Addressing Oral Health, Safety, Under-Immunization, and Nutrition in the Local Refugee and Immigrant Communities (OSHUN)

Buhrman D. BS, Gerrard, M.E. BS, Rahman, M. BS, Sridhar, V. BS, Permashwar, V. M.D, Virginia Tech Carilion School of Medicine

Background: The Roanoke area resettles approximately 200 refugees per year. Pediatricians and dentists who treat this population have observed several health disparities in this community along with a lack of retention of medical care. Despite these observations, little has been done to overcome barriers to consistent care. Formal baseline health assessments for refugee and immigrant children could potentially better guide local refugee and immigrant health and create sustainable relationships between these communities.

Design/Methods: The target population was reached by partnering with organizations with established relationships with the local refugees and immigrant communities. Anonymous surveys were distributed to collect data on health care and safety practices following a health fair held for refugee and immigrant families. Questions from the survey originated from validated screening tools including: "Assessment of Knowledge and Attitude and Practice of Parents about Immunization", "The Safe Environment for Every Kid (SEEK) Parent Questionnaire", "Oral Health Behavior Questionnaire", and "Accountable Health Communities Core Health-Related Social Needs Screening". Questions were modified to focus on oral health, safety, comprehension of immunizations, and nutrition. These were translated into the participant's native language by a validated translation service.

Results: Survey respondents included twenty family members with an average household of five from the following countries: Afghanistan, Burundi, Nepal, Sudan, Congo, and Somali. All families acknowledged brushing their teeth on average of twice per day. However, 57.9% of subjects (11/19) did not have access to a dentist even though 84% (16/19) admitted to understanding that children should visit a dentist twice per year. All participants reported drinking bottled water. All participants stated they had a working smoke detector in their home; however, only 20% (4/20) knew the number for poison control. Lastly, only 15% (3/20) claimed to have chosen not to vaccinate their children due to reasons including allergies and insurance.

Conclusion: Refugee families in our area are aware of the importance of appropriate oral health practices; however, many lack appropriate resources to adequately maintain healthy dentition. These surveys also highlighted hesitancy of drinking tap water, thus limiting refugee children's access to fluoridated water. Further, safety education for families should focus on knowledge of local resources. Lastly, these surveys indicate that many refugee families have not chosen to opt out of vaccinations. Overall, these results demonstrate the need to address access to adequate oral health care, a cultural shift toward drinking tap water, and need for improved safety awareness. This data will enable future efforts to better aid the refugee and immigrant population targeted to their needs.

Addressing Oral Health, Safety, Under-immunization, and Nutrition in the Local Refugee and Immigrant Communities (OSHUN)

Dakota Buhrman BS, Miranda E. Gerrard BS, Meredith Rahman BS, Vaishnavi Sridhar BS, Vydia Permashwar, M.D Pediatrician, Virginia Tech Carilion School of Medicine

Background

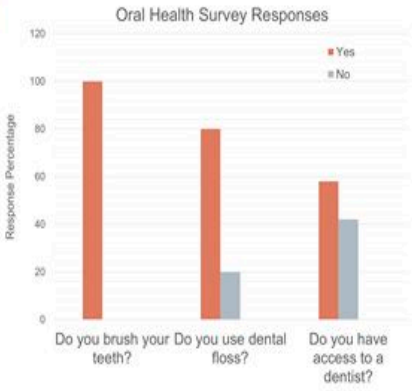
The Roanoke area resettles approximately 200 refugees per year from around the globe. Local pediatricians and dentists who treat this population have observed limited access to healthcare along with a lack of retention of such healthcare. Despite these observations, little has been done to overcome barriers. Formal baseline health assessments for refugee and immigrant children could better identify specific needs of this population.

Objective

This survey aims to collect information from refugee and immigrant populations in the greater Roanoke area to better understand current healthcare access and unmet needs. This information could allow more targeted efforts in the future to improve health care and access. Additionally, these efforts aim to establish relationships that facilitate longitudinal healthcare and build a stronger sense of community for locals and newcomers alike.

Methods

The target population was reached by partnering with organizations with established relationships with refugees and immigrant communities in the Roanoke area. Anonymous surveys were distributed to collect data on health care and safety practices following a health fair held for refugee and immigrant families. Questions from the survey originated from validated screening tools including: Assessment of Knowledge and Attitude and Practice of Parents about Immunization, The Safe Environment for Every Kid (SEEK) Parent Questionnaire, Oral Health Behavior Questionnaire, and Accountable Health Communities Core Health-Related Social Needs Screening. Questions were modified to focus on oral health, safety, comprehension of immunizations, and nutrition. These were translated into the participant's native language by a validated translation service.



Results

Survey respondents included twenty family members with an average household of five from the following countries: Afghanistan, Burundi, Nepal, Sudan, Congo, and Somali. All families acknowledged brushing their teeth on average twice per day. However, 57.9% of subjects (11/19) did not have access to a dentist even though 84% (16/19) admitted to understanding that children should visit a dentist twice per year. All participants reported drinking bottled water. All participants stated they had a working smoke detector in their home, however only 20% (4/20) knew the number for poison control. Lastly, only 15% (3/20) claimed to have chosen not to vaccinate their children due to reasons including allergies and insurance.

Conclusions

Refugee families in our area are aware of the importance of appropriate oral health practices, however many lack appropriate resources to adequately maintain healthy dentition. These surveys also highlighted hesitancy of drinking tap water, thus limiting refugee children's access to fluoridated water. Further, safety education for families should focus on knowledge of local resources. Lastly, these surveys indicate that many refugee families have not chosen to opt out of vaccinations. Overall, these results demonstrate the need to address access to adequate oral health care, a cultural shift toward drinking tap water, and need for improved safety awareness. This data will enable future efforts to better aid the refugee and immigrant population targeted to their needs.

Contact

Dakota Buhrman, BS
Virginia Tech Carilion School of Medicine
60 Market 2 Riverside Circle Roanoke, VA 24016
dakob@vt.edu

Maternal Body Mass Index and Breastfeeding Outcomes: A Systematic Review

Achike, M.M., Old Dominion University

Background: Worldwide overweight and obesity rates in women of reproductive age are rising at an alarming pace. In the United States, the overweight and obesity rates of adult women are 26.9 and 41.1, respectively. Previous researchers have studied the relationship between maternal body mass index and its effect on breastfeeding intention and outcomes. This systematic review examined how maternal body mass index affects maternal breastfeeding intention and subsequent breastfeeding behavior.

Methods: A systematic review was conducted in March and April 2020 in Virginia, using the PubMed and APA PsycNet databases. Studies which examined breastfeeding intention, initiation, duration, exclusivity, and maternal body mass index from the last 10 years (2010-2019) were summarized. These searches resulted in 18 studies.

Results: Of the included studies, several found no differences in breastfeeding intentions across BMI categories. High body mass index was found to be negatively associated with breastfeeding initiation. Twelve studies measured breastfeeding duration and reported differences among BMI categories. Studies also showed obese women are less likely to exclusively breastfeed compared to normal weight women.

Conclusion: Breastfeeding rates across all body mass index categories do not meet the recommended guidelines established by the World Health Organization (WHO) and other public health agencies. Overweight and obese women need additional support to breastfeed longer and exclusively. Targeted and well-designed interventions should be implemented early in the postpartum period when breastfeeding challenges, and the stress of having a new baby, are greatest.

Needs Assessment of Diabetes in Hampton Roads, Virginia Based on Social Determinants of Health

Priyadarshini, P. PhD, MPH, Department of Population Health Sciences, Virginia Tech

Purpose: The purpose of this needs assessment was to understand the relationship between diabetes and social determinants of health using the Virginia Health Opportunity Index (HOI) to identify vulnerable populations at the census tract level.

Methods: Secondary demographic data from the U.S. census related to seven cities in Hampton Roads, Virginia was abstracted. Census tract level diabetes data was obtained from the CDC 500 Cities project. Diabetes prevalence data was linked to the Health Opportunity Index in Virginia. The data was modelled using SPSS.

Results: Years of schooling and material deprivation index was found to be most predictive of diabetes in Hampton Roads, Virginia. About 64% of the variability of crude diabetes prevalence rate could be explained by the model. Census tracts with minority population and low socioeconomic status had higher diabetes prevalence rates.

