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Voluntary Refusal of the Seasonal Influenza Vaccine Among College Students

Paul James Abraham

Eastern Illinois University, 2020

Abstract

The purpose of this study is to examine student's knowledge, attitudes, and behaviors towards vaccination, with a particular focus on the seasonal influenza vaccine. This study will examine students' perceived benefits and risks surrounding the influenza vaccine with the goal of providing information that may assist in the education of future students and the community as a whole. A survey of 23 questions was distributed to 199 full-time undergraduate students, between 18 and 26, at a small midwestern university. The survey contained open questions, closed questions, Likert questions, and yes or no questions. Data were collected through Qualtrics and analyzed with Excel. Of the participating students, 61% had concerns regarding the seasonal influenza vaccine with the largest concerns being contracting the influenza virus from the vaccine (28%) and side effects of the vaccine (33%). More than 90% of the respondents in each answer category of concern regarding the seasonal influenza vaccine had health insurance for at least 4 of the past 5 years, and over 90% of respondents who expressed concerns saw a healthcare professional at least once a year. The overlap between students who regularly see a healthcare provider, and students who have serious concerns regarding the seasonal influenza vaccine, shows that a significant portion of students would benefit from further education regarding the seasonal influenza vaccine, especially from a trusted healthcare professional.

CHAPTER 1

Introduction

The seasonal influenza virus is responsible for thousands of deaths annually, and the majority of these deaths could be prevented through vaccination, but still, only 43% of adults in the United States are vaccinated for the seasonal influenza virus, and young adults are even less likely to vaccinate than the average adult (Williams et al., 2016). A significant cause of the lack of uptake of the seasonal influenza vaccine is a lack of credible information that would usually come from healthcare providers, oftentimes because of a lack of health insurance (Takayama et al., 2012). This lack of information, among other factors, has led to a culture of anti-vax rhetoric that has influenced many of the adults who choose to not receive the seasonal influenza vaccine (Bricker & Justice, 2019). Understanding the reach of this misinformation within our community is vital in health educators' efforts of reaching the mass vaccination goal of 70% (Office of Disease Prevention and Health Promotion, 2020). The purpose of this study is to assess student attitudes and beliefs with regard to the seasonal influenza vaccine.

Identifying specific concerns of those unwilling to receive the seasonal influenza vaccine allows health educators to address these educational gaps in precise ways, and not only combat misinformation, but also improve general knowledge concerning vaccination. Trusted healthcare professionals providing information directly to adults is one of the best and most successful forms of vaccination education (Loubet et al., 2015). Because of changes made within our healthcare system, young adults are more likely to have health insurance coverage than ever, giving them more access to healthcare professionals who can educate them regarding vaccines, with the goal of increasing positive attitudes and therefore increasing uptake of the seasonal influenza vaccine (Levy, 2019). Improving attitudes regarding the seasonal influenza vaccine is

paramount in the effort towards increasing uptake of the vaccine, and decreasing the damage done annually by the influenza virus.

Statement of the Problem

Uptake of the seasonal influenza vaccine in 2014 was 43.2 percent among adults (Williams et al., 2016). This is only a fraction of the Americans who are medically able to receive the vaccine, and it is significantly lower than the Healthy People 2020 goal of 70% (Office of Disease Prevention and Health Promotion, 2020). While many studies have been done concerning a lack of uptake of the seasonal influenza vaccine, the majority of them focused on vulnerable age groups such as those over 65 years old and lumped adults 18 – 64 into one group, resulting in little information regarding college-aged adults, specifically those between the ages of 18 and 26. Understanding the attitudes and beliefs of students concerning the seasonal influenza vaccine provides an opportunity to educate students about the specific concerns they have regarding vaccination.

Purpose of the Study

The purpose of this study is to examine student's knowledge, attitudes, and behaviors towards vaccination, with a particular focus on the seasonal influenza vaccine. This study will examine students' perceived benefits and risks surrounding the influenza vaccine with the goal of providing information that may assist in the education of future students and the community as a whole.

Research Questions

There were 3 research questions for this study:

What perceived dangers do students age 18 through 26 experience when given the decision to receive the seasonal influenza vaccine?

How important do students age 18 through 26 consider the seasonal influenza vaccine to be within our community?

In the past 5 years, what level of access did students have to the seasonal influenza vaccine, and how often did they receive it?

Sample

Participants in the research study were full-time undergraduate students (12 or more credit hours) at a small midwestern university between the ages of 18 and 26, and the mean age for the sample was 20.7 years old. Of the 199 students who took part in the survey, 68.3% (n=136) identified as female, 31.2% (n=62) identified as male, and 0.5% (n=1) identified in a way other than male or female. The difference in female to male students in this study is significant, but it represents the student population of the university well, with the population of full-time undergraduate women (n=2134, 60%) approximately 1.5 times that of men (n=1443, 40%) on this campus (Eastern Illinois University, 2020). Because of university policy requiring health insurance and university insurance covering enrolled students, this research study assumes all participants all currently insured.

Data Collection

The data collected by this research study were mostly surrounding the knowledge, attitudes, and behaviors of college students pertaining to the seasonal influenza vaccine. Participants were between the ages of 18 and 26 and were full-time undergraduate students at a small midwestern university. Participants were asked to participate in an anonymous 23 question survey for a research study within the Public Health department. Participants were given a recruitment form (Appendix B) explaining the research study and survey with a QR code and a

text back service number and code that linked them directly to the survey on their electronic device. Participants were made aware of their rights pertaining to this research study and survey through a consent form at the beginning of the survey process, and all participants voluntarily consented to participate before accessing any survey content (Appendix A). Participants who did not accept the consent form were forwarded out of the survey process. Limitations of this survey come largely in the form of low participation rates and a lack of demographic data of the participants. Of 3577 full-time undergraduate students, 199 students participated in this research study (Eastern Illinois University, 2020). Of the participants 136 were female, 62 were male, and 1 student identified as neither male nor female, and no racial or ethnic data was collected about the participants within this study. Because of the lack of information pertaining to specific demographics, and the small sample size of the research study, results may not be representative of the larger campus population. Within this research study significantly more participants identified as female (n=136, 68.3%) than male (n=62, 31.2%) and students identifying as neither male or female (n=1, 0.5%). This difference in gender representation can also be seen within the university as a whole with students identifying as female (n=2134, 60%) being 1.5 times as common as those identifying as male (n=1443, 40%), but the difference is significantly more prominent in this research study (Eastern Illinois University, 2020).

Limitations

Within this study there are multiple limitations that could affect the accuracy of the results:

- 1.) The participants within this study were a convenience sample of only 199 students leaving room for significantly more reliable results if increased.

- 2.) Because of the singular location of the participants, the sample was not geographically diverse, and therefore may not be representative of the larger population.
- 3.) No racial demographic information was collected from the participants, and therefore and disparities based on race were not discovered.

Definition of Terms

For the purpose of this literature review, the terms referred to in this study are defined as follows:

Anti-vax: anti-vaccination, an attitude of opposition towards vaccination

Vaccine: A suspension of live (usually attenuated) or inactivated microorganisms (e.g. bacteria or viruses) or fractions thereof administered to induce immunity and prevent infectious diseases and their sequelae (Centers for Disease Control and Prevention, 2020).

Vaccination: The physical act of administering any vaccine or toxoid (Centers for Disease Control and Prevention, 2020).

Influenza: A highly contagious and often epidemic viral disease characterized by fever, prostration, muscular aches and pains, and respiratory passage inflammation (Centers for Disease Control and Prevention, 2020).

Herd immunity: A situation in which a sufficient proportion of a population is immune to an infectious disease (through vaccination and/or prior illness) to make its spread from person to person unlikely. Even individuals not vaccinated (such as newborns and those with chronic illnesses) are offered some protection because the disease has little opportunity to spread within the community. Also known as herd immunity (Centers for Disease Control and Prevention, 2020).

CHAPTER 2

REVIEW OF LITERATURE

Statement of the Problem

Uptake of the seasonal influenza vaccine in 2014 was 43.2 percent among adults (Williams et al., 2016). This is only a fraction of the Americans who are medically able to receive the vaccine, and it is significantly lower than the Healthy People 2020 goal of 70% (Office of Disease Prevention and Health Promotion, 2020). While many studies have been done concerning a lack of uptake of the seasonal influenza vaccine, the majority of them focused on vulnerable age groups such as those over 65 years old and lumped adults 18 – 64 into one group, resulting in little information regarding college-aged adults, specifically those between the ages of 18 and 26. Understanding the attitudes and beliefs of students concerning the seasonal influenza vaccine provides an opportunity to educate students about the specific concerns they have regarding vaccination.

