or what happened to the packets. Most students remembered hearing about the Wellness Center on campus but couldn't remember where it was or whether they treated asthma.

Participants concluded that Becoming Better Prepared for their own self-management was necessary. In recognition of their lack of preparation for college they offered specific advise for incoming CSA about being preemptive about self-management in college.

# BECOMING BETTER PREPARED

- Having an action plan for severe episodes
- "[Knowing about] student services with disabilities... hospital numbers, urgent care that is close."
- "Have multiple inhalers and an insurance card"
- "An app on your phone, you're always gonna have that with you."

# WHERE DO WE GO FROM HERE?

- Students acknowledged that they were relatively unprepared for managing their asthma independently and that they would have benefited from having specific information about encountering new stressors, especially incoming students not familiar with harsh winters and big city environmental stressors.
- The results of this study lead us to consider the use of or the development of an asthma app to help students locate local asthma health care services and basic asthma education information.

# DO WE HAVE TO REINVENT THE WHEEL?



# REVIEW AND EVALUATION OF EXISTING ASTHMA APPS

- Review of existing apps (pros and cons)
- Goal identification (determining our specific goals for the app)
- Maintaining balance (at this point not working in tandem with a direct health care provider)

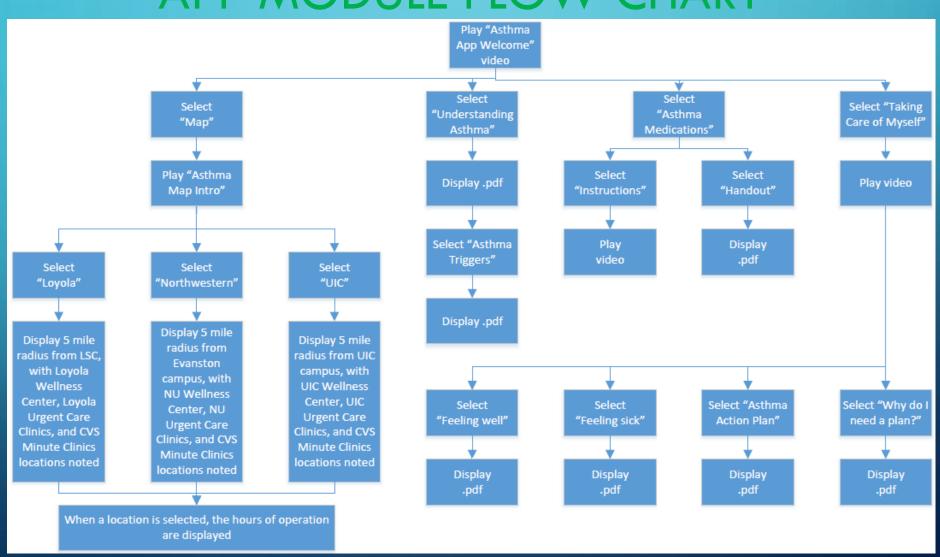
# YES WE DO!



### APP DEVELOPMENT

- App modules were developed by Biomedical Engineering (BME) students
- App module development is part of ENGR 341L Medical Device Laboratory
- BME students are being trained to develop and test high quality medical device software
- Engineering Science department annually asks the Niehoff School of Nursing for nursing app projects

# APP MODULE FLOW CHART



# UNDERSTANDING ASTHMA AND ASTHMA TRIGGERS

- What is asthma?
- What causes asthma?
- What are asthma triggers?
- How can I identify my asthma triggers?
- How can I manage my asthma triggers?

# **ASTHMA MEDICATIONS**

- Component of Asthma Self-Management Education
  - Understanding difference between rescue and controller meds
    - Being able to identify each
    - When to use which
    - As a measure of asthma control
- Importance of using a spacer

# HOW TO TAKE CARE OF YOURSELF

- Aspects of care not intuitive to young adults
  - Filling a prescription
  - Use of Asthma Action Plan
  - Appropriate level of care needed
  - Daily care vs. sick care

# SAMPLE ANIMATION



## CASE STUDY

• An undergraduate engineering student with asthma viewed the app and gave the team feedback.

• Based on that feedback, some changes were made to the app.

# **NEXT STEPS**

- Conducting a pilot study of the app this fall.
- Have received IRB approval
- Beginning recruitment
- Participants must have an iphone as app is on itunes

### **Asthma** Study



#### - WHO

College students with a diagnosis of asthma

#### - WHAT

Use an asthma app and participate in 2 interviews

#### • GET

A \$25 gift card for your time

#### . HOW

Contact Barbara Velsor-Friedrich, PhD, RN bvelsor@luc.edu 773.508.2892 A group of nurse researchers have developed an iPhone app to provide college students with vital information for managing their asthma. The app includes:

- Locations that offer asthma care, such as the campus Wellness Center, nearby Urgent Care Centers and Emergency Rooms.
- Strategies for managing your asthma
- Tips on keeping yourself healthy
- Importance of using an Asthma Action Plan

Researchers are recruiting undergraduate college students (18 - 24 years) to pilot use of an asthma app for 30 days and answer questions on its usability and function. Participants must have an iPhone.

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# THANK YOU QUESTIONS?