Conclusion: Education level, employment, and family income affect socioeconomic status and therefore, health. A multilevel approach that includes social and economic interventions will greatly impact the health disparities in diabetes.

Needs Assessment of Diabetes in Hampton Roads - Social Determinants of Health

Priyadarshini Pattath
Department of Population Health Sciences

Background

- Diabetes is a major public health challenge with the distribution of regionality of diabetes varying based on the location within Virginia.
- Relevant to consider the social and economic factors that are the determinants of diabetes along with individual factors.
- Although the average crude rate of diabetes in Virginia is 9%, some of the census tracts report a much higher rate. Neighborhoods in places like Norfolk, Newport News and Portsmouth in Virginia have a diabetes prevalence rate of around 25%.

Socioeconomic Demographics of Hampton Roads-
Chesapeake, Hampton, Norfolk, Portsmouth, Suffolk, Virginia Beach, and Newport News

- Virginia has a population of about 8 million

Figure1: Race distribution in the cities of Hampton Roads

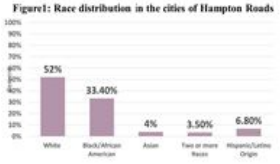


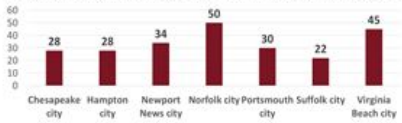
Table 1: Population in Hampton Roads (U.S. Census 2010)

Hampton Road Cities	Population
Chesapeake	222,209
Hampton	137,436
Norfolk	242,803
Portsmouth	95,535
Suffolk	84,585
Virginia Beach	437,994
Newport News	180,719

Figure 2: Income & poverty rate in Hampton Roads Cities

Diabetes in Hampton Roads

Figure3: Number of Census tracts with crude diabetes rate above Virginia average of 9%



Objectives

The purpose of this study was threefold: First, to explain the relationship between diabetes and social determinants of health; second, identify vulnerable populations at the Census tract level using the Virginia Health Opportunity Index (HOI); and (3) to formulate policies for intervention.

Health Opportunity Index

- The HOI is a composite measure of the Social Determinants of Health (the social, economic, educational, demographic, and environmental factors).
- It is comprised of 13 indicators.

The Community Environmental Profile: (1) Air Quality (2) Population Churning (3) Population Weighted Density (4) Walkability	The Consumer Opportunity Profile: (5) Affordability (6) Education (7) Food Accessibility (8) Material Deprivation
Economic Opportunity Profile: (9) Employment Access (10) Income Inequality (11) Job Participation	Wellness Disparity Profile: (12) Access to Care (13) Spatial Segregation

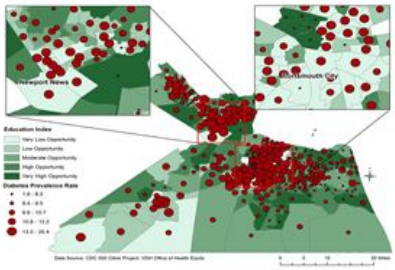
Method

- Secondary data for Chesapeake, Hampton, Norfolk, Portsmouth, Suffolk, Virginia Beach, and Newport News-population was abstracted (U.S. Census, 2010).
- Census tract level Diabetes data obtained from the CDC 500 Cities project.
- Diabetes prevalence data linked to the Health Opportunity Index in Virginia.
- 353 census tracts identified in the seven Hampton Road cities.
- Predictive analysis done using SPSS.

Results

- Years of schooling was found to be most predictive.
- The model included five variable- years of schooling, population churning index, Townsend indicator, high employment access and income inequality index/Gini coefficient.
- About 64% of the variability of crude diabetes prevalence rate could be explained by the model.
- Census tracts with minority population & low SES had higher diabetes prevalence rate.

Figure 4: Diabetes Prevalence rate % Education In Hampton Roads



Conclusion & Next Steps

- Using the VA HOI we can, establish links between health outcomes among individuals who share similar economic, social, and geographical characteristics.
- Education level, employment, and family income affect socioeconomic status and therefore health.
- Multilevel approach that includes social and economic interventions will greatly impact the health disparities in diabetes.
- Limitation of using crude diabetes rate for the population data for only seven cities in Hampton Roads, Virginia.

Select References

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Examining the Association Between Race and Mental Health on Lifetime Frequency of E-Nicotine Use in U.S. Adults.

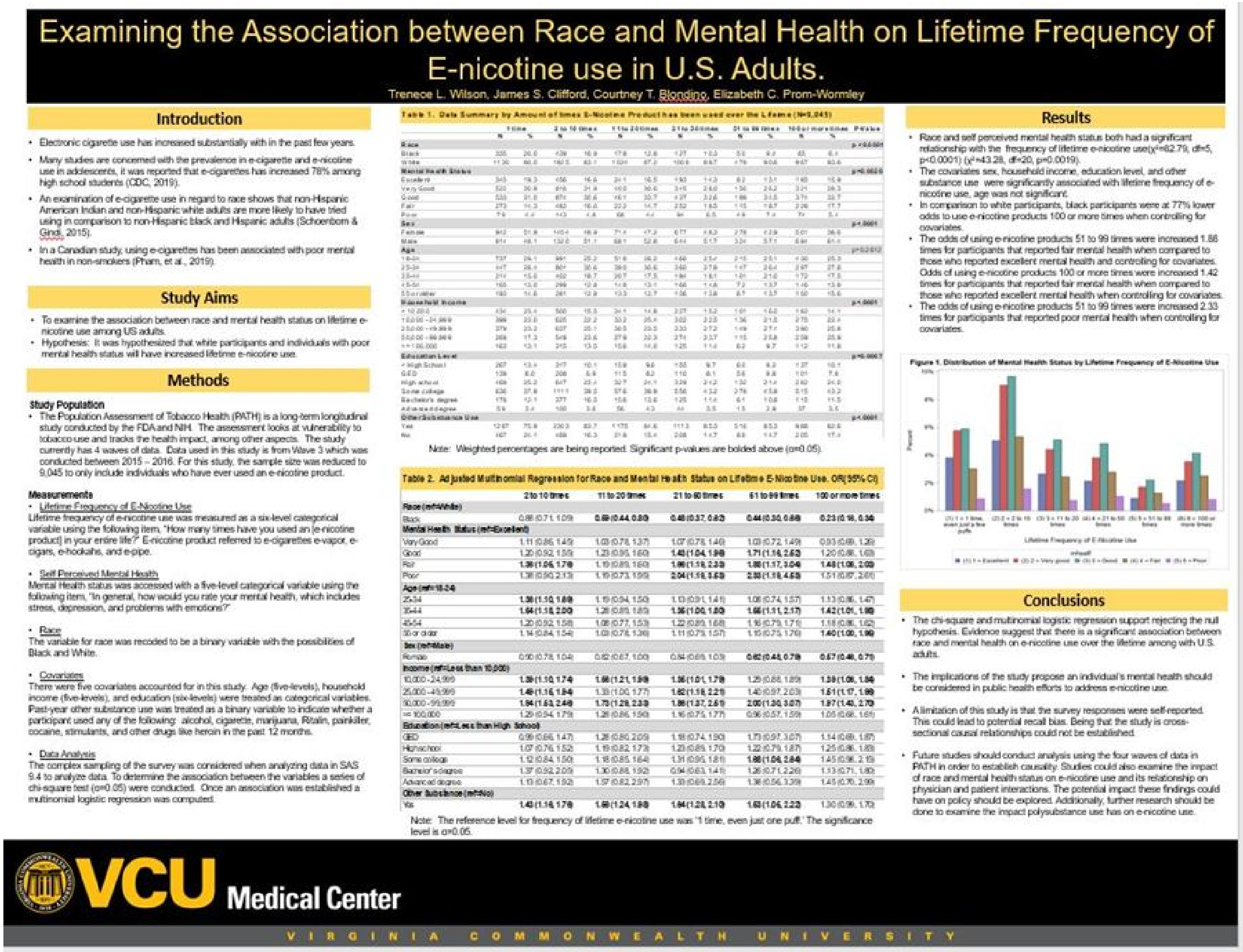
Wilson, T. L., Clifford, J. S., Blondino, C. T., Prom-Wormley, E. C., Virginia Commonwealth University Medical Center

Background: Electronic cigarette usage has increased substantially within the past few years. To date, research suggests Non-Hispanic American Indian communities as well as non-smokers affected with poor mental health outcomes are at greater risk for electronic cigarette use[2,3]. However, it is unclear whether these associations extend to African Americans. This study assesses the degree to which race and mental health status are associated with lifetime frequency of e-nicotine products in a smoking U.S. adult population.