Introduction

Seasonal influenza is largely preventable through vaccination, but it is still responsible for approximately 36,000 deaths every year in the United States (Linn et al., 2010). Seasonal influenza vaccination rates among adults in the United States were 43.2 percent in 2014, and within that group of vaccinated individuals, there is a significant age disparity with younger adults receiving fewer vaccinations on average than their older counterparts (Williams et al., 2016). Most studies in the past have predominantly been focused on the 65 years or older groups because they are at higher risk for contracting influenza and having serious complications from it, including death. In a 2012 study of 286,000 adults under 65, and 134,000 adults 65 or older, the vaccination rates of young adults were less than half that of older adults, 31.8%, and 68.9%

respectively. Having appropriate access to healthcare was found to be the largest contributing factor in the results of this study (Takayama et al., 2012). Within the small midwestern campus that this study was conducted, annual uptake of the seasonal influenza vaccine has been in a steady decline since 2015, falling from approximately 750 to 400 vaccinations given (E. Davidson, personal communication, February 8, 2020). Because the age group most involved with this campus community, young adults 18-26, have had increased access to health insurance during their adults years as compared to generations before, understanding these students attitudes and beliefs in regards to the seasonal influenza vaccine is an important step in increasing the uptake of this vaccine among this group.

Misinformation and an Anti-Vax Culture

Understanding the mistrust experienced within our community regarding the seasonal influenza vaccine is paramount in the effort to decrease this mistrust and to increase uptake of the influenza vaccine, and to do this we must explore the beliefs and attitudes of our community concerning vaccines as a whole, and the information used to form these attitudes. Over the past twenty years or more, a culture has developed within the United States and in other parts of the world with the goal of promoting anti-vax information (Bricker & Justice, 2019). In 1998 a study was released in the Lancet describing a connection between the measles, mumps, and rubella vaccine and autism spectrum disorder (Wakefield et al., 1998). This study was shown to be done under unscientific circumstances and was fully retracted by the Lancet in 2004 (Murch et al., 2004). Along with the issues found within the study, including a sample size of only twelve, Wakefield and his co-authors were accused of having a biased funding source for their study and eventually faced charges ranging from ethical violations to scientific misrepresentation (Bricker & Justice, 2019).

The retraction and the violations incurred by the authors had little effect on the culture formed by this misinformation, and in the end, after the loss of his medical licensure, Wakefield continues to propagate this same misinformation regarding the MMR vaccine and other vaccines as well (Bricker & Justice, 2019). In the time since the Wakefield publication and retraction, a wide variety of unsubstantiated ideas and concerns have arisen within the anti-vax culture, and these ideas are often propagated by the media. The concerns of parents regarding vaccination have been found to be significantly affected by the media, along with a willingness to accept easy to understand answers over more complicated, harder to comprehend explanations. The current trend of rejecting the scientific consensus in search of a layman's understanding has been a constant problem within the medical, and public health communities in the fight against vaccine rhetoric (Bricker & Justice, 2019). These concerns regarding the MMR Vaccine and this culture of anti-vax rhetoric have spilled over into the realm of other vaccines including the seasonal influenza vax. Many of the people who have become parents during the development of this anti-vax culture, and the children raised within it, have concerns about the seasonal influenza vaccine regarding its usefulness, and its side effects, along with a general feeling of this vaccine being unnecessary (Singleton et al., 2005). Addressing these issues in college-aged young adults is ideal not only because they fall specifically within the age groups raised within the anti-vax culture that has developed over the past twenty-two years, but also because they are, or will soon be within the common age ranges to become parents. Educating these future parents is a significant part of putting a stop to the misinformation commonly accepted within anti-vax culture, and it plays a large role in the education of future adults within our community.

Access to Trusted Information

When considering the reasons young adults may or may not be willing to receive the seasonal influenza vaccine, it is important to note the connection between education and positive attitudes and beliefs regarding vaccination uptake. Many education resources exist in regard to vaccination, but oftentimes, the most influential resource is a trusted healthcare professional (Loubet et al., 2015). In a world filled with misinformation and conflicting ideas regarding vaccination, having the opportunity to regularly consult with a source that patients are comfortable with and have confidence in, is paramount in the effort to increase vaccine awareness and uptake. A lack of healthcare resources regarding vaccine education can lead to not only a mistrust of vaccines but also a lack of understanding regarding their benefits and purpose within our society (Singleton et al., 2005). Because increased knowledge and positive attitudes surrounding influenza vaccination are associated with higher rates of vaccination in populations, understanding the attitudes and opinions that lead to the voluntary refusal of the seasonal influenza vaccine can give insight into what areas young adults need further educated in in order to increase the rates of seasonal influenza vaccination among this group (Loubet et al., 2015).

Insurance Coverage

A serious concern regarding uptake of the seasonal influenza vaccine is insurance coverage, especially among young adult age groups. Health insurance usually provides access to affordable vaccines, and more importantly, it provides a chance to see a health care provider regularly and to be educated about the benefits, and necessity of seasonal influenza vaccination.

In 2010 the United States instituted the Affordable Care Act, created fundamental changes within the U.S. healthcare system. One of these changes, with the goal of increasing the

rate of young adults with insurance, allowed adults 26 and under to stay on their parent's insurance (Levy, 2019). Children under 18, are the age group most likely to be insured within the United States because of both government programs, and the ability to be covered by their parent's insurance (Centers for Disease Control and Prevention, 2018). Because of the extension to the age a child can stay on their parent's insurance, the rates of young adults, ages 26 and under, with insurance, has risen in past years (Centers for Disease Control and Prevention, 2018). With the changes made by the 2010 affordable care act, the majority of college-age young adults, 18 through 26, will have spent their entire lives with health insurance.

Having access to healthcare not only gives an opportunity to receive the influenza vaccination, but also gives access to information from a healthcare provider on vaccinations that oftentimes serves as a reminder of the importance of, and when to receive the influenza vaccine. Receiving appropriate information concerning the seasonal influenza vaccine and regular recommendations from a healthcare provider is one of the most significant predictors in the uptake of the influenza vaccine (Strassberg et al., 2017). Because of the rising access to healthcare for young adults, seasonal influenza vaccination rates should be increasing and negative attitudes or opinions surrounding the influenza vaccine should be decreasing due to this access to education.

Conclusion

The seasonal influenza vaccine has the potential to save countless lives every year within our community, but still, the ideal rates of vaccination are not met, especially among young adults (Office of Disease Prevention and Health Promotion, 2020). The most significant reason for lack of uptake of the seasonal influenza vaccine, lack of information from a healthcare provider usually due to lack of health insurance coverage, applies less to current young adults

than it has in recent years, leaving a need for further investigation into the attitudes and beliefs of this age group regarding the influenza vaccine (Strassberg et al., 2017). The prevalence of anti-vax rhetoric during the lifetime of adults 18-26 has led to a culture with a general mistrust for vaccination, and a tendency to seek out simple answers, rather than more complicated, and more credible explanations for their concerns (Bricker & Justice, 2019). Understanding students' attitudes and beliefs surrounding the seasonal influenza vaccine is paramount in health educators' efforts to increase uptake of the vaccine among these age groups.

Gaps

Many studies have been done regarding the safety and usefulness of the seasonal influenza vaccine, but very little research has been done regarding the attitudes and beliefs that prevent adults from receiving the vaccine, especially in young adults. Annual uptake of the seasonal influenza vaccine by adults who are able to receive this vaccination is absolutely vital in the efforts to subdue the spread of this deadly virus. The lack of uptake experienced, especially within young adults, is a significant barrier to the herd immunity of the entire community and is therefore a public health hazard with the potential to cause a significant spread of the influenza virus. Understanding students' attitudes and beliefs regarding the seasonal influenza vaccine allow health educators to address specific concerns and educate adults directly about the issues that currently influence them the most. Addressing young adults' concerns regarding the seasonal influenza vaccine, through a trusted healthcare provider, is a proven method in increasing positive attitudes regarding the vaccine and therefore will have a serious impact on increasing the uptake of the seasonal influenza vaccine.

CHAPTER 3

Methods

Introduction

Vaccines are inarguably one of the most beneficial advances in medicine ever to be made, but they can only be effective if widely used by the population in need of them. Despite broad access to the seasonal influenza vaccine, uptake is still only 31.8% for young adults (Takayama et al., 2012). Understanding students' beliefs and concerns in regard to the seasonal influenza vaccine that could prevent them from receiving the vaccine, gives us valuable information in the effort to increase uptake. The purpose of this study is to examine student's knowledge, attitudes, and behaviors towards vaccination, with a particular focus on the seasonal influenza vaccine.