Methods: Data from 9,045 adults aged 18 and over who participated in Wave 3 of the "Population Assessment of Tobacco Health (2015-2016)" and ever engaged in any lifetime electronic nicotine product use were used. Multinomial logistic regression was used to test the associations between lifetime frequency of electronic nicotine and perceived mental health as well as race while accounting for the influence of several covariates.

Results: In comparison to white participants, African American/Black participants had significantly lower odds of engaging in almost all levels of lifetime frequency of electronic nicotine use (OR = 0.23-0.59, $p < 0.05$). Compared with excellent perceived mental health, lower levels of perceived mental health were significantly associated with higher frequency of lifetime electronic nicotine use (OR = 1.43-2.33, $p < 0.05$).

Conclusion: Compared to whites, African Americans/Blacks may be at lower risk for more frequent electronic nicotine use. Further, lower perceived mental health was a risk factor for increased electronic nicotine frequency. Therefore, some factors identified with conventional cigarette use may extend to electronic cigarettes.


Examining the Association between Race and Mental Health on Lifetime Frequency of E-nicotine use in U.S. Adults.
Trenece L. Wilson, James S. Clifford, Courtney T. Blondino, Elizabeth C. Prom-Wormley
Introduction
• Electronic cigarette use has increased substantially with in the past few years.
• Many studies are concerned with the prevalence in e-cigarette and e-nicotine use in adolescents, it was reported that e-cigarettes has increased 78% among high school students (CDC, 2019).
• An examination of e-cigarette use in regard to race shows that non-Hispanic American Indian and non-Hispanic white adults are more likely to have tried using in comparison to non-Hispanic black and Hispanic adults (Schoenborn & Gindi, 2015).
• In a Canadian study, using e-cigarettes has been associated with poor mental health in non-smokers (Pham, et al., 2019).
Study Aims
• To examine the association between race and mental health status on lifetime e-nicotine use among US adults.
• Hypothesis: It was hypothesized that white participants and individuals with poor mental health status will have increased lifetime e-nicotine use.
Methods
Study Population
• The Population Assessment of Tobacco Health (PATH) is a long-term longitudinal study conducted by the FDA and NIH. The assessment looks at vulnerability to tobacco use and tracks the health impact, among other aspects. The study currently has 4 waves of data. Data used in this study is from Wave 3 which was conducted between 2015 – 2016. For this study, the sample size was reduced to 9,045 to only include individuals who have ever used an e-nicotine product.
Measurements
• Lifetime Frequency of E-Nicotine Use
Lifetime frequency of e-nicotine use was measured as a six-level categorical variable using the following item, "How many times have you used an [e-nicotine product] in your entire life?" E-nicotine product referred to e-cigarettes e-vapor, e-cigars, e-hookahs, and e-pipe.
• Self Perceived Mental Health
Mental Health status was accessed with a five-level categorical variable using the following item, "In general, how would you rate your mental health, which includes stress, depression, and problems with emotions?"
• Race
The variable for race was recoded to be a binary variable with the possibilities of Black and White.
• Covariates
There were five covariates accounted for in this study. Age (five-levels), household income (five-levels), and education (six-levels) were treated as categorical variables. Past-year other substance use was treated as a binary variable to indicate whether a participant used any of the following: alcohol, cigarette, marijuana, Ritalin, painkiller, cocaine, stimulants, and other drugs like heroin in the past 12 months.
• Data Analysis
The complex sampling of the survey was considered when analyzing data in SAS 9.4 to analyze data. To determine the association between the variables a series of chi-square test (α=0.05) were conducted. Once an association was established a multinomial logistic regression was computed.
Table 1. Data Summary by Amount of times E-Nicotine Product has been used over the Lifetime (N=9,045)
Note: Weighted percentages are being reported. Significant p-values are bolded above (α=0.05).
Table 2. Adjusted Multinomial Regression for Race and Mental Health Status on Lifetime E-Nicotine Use. OR(95% CI)
Note: The reference level for frequency of lifetime e-nicotine use was "1 time, even just one puff." The significance level is α=0.05.
Results
• Race and self perceived mental health status both had a significant relationship with the frequency of lifetime e-nicotine use(χ²=62.79, df=5, p<0.0001) (χ²=43.28, df=20, p=0.0019).
• The covariates sex, household income, education level, and other substance use were significantly associated with lifetime frequency of e-nicotine use, age was not significant.
• In comparison to white participants, black participants were at 77% lower odds to use e-nicotine products 100 or more times when controlling for covariates.
• The odds of using e-nicotine products 51 to 99 times were increased 1.88 times for participants that reported fair mental health when compared to those who reported excellent mental health and controlling for covariates. Odds of using e-nicotine products 100 or more times were increased 1.42 times for participants that reported fair mental health when compared to those who reported excellent mental health when controlling for covariates.
• The odds of using e-nicotine products 51 to 99 times were increased 2.33 times for participants that reported poor mental health when controlling for covariates.
Figure 1. Distribution of Mental Health Status by Lifetime Frequency of E-Nicotine Use
Lifetime Frequency of E-Nicotine Use
Conclusions
• The chi-square and multinomial logistic regression support rejecting the null hypothesis. Evidence suggest that there is a significant association between race and mental health on e-nicotine use over the lifetime among with U.S. adults.
• The implications of the study propose an individual's mental health should be considered in public health efforts to address e-nicotine use.
• A limitation of this study is that the survey responses were self-reported. This could lead to potential recall bias. Being that the study is cross-sectional causal relationships could not be established.
• Future studies should conduct analysis using the four waves of data in PATH in order to establish causality. Studies could also examine the impact of race and mental health status on e-nicotine use and its relationship on physician and patient interactions. The potential impact these findings could have on policy should be explored. Additionally, further research should be done to examine the impact polysubstance use has on e-nicotine use.
VCU Medical Center
VIRGINIA COMMONWEALTH UNIVERSITY

Assessing and Evaluating the Health Status of the Hispanic Population in Laurel, Maryland

Ojo A. A, Starkey M., and Lane R., Department of Public & Community Health, Liberty University

Background/Purpose: Chronic diseases have been a major health problem in the United States. Most important is the rising figures of new cases reported yearly for the Hispanic ethnic minority group living in the United States which accounts for about 40-50% cause of mortality in both sexes among the Hispanic immigrants. The purpose of this research project was to assess and evaluate the top health problems facing Hispanics in Laurel, MD using three assessment measurement tools.

Methods: The methodology employed to assess and evaluate the greatest health problems among the study population included researching into government data**,** conducting a community survey using a questionnaire**,** and setting up focus groups using a scale ranking chart.

Results: Primary results of this study showed that cardiovascular diseases were ranked as the leading health problem of concern with high blood cholesterol, hypertension, and diabetes mellitus all preventable health conditions predominant in the 31-54years age groups of the study population. The most accountable risk factor identified was poor behavioral practices mainly due to the inadequate intake of fruits and vegetables.

Conclusion: In reducing the aftermath of chronic diseases among the Hispanic ethnic minority group, measures to be taken will be directed towards ways to improve the population's knowledge on healthy lifestyles and efforts to limit barriers created by factors such as acculturation and limited access to health services. This goal will be accomplished through training community health workers on how to carry out educational training on healthy lifestyles and connecting the community to both curative and preventive health services.

LIBERTY UNIVERSITY
DEPARTMENT of PUBLIC & COMMUNITY HEALTH

ASSESSING AND EVALUATING THE HEALTH STATUS OF THE HISPANIC POPULATION IN LAUREL MARYLAND

Ojo A. A., M.D, M.P.H., Starkey M., B.Sc, M.P.H., Lane R., M.D, M.P.H & T.M, F.A.C.P.M

Abstract

Introduction: Chronic diseases have been a major health problem in the United States, most important is the rising figures of new cases reported yearly for the Hispanic ethnic minority group living in the United States. It accounts for about 40-50% cause of mortality in the Hispanic immigrants.

Methods: The objective of this research project is to assess and evaluate the top health problems facing Hispanics in Laurel, MD using three assessment measurement tools. The methodology employed in this research project to assess and evaluate the greatest health problems among the study population include; researching into government data, conducting a community survey using questionnaire, and setting up focus group using a scale ranking chart.

Results: The primary results of this study showed that cardiovascular diseases were ranked as the leading health problem of concern with high blood cholesterol, hypertension, and diabetes mellitus, all preventable health conditions predominant in the 31-54years age groups of the study population. The most accountable risk factors identified from the study is poor behavioral practices mainly inadequate intake of fruits and vegetables from limited knowledge. In addition, the result from the demographic information for the individual who participated in the research showed that fewer participants utilized health care services. The reason for the low utilization of health services was attributed to the lower numbers of participants who identified with having health insurance.

Conclusion: In reducing the aftermath of chronic diseases among the Latino ethnic minority group, measures to be taken will be directed towards ways to improve the population's knowledge on healthy lifestyle and efforts to limit barriers created by factors such as acculturation and limited access to health services this goal will be accomplished through training community health workers on how to carry out educational training on healthy lifestyle and connect the community to both curative and preventive health services.

Introduction

The burden of chronic diseases in the United States has adversely impacted the Hispanic ethnic minority groups living in the different states within the country. The rapid growth in this population of the Hispanic ethnicity has been a major contributory key drive to the country's population growth over a decade ago. As documented in the 2014 census, an estimated figure of 55 million representing 17.4% was ascribed to the Hispanic population as a percentage of the total United States population (Maryland Department of Health and Mental Hygiene, 2013; Prince George's County Health Department, 2016).

The health problems associated with the Hispanic community have been a major concern of discussion in many articles of review, factors attributed to the dwindling health status yearly have also been discussed in the literature. Among the leading cause of death in this ethnic group are chronic diseases. Hypertension, cardiovascular disease, diabetes mellitus, stroke and cancer account for the top 5 causes of mortality along with obesity and overweight (Maryland Department of Health and Mental Hygiene, 2013).

Methods

Three distinct approaches were used. The first approach researched government reported data on the leading cause of mortality and morbidity among the Hispanic population in Prince George County, Maryland. Government data on health problems facing Hispanic study were accessed from the Maryland Department of Health and Mental hygiene (2013). The second approach surveyed a large Hispanic church (ICR) located in Laurel. The questionnaire used assessed participant's knowledge about their health concerns. Finally, focus group of 20 men, women, younger children, community leaders and health workers (Greaney, Lees, Lynch, Sebelia & Greene, 2011). Each participant to rank the top health problems of concern and its severity using a simple chart. Participants responses were rated on a scale of 1 – 5 (one being the least possible response and five, the highest possible response) (Greaney, Lees, Lynch, Sebelia & Greene, 2011; Mier, Smith, Carillo-Zuniga, Wang, Gaza & Ory, 2012).

Fruit & Vegetable Consumption	N (%)
2-3 times per day	4.2
3-5 times per week	37.6
1-2 times per week	8.4
1 time per week	49.8
Total	**100%**

Physical activity	N (%)
At least 3 times per week	25.0
1-3 times per week	12.5
A couple times a month	41.7
Never	20.8
Total	**100%**

Table 1: Data for survey participants in a Hispanic church in Laurel, Maryland who reported intake of fruits and vegetables and regular exercise

Health conditions	Ranking
High Blood Cholesterol	10
Hypertension	9
Obesity	9
Diabetes Mellitus	8
Cancer	8
Emotional	8
Drugs	8
Respiratory Problems	7
Malnutrition	7
Alcohol	7

Table 2:Data ranking the focus groups of diseases of major concern among study participants.

Results

The leading causes of mortality for the Hispanic community in Laurel, Maryland from the 2013-2016 Maryland Office of Minority Health and Health Disparities in the Maryland Department of Health provide a baseline for program development.

In addition, Table 1 showed results relating to participant lifestyle, a lower proportion of participants answered to eating fruits and vegetables 1 per week representing 50% of total participants who answered the question, while 4.2% reported eating the recommended daily requirement of 2-3 per day. In reporting participant exercise only 25% of the total number who completed the survey complied with the recommended physical activity in form of exercise, 20.8% do not exercise (Tables 1 and 2).

To establish a clear relationship between healthy lifestyles and development of chronic medical conditions among participants, a multivariate analysis using chi-square test of independence was performed using the small population sample size. There was no statistical significance difference between knowledge of healthy lifestyle between sexes (p=0,086, alpha = 0.05).

Conclusion

In reducing the aftermath (unexpected sudden death) of chronic diseases among the Latino ethnic minority group living in Laurel, MD measures to be taken will be directed towards ways to improve the population knowledge on healthy lifestyle and efforts to limit barriers created by factors such as acculturation and limited access to health insurance and this goal will be achieve by the help of the International Help team in training community health workers within the Hispanic community of Laurel on how to carry out educational training on healthy lifestyle and also to connect the community to both curative and preventive health services.

Even though this study is limited, chronic disease ranking that depicted, high blood cholesterol, hypertension and diabetes mellitus causative agents of unexpected sudden death need immediate attention of government.

References

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Maternal and Child Health Assessment Plan

Ogbozor, I.C. MPH, Eastern Virginia Medical School, Old Dominion University

Background: Virginia Department of Health's (VDH) mission is to promote the well-being of all people in Virginia. The State Health Assessment Plan helps VDH with opportunities to improve the health outcomes of its citizens by getting residents' recommendations on what can be improved upon to enhance wellness. The goal of this project was to examine the strengths and weaknesses of the services offered in Virginia to children with special needs and provide recommendations to address them.

Methods: Reviewed 178 key informant interview responses and 17 focus groups conducted within six population domains.

Results: Findings from the analysis of key informant interviews and focus group responses showed that services that would like to be improved differed within the population domains. The Pregnant Women population group found there is a strong need for childcare and before and after school care. The Adolescent's population group findings showed that sexual health care education provided by public schools is inadequate. The Women of Reproductive Age group found lack of transportation, living in a rural area, being a woman of color, economic and insurance discrimination, language, and cultural barriers were the main issues. The findings for the Male population group showed that there is a disconnect in awareness and behavior in preventing and managing chronic diseases and poor health outcomes.

Conclusion: Some of the proposed recommendations are to improve adolescent health to include mental health services that address youth planning. Improvements should be made to address childcare, transportation, and financial well-being with key stakeholders in all population domains.

Maternal and Child Health Assessment Plan

Master of Public Health EVMS | ODU

VDH Virginia Department of Health — Protecting You and Your Environment

Ifeoma C. Ogbozor, MPH
Graduate Program in Public Health, Eastern Virginia Medical School| Old Dominion University

Introduction

Virginia Department of Health's(VDH) mission is to promote the well-being of all people in Virginia. The State Health Assessment plan helps VDH with opportunities to improve the health outcomes of its citizens by getting residents' recommendations on what can be improved upon to enhance wellness. The goal of this project was to examine the strengths and weaknesses of the services offered in Virginia and provide recommendations to address them

Methods & Results

- Reviewed 178 key informant interview responses and 17 focus groups conducted with six population domains.
- The population domains includes the following: pregnant women, infants and mothers of young children; children and youth with special health care needs; adolescents; women of reproductive age; men; and maternal and child health care providers and systems in Virginia.

Findings

Pregnant women
- Childcare is unachievable for some families because it is too expensive or hard to find
- Pregnant women want their entire medical and mental health needs met.

Child with special Healthcare Needs
- Afterschool, summer, and respite (temporary relief) care are inconsistent across localities and expected level of support is lacking.
- Therapies and support services are challenging to access but effective when secured.