Research Design

Participants. This Survey was conducted within a small rural campus in central Illinois. This campus contains over 7600 students (Eastern Illinois University, 2020) within a town of under 21,000, and within a county of just over 50,000 (United States Census Bureau, 2019). Participants were between the ages of 18 and 26. 199 of 3577 or just under 6% of full-time undergraduate students participated in the survey (Eastern Illinois University, 2020). Of the participating students, 68% (n=136) reported to identify as female, 31% (n=62) reported to identify as male, and 0.5% (n=1) reported to identify as other. Participating students were from a variety of different fields of undergraduate study.

Research question. The questions within the survey focused on students' knowledge, attitudes, and behaviors pertaining to the seasonal influenza vaccine along with questions about their access to the vaccine. There were three research questions for this study. What perceived

dangers do students age 18 through 26 experience when given the decision to receive the seasonal influenza vaccine? How important do students age 18 through 26 consider the seasonal influenza vaccine to be within our community? In the past 5 years, what level of access did students have to the seasonal influenza vaccine, and how often did they receive it?

Research instrument. The data collected in this research study was acquired through an anonymous online survey of 23 questions (Appendix C). Survey questions included demographic questions pertaining to gender, age, and university enrollment status, along with questions surrounding student's knowledge, attitudes, and behaviors about the seasonal influenza vaccine. The survey used in this research study contained both Likert and multiple-choice questions. Examples of questions asked within the survey include, "How knowledgeable do you consider yourself to be concerning the influenza virus?" "How dangerous do you consider the influenza virus to be?" and "Would you receive the seasonal influenza vaccine today if advised to by your healthcare provider?" Face and content validity are both shown within the relationship between the research questions, and the questions asked in the survey. This survey was examined by experts in the field of public health for relevancy, and to ensure the questions asked within the survey addressed the research questions completely.

Data collection. The data collected by this research study were mostly surrounding the knowledge, and attitudes, and behaviors of college students pertaining to the seasonal influenza vaccine. Participants were between the ages of 18 and 26 and were full-time undergraduate students at a small midwestern university. Participants were asked to complete an anonymous 23 question survey for a research study within the Public Health department. Participants were given a recruitment form (Appendix B) explaining the research study and survey, with a QR

code and a text back service number and code that linked them directly to the survey on their electronic device. Participants were made aware of their rights pertaining to this research study and survey through a consent form at the beginning of the survey process, and all participants voluntarily consented to participate before accessing any survey content (Appendix A).

Participants who did not accept the consent form were forwarded out of the survey process.

Limitations of this survey come largely in the form of low participation rates and a lack of demographic data of the participants. Of 3577 full-time undergraduate students, 199 students participated in this research study (Eastern Illinois University, 2020). Of the participants 136 were female, 62 were male, and 1 student identified as neither male nor female, and no racial or ethnic data was collected about the participants within this study. Because of the lack of information pertaining to specific demographics, and the small sample size of the research study, results may not be representative of the larger campus population. Within this research study significantly more participants identified as female (n=136, 68.3%) than male (n=62, 31.2%) and students identifying as neither male nor female (n=1, 0.5%). This difference in gender representation can also be seen within the university as a whole with students identifying as female (n=2134, 60%) being 1.5 times as common as those identifying as male (n=1443, 40%), but the difference is significantly more prominent in this research study (Eastern Illinois University, 2020).

Data analysis. The data collected within the survey were analyzed using Qualtrics. The survey administered within this research study contained 23 questions consisting of both multiple-choice and Likert questions. The questions within the survey analyzed participants' knowledge, attitudes, and behaviors pertaining to the seasonal influenza virus and the seasonal influenza vaccine. Qualtrics was used to find the measures of central tendency for the applicable

questions, along with the frequency, percentage of response, and cross-tabulation analysis. The descriptive analysis allows for a more thorough understanding of the knowledge, attitudes, and behaviors of undergraduate students pertaining to the seasonal influenza vaccine.

Summary

This research study and the data analysis within are designed with the goal of assessing full-time undergraduate college students between the age of 18 and 26, knowledge, attitude, and behaviors in regard to the influenza virus and the seasonal influenza vaccine. The data collected and the analysis developed from that data are of vital importance to public health and medical professionals, as well as the community. Content and face validity were demonstrated within the study, linking the data collected to the research questions, “What perceived dangers do students age 18 through 26 experience when given the decision to receive the seasonal influenza vaccine? How important do students age 18 through 26 consider the seasonal influenza vaccine to be within our community? In the past 5 years, what level of access did students have to the seasonal influenza vaccine, and how often did they receive it?” The goal of this research study and the survey conducted therein was to assess and identify common beliefs, behaviors, and experiences between people who voluntarily refuse the seasonal influenza vaccine.

CHAPTER 4

Results

Introduction

This study was designed to assess full-time undergraduate students' knowledge, attitudes, and behaviors in regard to the seasonal influenza vaccine and its safety and validity. Despite widespread access, the seasonal influenza vaccine has seen little increase in uptake in recent years. Understanding beliefs and experiences held by students that could prevent them from receiving the seasonal influenza vaccine is paramount in the effort to educate and hopefully vaccinate these students. The data collected within this study allows health educators to address individual issues students may have along with focusing on the misconceptions of the student population as a whole. A 23-question survey was completed by participants in regard to their knowledge, attitudes, and behaviors concerning the seasonal influenza vaccine, along with demographic information.

Sample Demographics

Participants in the research study were full-time undergraduate students (12 or more credit hours) at a small midwestern university between the ages of 18 and 26 and the mean age for the sample was 20.7 years old. Of the 199 students who took part in the survey, 68.3% (n=136) identified as female, 31.2% (n=62) identified as male, and 0.5% (n=1) identified in a way other than male or female. The difference in female to male students in this study is significant, but it represents the student population of the university well, with the population of full-time undergraduate women (n=2134, 60%) approximately 1.5 times that of men (n=1443, 40%) on this campus (Eastern Illinois University, 2020). Because of university policy requiring

health insurance and university insurance covering enrolled students, this research study assumes all participants all currently insured.

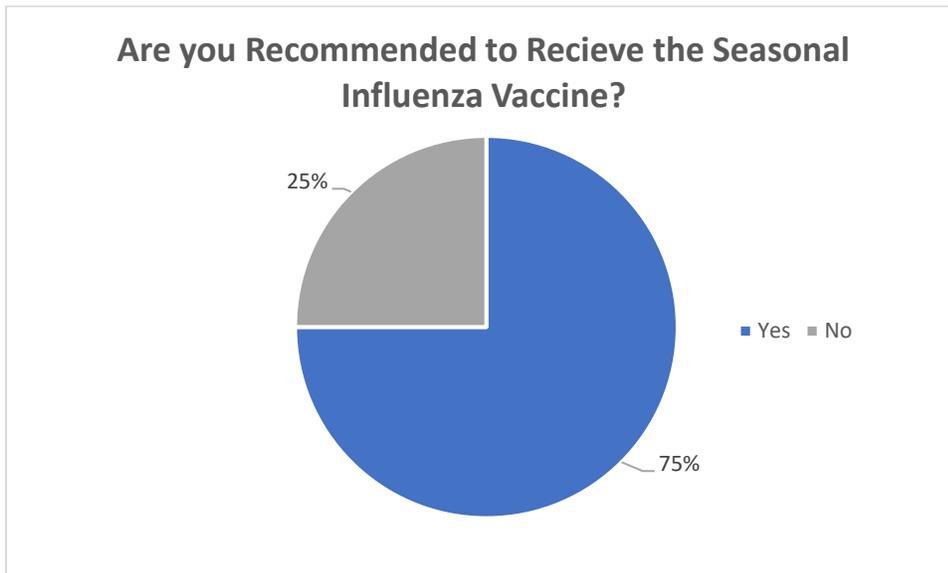
Research questions

There were three research questions for this study. What perceived dangers do students age 18 through 26 experience when given the decision to receive the seasonal influenza vaccine? How important do students age 18 through 26 consider the seasonal influenza vaccine to be within our community? In the past 5 years, what level of access did students have to the seasonal influenza vaccine, and how often did they receive it?