Adolescents
- Issues impacting youth include poverty, health insurance, pollution, safety and gun violence, and child abuse and neglect, underfunded schools and no job training
- Wait times, lack of licensed and qualified mental health and addiction providers, and travel time to reach necessary services continue to limit adolescent's ability to manage depression, anxiety, stress, loneliness, and use of alcohol and drugs to cope.

Discussion

Based on the results of the interview, the transportation issue is a hindrance for Virginian n residents. Some of the proposed recommendations are to improve adolescent health to include mental health services that address youth planning. Improvements should be made to address childcare, transportation, and financial well-being with key stakeholders in all population domains.

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I would like to thank Jada Harris, MPH, for connecting me with my preceptor for my practicum. I would also like to thank Leslie Hoglund, PhD MEd, my preceptor for her mentorship throughout the practicum project. Thank you to Dr. Richard Lane and Christine Kennedy, for your help with my project. Thank you to my advisor Dr. Yap for your mentorship and to members of VDH; thank you all for allowing me to work with you.

Implementing the Physical Activity and Education Program (COPP) to Prevent Obesity in Chesapeake, VA

Monk, B., BA, MA, Graduate Program in Public Health, Eastern Virginia Medical Center, Old Dominion University Center for Global Health.

Background/Purpose: Twenty percent of children living in Chesapeake, Virginia are obese which places this community at a high risk of the children becoming adults with more detrimental health issues. In addition, research has shown that children from lower-incomes are at a disproportionately higher chance of being obese. The economic wealth of Chesapeake, VA depends on lowering this percentage and decreasing the prevalence of obesity in this community.

The goal of the Chesapeake Obesity Prevention Program (COPP) is to increase access to healthier foods and the amount of in-classroom physical activity for children aged 5-9 who are most vulnerable to obesity. Our hope is that the program will reduce the prevalence of obesity for this cohort. This will be done in collaboration with city leaders, parents, school administrators/teachers and other health professionals (school counselors etc.,).

Methods: A review of published articles on the impact of childhood obesity was conducted along with an analysis of the Chesapeake, VA 2016 Comprehensive Plan for Children and Youth. We also created and utilized a logic model as a framework to depict the relationship between the COPP program activities and it's intended effects.

Results: A Physical Activity Training Manual was created to be used by all members of the COPP program along with a training brochure for classroom physical activity facilitators in Chesapeake, VA schools. Parent meal cards were also created in order to educate parents on healthy meals that they can make in the home setting with their children. Lastly, a bikeshare, community garden, and food vendor timelines were developed.

Conclusion: The next steps are to determine school locations that would benefit the most from COPP and possibly implement small pilot programs, locate possible funding sources, consider grant proposal/development and identify Chesapeake City Officials with similar interests that would potentially advocate for our program.

Implementing the (COPP) Physical Activity and Education Program to Prevent Obesity in Chesapeake, VA

Brianna Monk, BA, MA
Graduate Program in Public Health, Eastern Virginia Medical School
Old Dominion University, Norfolk, VA; The ODU Center for Global Health

Abstract and Introduction

The Center for Global Health (CGH) at Old Dominion University is a centralized hub aimed at providing the local community with global health resources, cultivating new research and educational activities and working with community partners to address global health issues. Recently, the CGH partnered with the city of Virginia Beach to do an analysis of the Let's Move Project aimed at reducing childhood obesity in the city of Virginia Beach.

However, in the neighboring city of Chesapeake, almost one third of the city is under the age of nineteen and twenty percent of this one-third are considered to be obese. While physical activity is not required in the state of Virginia, research has shown that increased classroom physical activity and access to healthy foods is efficient in reducing the incidence of obesity. The purpose of the Chesapeake Obesity Prevention Program (COPP) is to address the obesity epidemic in Chesapeake, VA (Bureau, 2018).

DEMOGRAPHIC ESTIMATES: 2017	ESTIMATE	PERCENT OF THE TOTAL POPULATION
Under 5 years	14,783	8.6%
5 to 9 years	15,936	7.2%
10 to 14 years	15,338	6.9%
15 to 19 years	18,217	8.2%

Objectives

To use the logic model approach to increase physical activity and access to healthy foods served to children 5 to 9 years of age.

Objective 1

Reduce the prevalence of obesity in children ages 5-9 living in Chesapeake, VA. (Interpersonal & Organizational level)

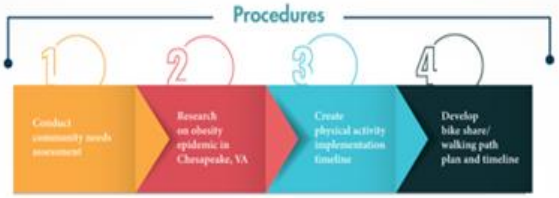
Objective 2

Increase access to healthy foods for children ages 5-9 living in Chesapeake, VA. (Policy, Organizational & Interpersonal Level)

Objective 3

Develop policies that would provide children ages 5-9 living in Chesapeake, VA with the safety and tools to lead a healthier lifestyle. (Policy Level & Community level)

Procedures



Method

- Review of published articles on impacts of childhood obesity
- Analysis of city of Chesapeake, VA 2016 Comprehensive Plan for Children and Youth
- Discussions with CGH staff on childhood obesity
- Utilized logic model as framework to depict relationship between COPP program activities and its intended effects

Results

- Physical Activity Training Manual
- Parent Meal Cards
- Bikeshare, Community Garden and Healthy Food Vendor Plans

Future Directions

- Determine locations that would benefit the most from COPP program and could possibly run a small pilot program.
- Locate possible funding sources and consider grant proposal & development
- Identify City Officials with similar interests that may support the initiatives of the program

Acknowledgements

I would like to thank Dr. Praveen K. Durgampudi my practicum advisor from Eastern Virginia Medical School.
I would also like to thank Dr. Michele Kekeh my practicum preceptor throughout the semester from the Old Dominion Center for Global Health.

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Parental, Peer and School-Related Factors Associated with Perceived Risk of Harm in Monthly Cannabis Use Among US Adolescence: 2017 National Survey on Drug Use and Health (NSDUH)

Mariani, A.C., Department of Family Medicine and Population Health, Virginia Commonwealth University

Background: There has been an increase in cannabis use among U.S. adolescents over the past decade, which may be contributed by the steady decrease in their perception of cannabis use risk.

Purpose: The purpose of this study was to evaluate the parental, school, and peer influence as protective factors in the adolescents' perception of risk in monthly cannabis use.

Methods: The 2017 National Survey on Drug Use and Health (NSDUH) was used. A subsample of adolescents between the ages of 12-17 who responded to all survey questions relevant to the study were included (N=12,021). The study outcome was perception of risk of harm in monthly cannabis use as self-reported by adolescents between ages 12 and 17. The factors of interest were parental monitoring and support, perception of school importance, extracurricular activity participation, peer attitudes, and perception of peer use.

Results: Of 12,021 eligible adolescents, about 80% perceived risk of harm in monthly cannabis use. Approximately half of adolescents were Non-Hispanic White (53%) and male (51%), with a mean age of 15 (SD=0.02). Multiple logistic regression modeling suggested that the perception of risk in monthly cannabis use was significantly associated with being younger, being female, high household income, no history of substance use, positive school perception, participating in extracurricular activities, peer disapproval of cannabis use, and no perception of peers using cannabis.

Conclusion: Adolescents that perceived risk of harm in monthly cannabis use had low perception of peer use, high perception of peer disapproval of cannabis use, high perception of school importance, and participated more in extracurricular activities. Substance use prevention programs targeting adolescent attitudes and beliefs should leverage peer influence, extracurricular activities, and enhance schoolwork to be more meaningful are strongly recommended.

Parental, peer and school-related factors associated with perceived risk of harm in monthly cannabis use among US adolescence: 2017 National Survey on Drug Use and Health (NSDUH)

Abigail C. Mariani, Department of Family Medicine and Population Health, Virginia Commonwealth University

BACKGROUND

Adolescents have high risk of becoming addicted to cannabis and are more susceptible to having consequences on brain development and mental health problems due to cannabis use. Despite these risks, there has been a steady increase in cannabis use among U.S. adolescent in the past decade. A contributing factor to this could be the steady decrease of perception of cannabis use risk.

OBJECTIVE

To evaluate the parental, school and peer influence as protective factors in the perception of risk in monthly cannabis use.