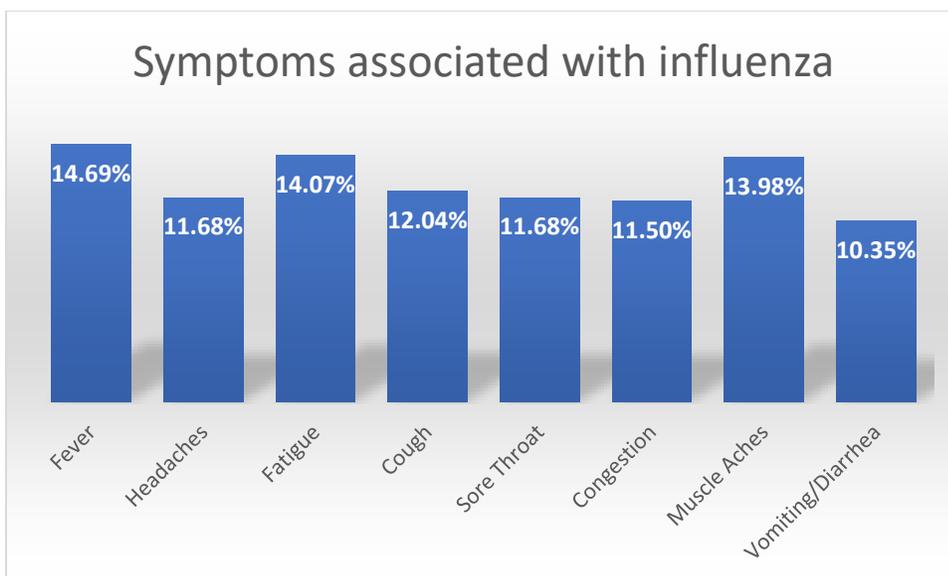
Findings

Knowledge. When asked if for the last 5 years they had been aware of the seasonal influenza vaccine, 95% (n=177) reported that they were aware, and 5% (n=9) reported to not be aware. When asked if they were recommended to receive the seasonal influenza vaccine, 75% (n=94) said yes, and 25% (n=31) said no (See graph 1). When asked if the university provides seasonal influenza vaccines free of charge to students, 97% (n=130) said yes, and 3% (n=4) said no. When asked to identify symptoms commonly associated with the seasonal influenza virus, 90% (n=166) reported fever, 72% (n=132) reported headaches, 86% (n=159) reported fatigue, 74% (n=136) reported cough, 72% (n=132) reported sore throat, 71% (n=130) reported congestion, 86% (n=158) reported muscle and/or body aches, and 64% (n=117) reported vomiting or diarrhea (See graph 2).

Graph 1



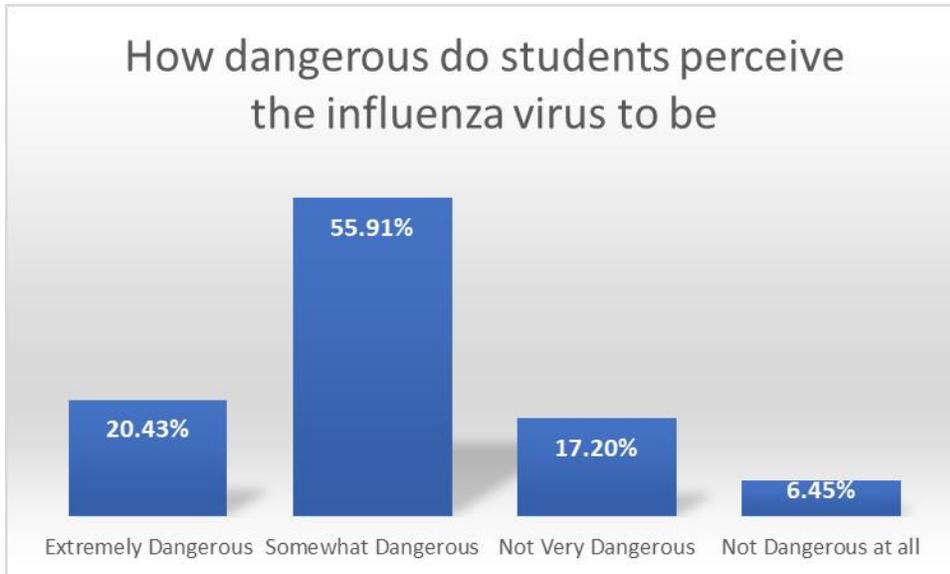
Graph 2



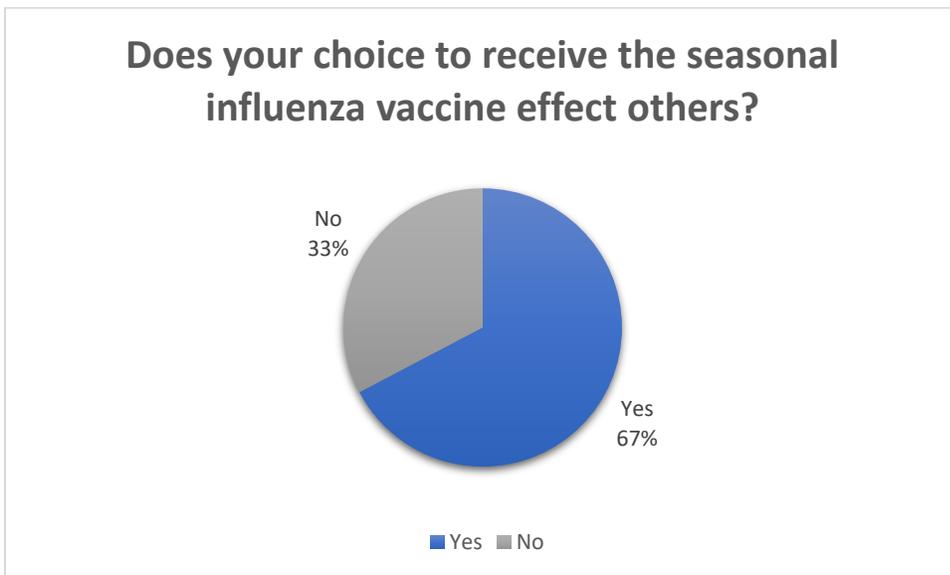
Attitude. When asked how knowledgeable they consider themselves to be concerning the seasonal influenza virus, 8% (n=15) reported to be extremely knowledgeable, 58% (n=107) reported to be somewhat knowledgeable, 32% (n=59) reported to be not very knowledgeable, and 3% (n=5) reported to know nothing about this subject. When asked how knowledgeable they consider themselves to be concerning the seasonal influenza vaccine, 9% (n=17) reported to be

extremely knowledgeable, 54% (n=101) reported to be somewhat knowledgeable, 32% (n=60) reported to be not very knowledgeable, and 4% (n=8) reported to know nothing about this subject. When asked how knowledgeable they consider themselves to be concerning the effects of the seasonal influenza vaccine, 10% (n=19) reported to be extremely knowledgeable, 49% (n=92) reported to be somewhat knowledgeable, 37% (n=68) reported to be not very knowledgeable, and 4% (n=7) reported to know nothing about this subject. When asked how dangerous they consider the influenza virus to be, 20% (n=38) reported extremely dangerous, 56% (n=104) reported somewhat dangerous, 17% (n=32) reported not very dangerous, and 6% (n=12) reported not dangerous at all (Graph 3). When asked if their choice to receive the seasonal influenza vaccine has any effect on other people or the community as a whole, 67% (n=107) reported yes, and 33% (n=52) reported no (Graph 4). When asked if they feel like receiving the seasonal influenza vaccine will decrease the likelihood of them contracting the influenza virus, 62% (n=103) reported yes, and 38% (n=64) reported no. When asked what concerns they have when receiving the seasonal influenza vaccine, 28% (n=51) reported concerns of contracting the influenza virus from the vaccine, 10% (n=19) reported concerns of the vaccine interacting with other medical conditions, 33% (n=60) reported concerns of the side effects of the vaccine, 11% (n=20) reported concerns over the cost of the vaccine, 9% (n=17) reported concerns over the time it takes to receive the vaccine, 15% (n=27) reported having concerns not listed in the question, and 39% (n=71) reported having no concerns regarding the seasonal influenza vaccine (Graph 5).