METHODS

SAMPLE

2017 National Survey on Drug Use and Health (NSDUH) was used. Subsample of adolescents between 12 and 17 years old who responded to all survey question relevant to the study were included (N=12021).

OUTCOME

Adolescents perceiving risk of harm physically or in other ways in monthly cannabis use.

FACTORS OF INTEREST

- *Parental Factors.* Parental monitoring and parental support
- *Peer Factors.* Peer attitudes and perception of peer use
- *School Factors.* Perception of school importance and participation in extracurricular activities

COVARIATES

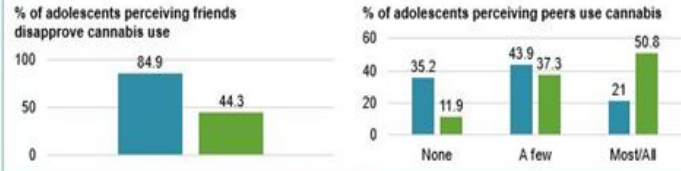
- Demographic variables (gender, age, race/ethnicity, household income)
- History of lifetime substance use (SU)

ANALYSES

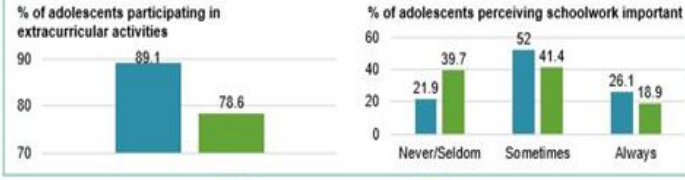
Chi-square and Wilcoxon tests were used to assess differences in adolescents perceiving risk. Multiple logistic regression modeling was used to analyze perceived risk in monthly cannabis use. Survey procedures were used to account for complex sampling.

DIFFERENCES IN PARENTAL FACTORS

DIFFERENCES IN PEER FACTORS



DIFFERENCES IN SCHOOL FACTORS



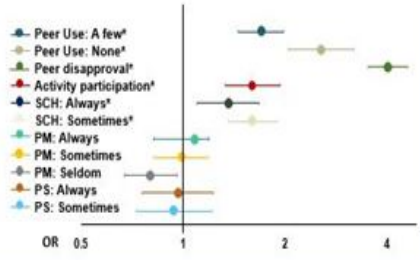
LEGEND: PERCEIVED RISK PERCEIVED NO RISK

LOGISTIC REGRESSION MODEL RESULT

Factors associated with perceived risk of harm in monthly cannabis use adjusting for demographic characteristics and lifetime SU

- Peer use: Perception of peers using cannabis (ref: Most/All)
- SCH: Perception of school importance (ref: Never/Seldom)
- PM: Parental monitoring (ref:Never)
- PS: Parental support (ref:Never/Seldom)

*p<0.05



DESCRIPTIVE STATISTICS

	Perceived risk n=9591; 80.6%	No risk n=2430; 19.4%
Age[a]	13.9 ± 0.03	15.1 ± 0.06
Male[b]	4692 (48.7%)	1388 (56.4%)
Race/Ethnicity[b]		
NH White	5154 (53.3%)	1304 (53.4%)
NH Black	1184 (12.6%)	326 (14.2%)
Hispanic	2086 (23.6%)	542 (25.1%)
NH Other/ Multi-racial	1167 (10.4%)	258 (7.2%)
Household Income[b]		
<$20k	1406 (13.9%)	410 (18.2%)
$20-49k	2591 (25.8%)	782 (31.2%)
$50-74k	1415 (13.5%)	379 (14.2%)
>$75k	4179 (46.8%)	859 (36.4%)
Lifetime SU[b]	4335 (44%)	1859 (74.7%)

[a] Median ± STD [b] N (weighted column %)

CONCLUSION/IMPLICATION

- **Adolescents that perceived risk of harm in monthly cannabis use had low perception of peer use and high perception of peer disapproval of cannabis use, high perception of school importance and participate in extracurricular activities.**
- **Parental monitoring and support were not significantly associated with perception of risk of harm.**
- **Effective substance use programs targeting adolescent attitudes and beliefs should utilize peer influence, extracurricular activities and meaningful schoolwork are strongly recommended.**

ACKNOWLEDGMENTS

Thank you, Juan Lu, PhD, for the guidance and support in this research project. Additionally, a special thank you to Maria Thomson, PhD and the Thomson Lab for the consistent support in the advancement of my writing and research skills.

Anxiety and Depression in Hispanic and Non-Hispanic African American Obese Children in the United States

Hunt, M.M., Jensen-Wachspress, A.K., Holt, N.M., MPH, DrPH, Master of Public Health, Eastern Virginia Medical School

Background: Social behavioral determinants of health are critical considerations for behavioral change, such as reducing the prevalence of childhood obesity. Mental health factors like anxiety and depression can influence one's determination and behavior. In this study, we aim to investigate the association between anxiety and depression and obesity in African-American and Hispanic children in the United States.

Methods: We investigated the prevalence of anxiety and depression among non-Hispanic African-American and Hispanic obese (BMI > 95th age and sex-specific percentile) children aged 0-17 years (N=21,599) using data from the 2017 National Survey of Children's Health (NSCH).

Results: Out of the 21,599 children, 50.2% were found to be obese (BMI > 95th percentile of age and sex-specific CDC guidelines). Of the African American children, 11.5% were found to be obese, with 4.8% noting current anxiety and 2.9% with depression. Within the Hispanic children, 8.7% were shown to be obese, with 7.2% noting current anxiety and 3.7% with depression. A two-way chi-square statistical test was performed ($p = 0.05$) and all variables were found to have a non-significant association ($p > 0.05$).

Discussion/Conclusion: We did not find a significant association between childhood obesity and anxiety and depression in African-American and Hispanic children ($p > 0.05$). We therefore recommend further investigation among African-American and Hispanic obese children and other factors of social determinants of health. Future investigations would help public health officials understand and revise intervention programs to reduce the prevalence of childhood obesity via use of social determinants of health in vulnerable communities.

Anxiety and Depression in African-American and Hispanic Obese Children in the United States

Mackenzie Hunt, Arianna Jensen-Wachspress, and Nicole Holt, MPH, DrPH
Master of Public Health, Eastern Virginia Medical School

Introduction

Childhood obesity is defined as a body mass index (BMI) at or above the 95th percentile of the Centers for Disease Control (CDC) sex-specific BMI-for-age growth charts.[1] The prevalence of childhood obesity is 18.5% and has affected roughly 13.7 million children and adolecents.[2] Among children, Hispanic and non-Hispanic blacks statistically have a higher obesity prevalence than non-Hispanic whites.[3] The disease has increased throughout the 21st century, indicating the urgency in addressing the endemic.

Obesity is a risk factor for various chronic diseases ranging from diabetes to complications related to cardiovascular disease to musculoskeletal issues.[4] Risk factors for obesity are dependent on an individual's genetics, behavior, and community influence; children are more likely to be obese if their environments do not support healthy eating habits or opportunities for physical activity.[4] Literature suggests that preventative measures to reduce the prevalence of disease(s) is not only more economically feasible but can also contribute to a healthier quality of life, with less disability-adjusted life years (DALYs).[5]

Several interventions have already been identified as effective in addressing obesity. Some current identified interventions include regulating labeling on food products to facilitate consumer knowledge, promoting physical activity in work places, and offering counseling for dietary changes.[6] However, a knowledge gap still exists in identifying groups of highest need. Addressing the groups of highest need would help interventions be better formulated and implemented to produce the most benefit. Our objective would be to figure out what factors are currently known to identify high risk groups such as race and gender and build on that to evaluate what other variables such as anxiety and depression that may help us identify these types of groups nationwide.

Purpose

The purpose of this study is to determine if there a significant association between mental health factors such as anxiety and depression among African-American and Hispanic obese children.

Methods

Data used for this cross-sectional study came directly from the 2017 National Survey of Children's Health (NSCH) (N = 21,599). The National Survey of Children's Health is sponsored by the Health Resources and Services Administration's (HRSA) Maternal and Child Health Bureau (MCHB) under the U.S. Department of Health and Human Services (HHS). The survey provides detailed data regarding health, well-being, and access to amenities for non-institutionalized children, ages 0-17 years.

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Results

Out of the 21,599 non-institutionalized children surveyed, 50.2% were reportedly obese (BMI > 95th percentile of age and sex-specific CDC guidelines). 11.5% of African American children were obese, with 4.8% noting current anxiety and 2.9% with depression. 8.7% of Hispanic children were obese, with 7.2% noting current anxiety and 3.7% with depression. We used a two-way chi-square ($p = 0.05$) statistical test to investigate a significant correlation between obesity and anxiety and obesity and depression in African-American and Hispanic children. All p-values were greater than the accepted p-value ($p > 0.05$), indicating that there was not a significant correlation between these variables.

Fig. 1-3: percentage of obesity, anxiety, and depression prevalence in African-American and Hispanic children

Fig 1: Obesity (BMI > 95th percentile of age and sex-specific CDC guidelines)

Race	N	Percentage (%)
African-American (non-Hispanic)	1,365	11.5
Hispanic	724	8.7

Fig. 2: Anxiety Currently

Race	N	Percentage (%)
African-American (non-Hispanic)	1,365	4.8
Hispanic	2,470	7.2

Fig 3: Depression Currently

Race	N	Percentage (%)
African-American (non-Hispanic)	1,365	2.9
Hispanic	2,470	3.7

Figures 4 and 5: p-values from 2-way chi-square statistical tests for childhood obesity and anxiety and childhood obesity and depression.

Fig. 4: Childhood Obesity and Anxiety

Race	p-Value
African-Americans	0.786
Hispanics	0.772

Fig 5: Childhood Obesity and Depression

Race	p-Value
African-Americans	0.107
Hispanics	0.620

Discussion

While our results indicated that a significant association does not exist between African-Americans and Hispanic obese children with anxiety or depression, a significant association existed on a national level between general childhood obesity and anxiety and general childhood obesity and depression ($p = 0.000$). To determine if a significant relationship exists between childhood obesity and anxiety and childhood obesity and depression, different individual, interpersonal, or community factors in social determinants of health would need to be considered.

Further, we recommend that the prevalence of childhood obesity in African-American and Hispanic communities are also examined through different factors of social determinants of health. A follow-up investigation with a focus on vulnerable, obese minorities would not only help public health officials gain an understanding of social determinants of health within the populations but it would also help in the re-evaluation of intervention programs targeting childhood obesity.

Conclusion

Using data from 2017's National Survey of Children's Health, we investigated the prevalence of anxiety and depression among African-American and Hispanic obese children. Of the 21,599 children who were surveyed, 50.2% were found to be obese. While we did not find a significant correlation of anxiety and depression among African-American and Hispanic obese children ($p > 0.05$), a significant correlation existed between national childhood obesity and anxiety and national childhood obesity and depression ($p = 0.000$). We recommend that further investigation of various social behavior of health factors are examined among African-American and Hispanic obese children. Follow-up examination of specific communities would not only help public health officials better understand driving factors of social determinants of health but would also assist with specific intervention programs for targeted, vulnerable communities. In turn, this could help reduce the prevalence of childhood obesity among various non-institutionalized communities.

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Is Gabapentin Related to Opioid Overdose Deaths in the US for 2017?

Omali, Jill, PharmD, ACCP Critical Care PRN, Walmart Pharmacy, Farmville, Virginia, and Volunteer Clinical Pharmacist, Crossover Health Clinic, Richmond, Virginia, USA.
Erah, Patrick, Ph.D Professor of Clinical Pharmacy and Pharmacy Practice, Faculty of Pharmacy, University of Benin, Benin City, Nigeria
Pounds, Teresa, PharmD, BCNSP Clinical Pharmacy Manager; Pharmacy Residency Program Director, Atlanta Medical Center – Tenet Healthcare System, Clinical Assistant Dean for Clinical Pharmacy Education, Mercer University College of Pharmacy, GA, USA
Egbujiobi, Leo, RPh MD Ex President, NAPPSA Inc., Cincinnati, OH, USA

Background: Gabapentin abuse (often patient-initiated), and misuse (often prescriber-initiated), is a public health concern. One in every three opioid overdose deaths in the US is linked to gabapentin. From 2011– 2017, gabapentin was top of fifteen drugs involved in opioid overdose deaths.

Purpose: The purpose of this study was to validate Gabapentin's Schedule V reclassification in the US states with analyzable data, and the screening for appropriateness of its off-label prescribing by healthcare providers.

Methods: Record-level data on electronic files from death certificates on CDC WONDER Online Database, compiled by the Centers for Disease Control and Prevention's (CDCs) National Center for Health Statistics (NCHS) for 2017, were analyzed. The opioid overdose deaths involving gabapentin coded T42.6 was investigated with ICD–10–CM (International Classification of Diseases, Tenth Revision, Clinical Modification). Publications on gabapentin's off-label use between 2014-2018 in the US opioid overdose deaths in 2017 by eight different authors were reviewed for power, clinical outcomes, and evidence level classification backing the off-label prescribing trends.

Results: Pharmacists' education is crucial in clinicians successfully adapting to the uncertainties of this threat. The top five states by the ranks (%) were Kentucky (21.38), Utah (18.86), Nevada (14.08), North Carolina (11.88), and Georgia (9.76). Of the twelve outcomes for gabapentin's off-label prescribing (misuse) in (%), five were weak (41.67), four were negative (33.33), and three were positive (25).

Conclusion: More US states must reschedule gabapentin Schedule V. Online registries with easily retrievable data correctly tracking diversion, misuse, and abuse, are vital. The off-label prescribing of gabapentin must be restricted to level I, II, or III evidence from 3 or more quality studies in scenarios where it is not the drug of choice but no better alternative exists.

Perceptions of Mindfulness-Based Approaches & the Impact on Resilience of Graduate Students and Healthcare Faculty

Carper, L., Neiser, T., Reid, H., & Wenos, J., College of Health & Behavioral Studies, James Madison University

Purpose: The purpose of this study was to determine the value of a 10-day mindfulness-based app in alleviating stress experienced by graduate students, to determine the value of mindfulness to healthcare faculty members, and to better understand resilience among first year graduate students.

Methods: Phase A consisted of a pilot study on first year graduate students in an Occupational Therapy (OT) program (n=4) using a mindfulness-based meditation application called Headspace. During Phase A, participants completed online surveys about attitudes of mindfulness, perceived stress, satisfaction with life, and resiliency at pre/post intervention. During Phase B of the study, student participants of an OT graduate program cohort (n=22) completed a paper/pencil survey on perceived stress and resilience. During Phase C, a group of health-related faculty (n=10) completed an online survey regarding mindfulness practices.

Results: Phase A- Headspace intervention, participants (n=12) experienced an attrition rate of 67%. Four participated in the pre-test and another participant dropped before completing the post-test. Descriptive statistics were conducted in addition to a Spearman rank-order correlation to determine if a relationship existed between scores on Resiliency and Perceived Stress scales following intervention by OT students. There was no statistically significant correlation between Resilience and Perceived Stress among first year OT students ($r_{s\,(1)} = .667$ $p > .05$). Phase B survey results (100% return rate) revealed 100% (22) of OT students agreed the semester was mentally and emotionally challenging, and 50% of students (11) reported effective ways to cope while 50% (11) felt ambivalent/disagreed they were able to cope. The most frequently identified strategies used included social engagement, entertainment, introspection, exercise, and sleep/rest. Phase C survey results (34% return rate) showed 100% (10) of faculty respondents agreed or strongly agreed that mindfulness-based strategies are an effective use of time and benefit health-care professionals and their clients; however, only 50% (5) agreed or strongly agreed to implementing mindfulness in their classrooms.

Conclusion: Phase A: Students recognized awareness as a key component of mindfulness. Students were better able to cope, but were unhappy with life during a stressful time.

Phase B: Only half of students were able to cope effectively. Decreased coping was due to changes in motivation, perceived lack of control, and feeling incapable.

Phase C: Despite unanimous belief in the benefits of mindfulness, only half of health-related university faculty survey respondents implement mindfulness in classrooms.