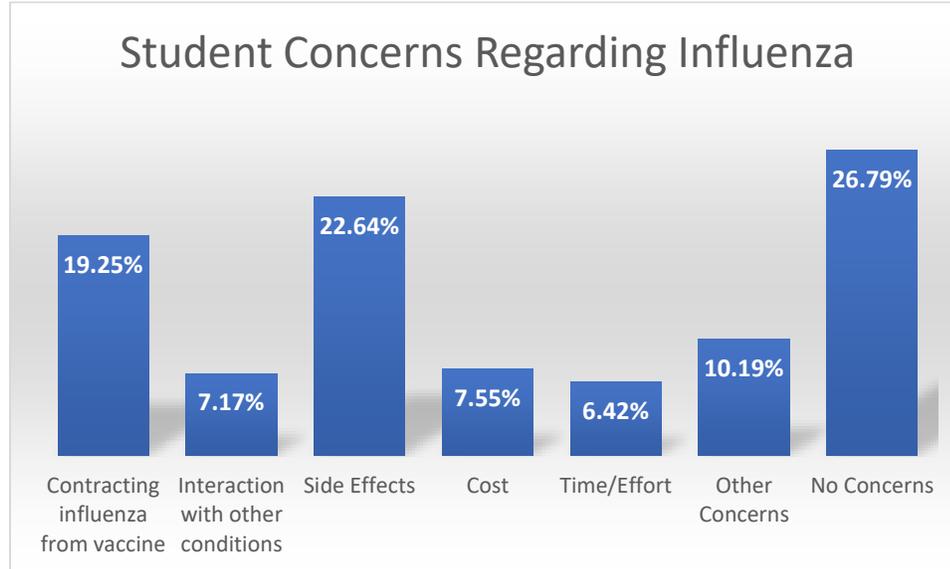
Graph 3



Graph 4

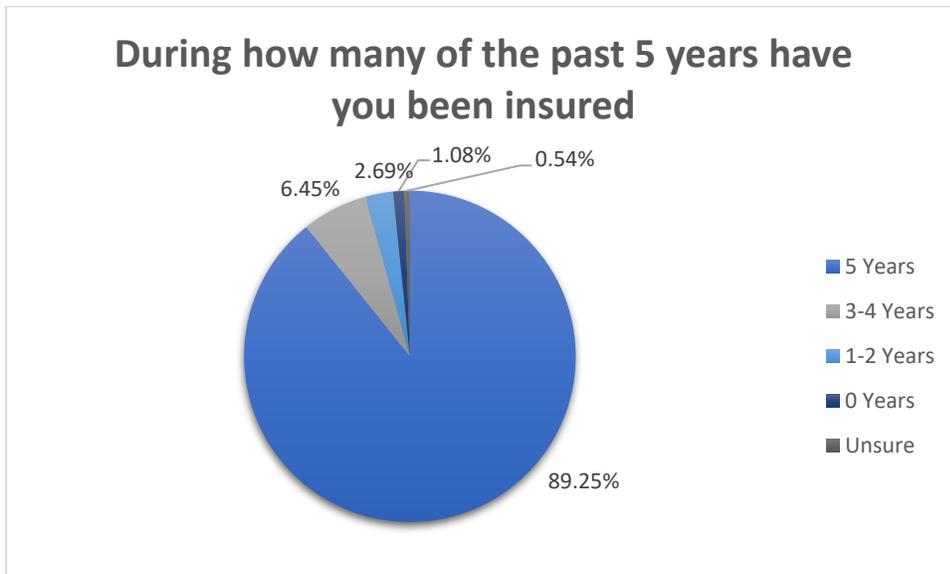


Graph 5

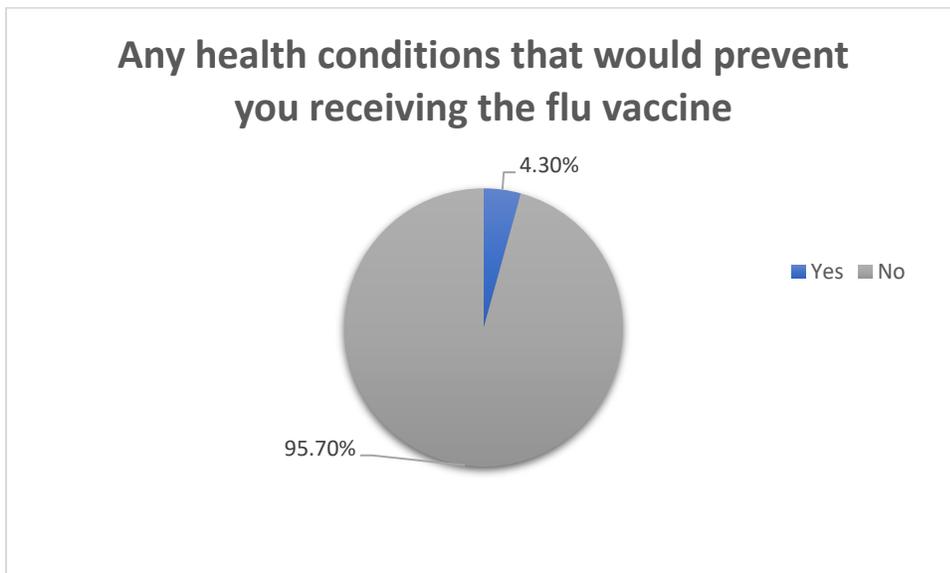


Experience. When asked if during the past 5 years they had health insurance coverage, 89% (n=166) reported having coverage for the past 5 years, 6% (n=12) reported having coverage for 3-4 of the past 5 years, 1% (n=2) reported having no health insurance coverage for the past 5 years, and 0.5% (n=1) reported to not know if they had health insurance in the past 5 years (Graph 6). When asked how often when seeing their healthcare provider they are given information or recommendations concerning the seasonal influenza vaccine, 20% (n=38) said always, 26% (n=48) said most of the time, 9% (n=17) said about half of the time, 28% (n=52) said sometimes, and 17% (n=31) said never. When asked if they had any health conditions that would cause their healthcare provider to advise against receiving the seasonal influenza vaccine, 4% (n=8) said yes, and 96% (n=178) said no (Graph 7). When asked within the last 5 years, how many times have you contracted the seasonal influenza virus or had the flu, 50% (n=93) said 0 times, 40% (n=74) said 1-2 times, 10% (n=18) said 3-4 times, and 0.5% (n=1) said 5 or more times.

Graph 6



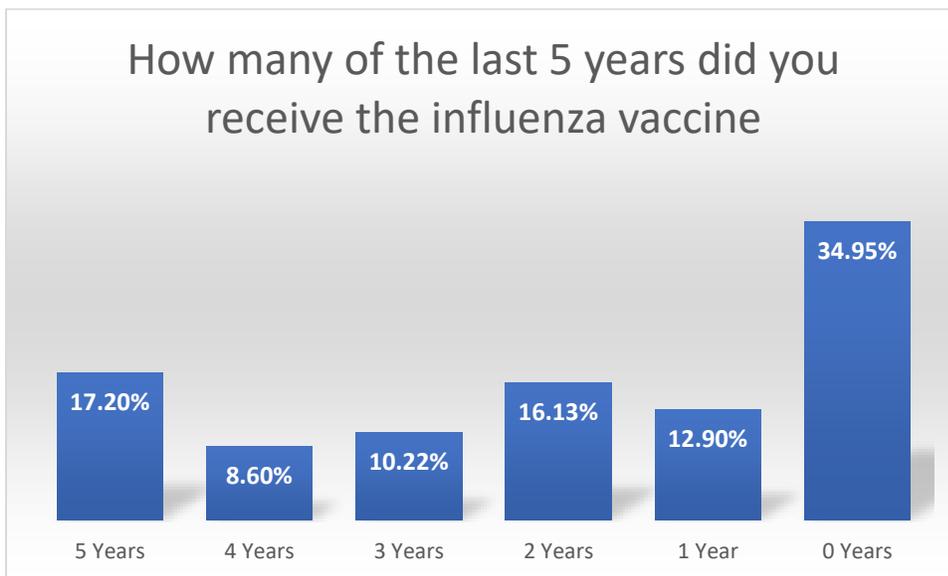
Graph 7



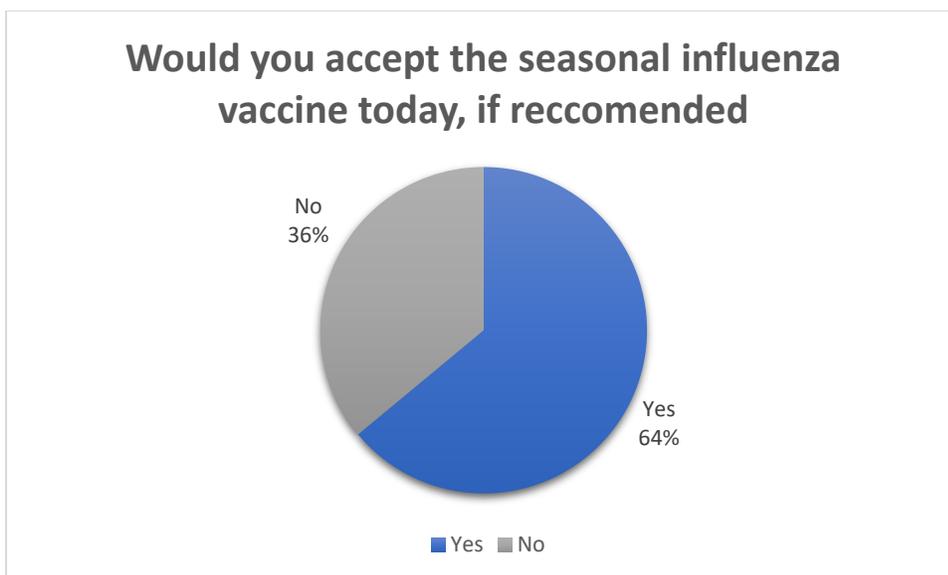
Behavior. When asked how many times a year they see a healthcare provider, 28% (n=53) reported more than twice a year, 28% (n=53) reported twice a year, 32% (n=59) reported once a year, and 11% (n=21) reported less than once a year. When asked in how many of the last 5 years they received the seasonal influenza vaccine, 17% (n=32) reported 5 years, 9% (n=16)

reported 4 years, 10% (n=19) reported 3 years, 13% (n=24) reported 1 year, and 35% (n=65) reported 0 years (Graph 8). When asked if they would receive the seasonal influenza vaccine today if advised to by their healthcare provider, 64% (n=119) reported yes, and 36% (n=67) reported no (Graph 9). When asked if they plan to receive the seasonal influenza vaccine during the 2020-2021 influenza season, 58% (n=87) reported yes, and 42% (n=63) reported no.

Graph 8



Graph 9



Summary

Being aware of students' beliefs and behaviors regarding the seasonal influenza vaccine is invaluable in the effort towards mass vaccination and herd immunity. The majority of the students participating in the study were female (60%) and students were assumed to have current health insurance coverage due to university policy. The vast majority of the students (95%) had been aware of the seasonal influenza vaccine for at least the past 5 years, and an even higher majority (97%) were aware that the university provides seasonal influenza vaccines free of charge to students. Of the participants, 25% reported being recommended not to receive the seasonal influenza vaccine while 75% reported being recommended to receive the vaccine. 23% of participants reported that they believed the seasonal influenza virus to be not very dangerous or not dangerous at all. Approximately a third of participants reported to not believe their choice to receive, or not receive the seasonal influenza vaccine had any impact on other members of the community. 38% of students reported to not believe the seasonal influenza vaccine decreases the likelihood of contracting the influenza virus. Nearly all students had health insurance for the majority of the past 5 years with 89% insured the entire 5 years and another 5% insured 3-4 of the past 5 years. Over 95% of students reported having no conditions that would cause a healthcare provider to suggest they not receive the seasonal influenza vaccine. Of students surveyed, only 58% plan to receive the seasonal influenza vaccine during the 2020-2021 influenza season.

CHAPTER 5

Summary, Conclusions, Discussion, and Recommendations

Overview

This section contains a review of this study and an interpretation of the results of the survey. 199 Full-time undergraduate students at a small midwestern university, participated in a 23-question survey with the goal of analyzing their knowledge, attitudes, and behaviors surrounding the seasonal influenza virus. The data collected within the survey were then analyzed and interpreted as shown within this chapter. Students were surveyed with the goal of understanding their hesitancy toward receiving the seasonal influenza vaccine.

Purpose

The purpose of this study is to examine student's knowledge, attitudes, and behaviors towards vaccination, with a particular focus on the seasonal influenza vaccine. This study will examine students' perceived benefits and risks surrounding the influenza vaccine with the goal of providing information that may assist in the education of future students and the community as a whole.

Summary of the Study

Seasonal influenza vaccination rates among adults in the United States were 43.2 percent in 2014, and within that group of vaccinated individuals, there is a significant age disparity with younger adults receiving fewer vaccinations on average than their older counterparts (Williams et al., 2016). In a 2012 study of 286,000 adults under 65, and 134,000 adults 65 or older, the vaccination rates of young adults were less than half that of older adults, 31.8%, and 68.9% respectively. Having appropriate access to healthcare was found to be the largest contributing factor in the results of this study (Takayama et al., 2012). Understanding young adults' attitudes

and perceptions regarding the seasonal influenza vaccine provides an opportunity to educate this age group, and increase uptake of the vaccine among those adults who are least likely to receive it.

Many education resources exist in regard to vaccination, but oftentimes, the most influential resource is a trusted healthcare professional (Loubet et al., 2015). A lack of healthcare resources regarding vaccine education can lead to not only a mistrust of vaccines but also a lack of understanding regarding their benefits and purpose within our society (Singleton et al., 2005). Because increased knowledge and positive attitudes surrounding influenza vaccination are associated with higher rates of vaccination in populations, understanding the attitudes and beliefs that lead to the voluntary refusal of the seasonal influenza vaccine can give insight into what areas young adults need further educated in in order to raise the rates of seasonal influenza vaccination among this group (Loubet et al., 2015).

Participants in the research study were full-time undergraduate students (12 or more credit hours) at a small midwestern university between the ages of 18 and 26 and the mean age for the sample was 20.7 years old. Of the 199 students who took part in the survey, 68.3% (n=136) identified as female, 31.2% (n=62) identified as male, and 0.5% (n=1) identified in a way other than male or female. The data collected in this research study was acquired through an anonymous online survey of 23 questions (Appendix C). Survey questions included demographic questions pertaining to gender, age, and university enrollment status, along with questions surrounding student's knowledge, attitudes, and behaviors about the seasonal influenza vaccine. There were 3 research questions for this study:

What perceived dangers do students age 18 through 26 experience when given the decision to receive the seasonal influenza vaccine?

How important do students age 18 through 26 consider the seasonal influenza vaccine to be within our community?

In the past 5 years, what level of access did students have to the seasonal influenza vaccine, and how often did they receive it?

Conclusions

After analyzing the data collected within this study, the following conclusions were derived:

1. More than a third of students have not received the seasonal influenza vaccine during any of the past 5 years, and nearly two-thirds have received the vaccine in 2 or less of the past 5 years. Of the participants 17% reported to have gotten the seasonal influenza vaccine in all 5 of the past 5 years, 9% reported 4 of the last 5 years, 10% reported 3 of the last 5 years, 16% reported 2 of the last 5 years, 13% reported 1 of the last 5 years, and 35% reported receiving the seasonal influenza vaccine 0 out of the last 5 years.
2. A third of students do not believe their choice to receive the seasonal influenza vaccine has any effect on other people or the community as a whole. Of the participants, 67% reported believing their choice to be vaccinated affected others, while 33% reported believing their choice to be vaccinated had no effect on others.
3. More than 60% of students reported having concerns regarding the seasonal influenza vaccine. Of the participants, 19% reported concerns of contracting the influenza virus from the vaccine, 7% reported concerns of the vaccine interacting with other medical conditions, 23% reported concerns regarding the side effects

of the vaccine, 8% reported concerns regarding the cost of the vaccine, 6% reported concerns regarding the time it takes to receive the vaccine, 10% reported other concerns, and 27% reported having no concerns regarding the seasonal influenza vaccine.

4. Nearly 40% of students do not believe the seasonal influenza vaccine will decrease their likelihood of contracting the influenza virus. Of the participants, 62% reported believing the seasonal influenza vaccine would decrease the likelihood of contracting the influenza virus, while 38% reported to not believe the vaccine would decrease the likelihood of contracting the virus.
5. More than 40% of students do not plan to receive the seasonal influenza vaccine during the upcoming influenza season. Of the participants, 58% reported they planned to receive the seasonal influenza vaccine during the 2020/21 influenza season, while 42% reported they plan to not receive the vaccine during the 2020/21 influenza season.

Discussion

The goal of this study was to understand the knowledge, attitudes, and behaviors of undergraduate college students between the ages of 18 and 26 surrounding the safety and usefulness of the seasonal influenza vaccine. The lack of uptake of the seasonal influenza vaccine within young adult age groups is a significant problem facing public health in a variety of populations. Traditionally less uptake is seen among this age group because of a lack of insurance coverage, but in 2010 the affordable care act expanded coverage to adults 26 years of age and younger, providing the majority of this age group with health insurance coverage (Levy, 2019).

Young adults within our community, are among the least likely to receive the seasonal influenza vaccine or to participate in health programs directed towards education and promotion of the influenza vaccine. The study found that 35% of students hadn't received an influenza vaccine in the past 5 years, and of these students, 86% had health insurance coverage during the past 5 years, 83% saw a healthcare provider at least once a year, but only 39% were regularly given information and recommendations regarding the seasonal influenza vaccine during healthcare visits, and 31% were never given information or recommendations about the influenza vaccine. Of the participants who received no influenza vaccine in the past 5 years, 52% reported to not be recommended to receive the seasonal influenza vaccine, while only 6% reported having a condition that would cause a healthcare provider to advise against receiving the seasonal influenza vaccine. This difference between those who believe they are recommended to get the vaccine and those who have a medical reason to not receive the vaccine is significant, leaving a gap of 46% of students who aren't aware of their need for vaccination. All adults are recommended to receive the seasonal influenza vaccine if not advised against it by healthcare providers (Centers for Disease Control and Prevention, 2019). Of the participants who received no influenza vaccines in the past 5 years, 65% considered themselves somewhat, to extremely, knowledgeable concerning influenza, and 55% considered themselves somewhat to extremely knowledgeable concerning the influenza vaccine and its effects. This shows a common gap in students' knowledge concerning the importance of the influenza vaccine. Of the participants who have not received an influenza vaccine in the past 5 years, 48% do not believe their choice to receive the seasonal influenza vaccine has an effect on other people or the community, and 68% don't believe receiving the seasonal influenza vaccine will decrease the likelihood of contracting the influenza virus. Either misinformation or a lack of education, has led to students

misunderstanding the effectiveness of the seasonal influenza vaccine both personally and on a population level. 65% of those who hadn't received the influenza vaccine in the past 5 years said they would not take the vaccine today if recommended by a healthcare provider, and 85% did not plan to receive the vaccine during the upcoming influenza season.

The most significant benefits of the seasonal influenza vaccine, or any vaccine, are experienced through herd immunity and achieved through the mass vaccination of a population. Of the students who said no when asked if their choice to receive, or not receive the seasonal influenza vaccine affected others or the community, 95% were insured at least 4 of the last 5 years, 86% saw a healthcare provider at least once a year, but only 40% were regularly given information or recommendations regarding the influenza vaccine from their healthcare provider. This shows the importance of regular vaccination recommendations by healthcare providers. When asked how often they received a seasonal influenza vaccine in the past 5 years, participants who felt as if their choice to receive the seasonal influenza vaccine had an effect on others (22%) were nearly 4 times as likely to receive the vaccine in all 5 years as those who did not believe their choice had an effect on others (6%). Of the students who did not believe their choice to receive the seasonal influenza vaccine had an effect on others, 62% would not receive a seasonal influenza vaccine if recommended to by a healthcare professional, and 65% do not plan to receive the vaccine in the upcoming influenza season. 63% of those who did not believe their choice to receive the seasonal influenza vaccine affected others reported to not believe the seasonal influenza vaccine will decrease the likelihood of contracting influenza, and 31% of those who did not believe their decision affected others, believed the influenza virus was either not very dangerous, or not dangerous at all.

Within the study, data were collected on multiple concerns surrounding the seasonal influenza vaccine, mostly concerning the vaccine's safety and usefulness. Of the participating students, 61% had concerns regarding the seasonal influenza vaccine with the largest concerns being contracting the influenza virus from the vaccine (28%) and side effects of the vaccine (33%). Most of these concerns are a product of misinformation from anti-vax rhetoric, and a lack of information from a trusted healthcare provider. More than 90% of the respondents in each answer category of concern regarding the seasonal influenza vaccine had health insurance for at least 4 of the past 5 years, and over 90% of respondents who expressed concerns saw a healthcare professional at least once a year. The number of participants who expressed concerns about the vaccine who reported rarely receiving information from a healthcare provider regarding the influenza vaccine was 40-60%. This shows significant room for improvement towards educating a section of the population at high risk for refusing the seasonal influenza vaccine. Over half of the participants who reported concerns regarding contracting the influenza virus from the vaccine, the side effects of the influenza virus, and other concerns not listed, reported that they would not receive the seasonal influenza vaccine if recommended to by a healthcare provider, and they were not planning to receive the vaccine during the upcoming influenza season. Of the same group, 58%-68% reported to not believe the influenza virus will decrease the likelihood of contracting influenza.

Limitations of the Study

There are multiple limitations within this study that should be considered when assessing the results and conclusions of the data. The participants used to collect this data were a convenience sample of the student population within a small midwestern university. The small size of the sample, 199 students, could lead to skewed results compared to the entire population

of the university, and the generalized location of the study creates a sample that is not necessarily representative of other locations or cultures. Another significant limitation of this study is the lack of demographic info regarding race. This study and its participants were all on a small university campus that makes an effort to promote the seasonal influenza vaccine regularly, making the results of this study possibly less reliable when applied to a community with less public health resources.

Recommendations for Future Research

When conducting research on undergraduate college students' perceptions of the seasonal influenza vaccine in the future, it would prove beneficial for the study to:

1. Use a sample size that is larger and demographically more representative of the population being studied.
2. Inquire as to where students were exposed to information warning against the seasonal influenza vaccine.
3. Offer more possible concerns regarding the seasonal influenza vaccine, or a way to voice less common concerns.

Recommendations for Health Educators/Practitioners/Administrators

1. Education concerning vaccination safety and importance is needed as a regular part of both high school and college student life. Developing programs based around influenza vaccination, or adding this information to other, currently established, health programs ensure students are exposed to accurate information regarding vaccination before reaching adulthood.
2. Understanding how to assess information for its credibility and usefulness is vital in the effort towards changing opinions surrounding vaccination. Developing and implementing

programs within schools and communities addressing critical thinking and misinformation regarding vaccination ensures students won't fall victim to anti-vax rhetoric, and other misleading information regarding medical decisions.

3. Healthcare professionals need to stress the importance of maintaining an open dialogue with their patients. Regular visits with a healthcare provider give an opportunity to promote and educate patients regarding vaccination through a trusted source. Healthcare providers should make education about the seasonal influenza vaccine routine during all visits with patients during, and directly prior to the influenza season.

Summary

Seasonal influenza is largely preventable through vaccination, but it is still responsible for approximately 36,000 deaths every year in the United States (Linn et al., 2010). Seasonal influenza vaccination rates among adults in the United States were 43.2 percent in 2014, and within that group of vaccinated individuals, there is a significant age disparity with younger adults receiving fewer vaccinations on average than their older counterparts (Williams et al., 2016). The purpose of this study is to examine student's knowledge, attitudes, and behaviors towards vaccination, with a particular focus on the seasonal influenza vaccine. This study will examine students' perceived benefits and risks surrounding the influenza vaccine with the goal of providing information that may assist in the education of future students and the community as a whole. Although 89% of participants reported to have had health insurance coverage over the past 5 years, and 96% of participants reported to have no medical conditions that would prevent them from receiving the seasonal influenza vaccine, only 17% of participants received the influenza vaccine during all 5 of the previous years, and only 19% during 3-4 of the past 5 years. 46% of participants reported to have received information and recommendations regarding the

seasonal influenza vaccine either most of the time or always when consulting with a healthcare professional, but 25% of participants did not believe they were recommended to receive the vaccine, and 42% cited concerns regarding the seasonal influenza vaccines side effects or contracting the influenza virus from the vaccine. Lack of uptake of the seasonal influenza vaccine within the young adult community is a significant problem that affects our community, and this problem could be circumvented through access to information through a healthcare provider and education.

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Appendices

Appendix A

CONSENT TO PARTICIPATE IN RESEARCH*Voluntary Refusal of the Seasonal Influenza Vaccine*

You are invited to participate in a research study conducted by Dr. Sheila Simons and Paul Abraham, from the Public Health department at Eastern Illinois University.

Your participation in this study is entirely voluntary. Please ask questions about anything you do not understand, before deciding whether or not to participate

You have been asked to participate in this study because you are a full-time student at Eastern Illinois University, between the ages of 18 and 26. There are no other inclusive or exclusive requirements for this survey.

• PURPOSE OF THE STUDY

The purpose of this study is to examine student's knowledge, attitudes, and behaviors towards vaccination, with a particular focus on the seasonal influenza vaccine. This study will examine students perceived benefits and risks surrounding the influenza vaccine with the goal of providing information that may assist in the education of future students and the community as a whole.

• PROCEDURES

If you volunteer to participate in this study, you will be asked to:

Complete an online survey.

The survey will take approximately ten minutes.

The survey will involve questions about the voluntary refusal of the seasonal influenza vaccine along with questions pertaining to the reasons influencing participants decision to receive or not receive the influenza vaccine.

• POTENTIAL RISKS AND DISCOMFORTS

The probability of harm or discomfort anticipated in the proposed research are not greater, in and of themselves, than those ordinarily encountered in daily life.

• POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

Understanding college student's knowledge, attitude, and behaviors surrounding the influenza vaccine could be a great benefit to all college students and the community as a whole. This information can be used to improve public health efforts towards vaccination. It is important to note that you may not directly benefit from participating in this study.

- **CONFIDENTIALITY**

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of anonymous survey.

- **PARTICIPATION AND WITHDRAWAL**

Participation in this research study is voluntary and not a requirement or a condition for being the recipient of benefits or services from Eastern Illinois University or any other organization sponsoring the research project. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind or loss of benefits or services to which you are otherwise entitled.

There is no penalty if you withdraw from the study and you will not lose any benefits to which you are otherwise entitled. You may also refuse to answer any questions you do not want to answer.

- **IDENTIFICATION OF INVESTIGATORS**

If you have any questions or concerns about this research, please contact:

Dr. Sheila Simons
217-581-6207
srsimons@eiu.edu

- **RIGHTS OF RESEARCH SUBJECTS**

If you have any questions or concerns about the treatment of human participants in this study, you may call or write:

Institutional Review Board
Eastern Illinois University
600 Lincoln Ave.
Charleston, IL 61920
Telephone: (217) 581-8576
E-mail: eiuirb@www.eiu.edu

You will be given the opportunity to discuss any questions about your rights as a research subject with a member of the IRB. The IRB is an independent committee composed of members of the University community, as well as lay members of the community not connected with EIU. The IRB has reviewed and approved this study.

If you agree to voluntarily participate in this study, click "I Agree" below. I understand that I am free to withdraw my consent and discontinue my participation at any time.

Appendix B

Dear Volunteer,

You are invited to take part in a research study on the voluntary refusal of the influenza vaccine. You were invited to participate because you're a full-time student at Eastern Illinois University between the ages of 18 and 26.

The study is directed by Paul Abraham and Dr. Sheila Simons in the Department of Public Health, College of Health and Human Services at EIU. The surveys will be anonymous with no identifying characteristics. Only the researchers will review the surveys, and solely for the purpose of coding data and performing analysis. Names will in no way be attached to the study or the surveys. Only the researchers will have access to the data.

Participation is voluntary. If you choose to participate in this research study, it will take you approximately **10** minutes. Please remember that your participation in this study is voluntary, and you may withdrawal from the study at any time without penalty. You can contact Dr. Simons directly to request your withdrawal from the study at srsimons@eiu.edu.

All reports based on this research and written by the researchers will maintain the anonymity and confidentiality of the participants. If you agree to voluntarily participate in this study, click "I agree" below.

If you have any questions concerning this study and its execution, please contact:

Dr. Sheila Simons

Klehm Hall

Eastern Illinois University

Charleston, IL 61920

via email: srsimons@eiu.edu

This project has been reviewed and approved by the EIU Human Subjects Committee. Questions concerning your rights as a participant in this research may be addressed to the Committee Chairperson, Office of Research Development and Administration, EIU, Charleston, IL 61920. Phone (217) 581-8576.

Thank you,

Paul Abraham

Dr. Sheila Simons

Appendix C

Voluntary Refusal of the Seasonal Influenza Vaccine

Q1 _ CONSENT TO PARTICIPATE IN RESEARCH

Voluntary Refusal of the Seasonal Influenza Vaccine

You are invited to participate in a research study conducted by Dr. Sheila Simons and Paul Abraham, from the Public Health department at Eastern Illinois University.

Your participation in this study is entirely voluntary. Please ask questions about anything you do not understand, before deciding whether or not to participate

You have been asked to participate in this study because you are a full-time student at Eastern Illinois University, between the ages of 18 and 26. There are no other inclusive or exclusive requirements for this survey.

PURPOSE OF THE STUDY

The purpose of this study is to examine student's knowledge, attitudes, and behaviors towards vaccination, with a particular focus on the seasonal influenza vaccine. This study will examine students perceived benefits and risks surrounding the influenza vaccine with the goal of

providing information that may assist in the education of future students and the community as a whole.

PROCEDURES

If you volunteer to participate in this study, you will be asked to:

Complete an online survey.

The survey will take approximately ten minutes.

The survey will involve questions about the voluntary refusal of the seasonal influenza vaccine along with questions pertaining to the reasons influencing participants decision to receive or not receive the influenza vaccine.

POTENTIAL RISKS AND DISCOMFORTS

The probability of harm or discomfort anticipated in the proposed research are not greater, in and of themselves, than those ordinarily encountered in daily life.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

Understanding college student's knowledge, attitude, and behaviors surrounding the influenza vaccine could be a great benefit to all college students and the community as a whole. This

information can be used to improve public health efforts towards vaccination. It is important to note that you may not directly benefit from participating in this study.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of anonymous survey.

PARTICIPATION AND WITHDRAWAL

Participation in this research study is voluntary and not a requirement or a condition for being the recipient of benefits or services from Eastern Illinois University or any other organization sponsoring the research project. If you volunteer to be in this study, you may withdraw at any

time without consequences of any kind or loss of benefits or services to which you are otherwise entitled.

There is no penalty if you withdraw from the study and you will not lose any benefits to which you are otherwise entitled. You may also refuse to answer any questions you do not want to answer.

IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about this research, please contact:

Dr. Sheila Simons

217-581-6207

srsimons@eiu.edu

RIGHTS OF RESEARCH SUBJECTS

If you have any questions or concerns about the treatment of human participants in this study, you may call or write:

Institutional Review Board

Eastern Illinois University

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Charleston, IL 61920

Telephone: (217) 581-8576

E-mail: eiuirb@www.eiu.edu

You will be given the opportunity to discuss any questions about your rights as a research subject with a member of the IRB. The IRB is an independent committee composed of members of the University community, as well as lay members of the community not connected with EIU. The IRB has reviewed and approved this study.

If you agree to voluntarily participate in this study, click “I Agree” below. I understand that I am free to withdraw my consent and discontinue my participation at any time.

I Agree

End of Block: Block 1

Start of Block: Block 2



Q2 Are you a full-time student at Eastern Illinois University? (12 or more credit hours)

Yes

No



Q3 What is your current age? (Participants must be between 18 and 26 years of age)

Q4 What gender do you identify as?

- Male
- Female
- Other
- Prefer not to answer

End of Block: Block 2

Start of Block: Block 3

Q5 During the past 5 years, have you had health insurance coverage?

- Yes, I have had health insurance for the past 5 years.
- I have had health insurance for 3-4 of the past 5 years.
- I have had health insurance for 1-2 of the past 5 years.
- No, I have not had health insurance for the last 5 years.
- I don't know.

Q6 For the last 5 years, have you been aware of the seasonal influenza vaccine?

- Yes
 - No
-

Q7 How many times a year do you see a healthcare provider?

- More than twice a year
 - Twice a year
 - Once a year
 - Less than once a year
-

Q8 How often when seeing your healthcare provide do they provide information, or recommendations concerning the seasonal influenza vaccine?

- Always
 - Most of the time
 - About half the time
 - Sometimes
 - Never
-

Q9 Do you have any health conditions that would cause your healthcare provider to advise against receiving the seasonal influenza vaccine?

Yes

No

Q10 During the last 5 years, how many times have you contracted the seasonal influenza virus, or had the flu?

0

1-2

3-4

5 or more

Q11 Are you recommended to receive the seasonal influenza vaccine?

Yes

No

I don't know

Q12 Does Eastern Illinois University provide seasonal influenza vaccines free of charge to full time students?

- Yes
 - No
 - I don't know
-

Q13 Out of the last 5 years, during how many years did you receive the seasonal influenza vaccine?

- 5
 - 4
 - 3
 - 2
 - 1
 - 0
-

Q14 Identify the symptoms associated with the influenza virus. Mark all that apply.

- Fever
 - Cough
 - Sore throat
 - Congestion (runny/stuffy nose)
 - Muscle / Body aches
 - Headaches
 - Fatigue
 - Vomiting / Diarrhea
-

Q15 How knowledgeable do you consider yourself to be concerning the influenza virus?

- Extremely knowledgeable
 - Somewhat knowledgeable
 - Not very knowledgeable
 - I know nothing about this subject
-

Q16 How knowledgeable do you consider yourself to be concerning the seasonal influenza vaccine?

- Extremely knowledgeable
 - Somewhat knowledgeable
 - Not very knowledgeable
 - I know nothing about this subject
-

Q17 How knowledgeable do you consider yourself to be concerning the effects of the seasonal influenza vaccine?

- Extremely knowledgeable
 - Somewhat knowledgeable
 - Not very knowledgeable
 - I know nothing about this subject
-

Q18 How dangerous do you consider the influenza virus to be?

- Extremely dangerous
 - Somewhat dangerous
 - Not very dangerous
 - Not dangerous at all
-

Q19 Does your choice to receive, or not receive, the seasonal influenza vaccine have any effect on other people, or the community as a whole?

- Yes
 - No
 - I don't know
-

Q20 Would you receive the seasonal influenza vaccine today if advised to by your healthcare provider?

- Yes
 - No
-

Q21 Do you feel like receiving the seasonal influenza vaccine will decrease the likelihood of you contracting the influenza virus?

- Yes
- No
- I don't know
-

Q22 When receiving the seasonal influenza vaccine I have concerns about..... (Mark all that apply)

- Contracting the influenza virus from the vaccine
- The vaccine interacting with other medical conditions
- The side effects of the seasonal influenza vaccine
- The cost of the seasonal influenza vaccine
- The time it takes to receive the seasonal influenza vaccine
- Other concerns not listed
- I have no concerns regarding the seasonal influenza vaccine
-

Q23 Do you plan to receive the seasonal influenza vaccine during the 2020-2021 "flu season"?

- Yes
- No
- I don't know

End of Block: Block 3