JAMES MADISON UNIVERSITY

Perceptions of Mindfulness-based Approaches & the Impact on Resilience of Graduate Students and Healthcare Faculty

Lauren Carper, Taylor Neiser, Holly Reid, and Dr. Jeanne Wenos, Advisor

Abstract

Background

Mindfulness is a cognitive and spiritual practice that encourages fully engaging in the moment, while acknowledging, but not fixating, on thoughts. A small portion of the population in the United States utilizes mindfulness-based practices in daily life. Mindfulness can yield psychological benefits, and it is less known how these practices are understood and utilized in health-care fields and health-related educational programs.Therefore, the purpose of this study was threefold: to determine the value of a 10-day mindfulness-based app in alleviating stress experienced by graduate students, to better understand resilience among first year graduate students, and to determine healthcare faculty members' views of mindfulness in teaching and practice.

Methods

Phase A consisted of a quasi-experimental pilot study of first year graduate students in an Occupational Therapy (OT) program (n=12) using a mindfulness-based meditation application called Headspace. During Phase A, participants completed online surveys about attitudes of mindfulness, perceived stress, satisfaction with life, and resiliency at pre/post intervention. During Phase B of the study, student participants of a MOT graduate program cohort (n=22) completed a paper/pencil survey during their Fall semester on perceived stress and resilience. During Phase C, a group of health-related faculty (n=10) completed an online survey regarding mindfulness practices.

Results

Phase A- Headspace intervention, participants (n=12) experienced an attrition rate of 67%. Four participated in the pre-test and another participant dropped before completing the post-test. Descriptive statistics were conducted in addition to a Spearman rank-order correlation to determine if a relationship existed between scores on Resiliency and Perceived Stress scales following Headspace Intervention by OT students. There was no statistically significant correlation between Resilience and Perceived Stress among first year OT students ($r_{(10)} = .667$ $p > .05$). Phase B survey results (100% return rate) revealed 100% (22) of OT students agreed the semester was mentally and emotionally challenging, and 50% of students (11) reported effective ways to cope while 50% (11) felt ambivalent/disagreed they were able to cope. The most frequently identified strategies used included social engagement, entertainment, introspection, exercise, and sleep/rest. Phase C survey results (34% return rate) showed 100% (10) of faculty respondents agreed or strongly agreed that mindfulness-based strategies are an effective use of time and benefit health-care professionals and their clients, however only 50% (5) agreed or strongly agreed to implementing mindfulness in their classrooms.

Limitations of the study:

- The results for Phase A must be interpreted with caution due to a lack of sufficient power to determine differences in pre and post testing, and associations between resilience and perceived stress.
- Participation in the pilot study may have been viewed as an additional stressor to students enrolled in a previously identified stressful semester.

References

Outcomes

Phase A: Students recognized **awareness as a key component of mindfulness**

Students were better able to cope, but were unhappy with life during a stressful time

Phase B: Only **half of students were able to cope effectively**

Decreased coping was due to changes in motivation, perceived lack of control, and feeling incapable

Phase C: Despite **unanimous belief in the benefits of mindfulness, only half** of health-related university faculty survey respondents **implement mindfulness in class**

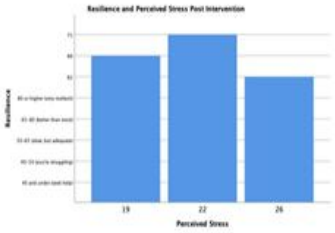

Figure 1.4 Association Values of Resiliency Quiz and Perceived Stress Scale following Headspace Intervention

Tables and Figures

Phase A

Figure 1.1 Participant 1 Pre and Post Intervention Scores

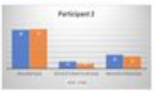

Figure 1.2 Participant 2 Pre and Post Intervention Scores

Figure 1.3 Participant 3 Pre and Post Intervention Scores

Phase B

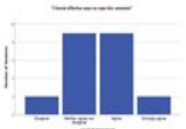

Figure 2.1 Graduate Student Group Survey Response for Effective Coping

Phase C

Figure 3.1 Demographics of Faculty Participants for Perceptions of Mindfulness Survey

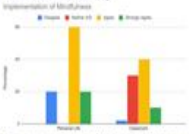

Figure 3.2 Faculty responses to implementation of Mindfulness-based practices in Personal Life vs. Classroom

Assessing Knowledge of Patients on Oral Topics and Evaluating the Services They Receive at Ben Massell Dental Clinic

Nallapaneni S., MPH, BDS, Georgia State School of Public Health

Purpose: The purpose of this study was to assess the knowledge of patients on topics of oral cancer and gum health and to evaluate the services that they receive at Ben Massell Dental Clinic.

Methods: A 26-question survey was developed and distributed to the patients while they were waiting in the room. These surveys were anonymous and consisted of 10 questions related to oral cancer, 10 related to gum health and 6 in relation to the services that they received at Ben Massell Dental Clinic. Once results were all collected, they were organized into an excel sheet and analyzed using SAS 9.4 software. The results thus obtained were summarized via descriptive statistics.

Results: Of the 250 individuals, 172 (68.8%) people received a score between 0-10 and were considered to have low levels of knowledge on the oral topics. The remaining 78 (31.2%) received a score between 11-20 and were considered to have high levels of knowledge on the oral topics. Of the 180 females, 58 (32.22%) had high levels of knowledge and 122 (67.78%) had low levels of knowledge. Of the 62 males 19 (30.65%) had high levels of knowledge and 43 (69.35%) had low levels of knowledge

Conclusion: The results showed that people need oral education in order to prevent oral and related cancers. Females were found to be more in need than males.

Assessing knowledge of patients on oral topics and evaluating the services they receive at Ben Massell Dental Clinic

Ben Massell Dental Clinic
Sravya Nallapaneni (MPH, BDS)

BACKGROUND

- Despite being highly preventable oral cancer is associated with high mortality rates. Global annual incidence of these cancers are estimated as 529,500. Annually in the United States, an estimated 51,540 persons are diagnosed with OC.
- The World Health Organization reported that most children and adolescents exhibit signs of mild periodontal disease in the form of gingivitis, while 5-20% of adult populations experience severe periodontal disease in the form of severe periodontitis.
- Ben Massell dental clinic is a non profit organization which provides dental services for free to the most neediest population of Atlanta. The clinic runs entirely by volunteer dentists and has been recognized both nationally and internationally for its innovative model of serving people.

PURPOSE

The purpose of my practicum was to assess the knowledge of patients on topics of oral cancer and gum health and also to evaluate the services they receive at Ben Massell dental clinic.

Competency 1: Communicate audience-appropriate public health content, both in writing and through oral presentation

- Activities - Give oral presentations and instructions to patients regarding gum care.

Competency 2: Design and evaluate interventions to reduce prevalence of major public health problems

- Activities - Educate the patients about the preventive measures and signs and symptoms of oral cancer.

Competency 3: Discuss the means by which structural bias, social inequities and racism undermine health and create challenges to achieving health equity at organizational, community and societal levels

- Activities - Collect information from patients regarding the challenges that they are facing to obtain required dental care

MATERIALS AND METHODS

- An anonymous 26 question survey was designed and distributed to the patients while they were waiting in the waiting room of which 10 questions were related to oral cancer, 10 were related to gum health and the rest 6 were on the quality of services that were being received at Ben Massell.
- The survey questions were approved by the Director of the clinic before they were distributed.
- The questionnaire was utilized as a presurvey before oral presentations were done on the relevant material to them using PowerPoints.
- Once the results were collected they were organized onto an excel sheet.
- The data that was collected was run in SAS 9.4 version to analyze the results.
- The results were summarized via descriptive statistics.

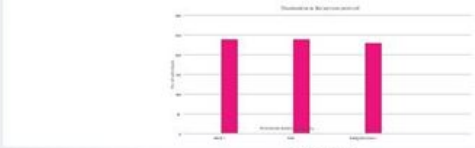

Figure : Patients level of knowledge on oral topics is determined based on the score they received on scale..

Figure 2: Level of knowledge against gender. Gender was determined based on the self response of the patients.

RESULTS

Of the 250 individuals people who received a score between 0-10 were considered to have low levels of knowledge on the oral topics which came to be 172(68.8%) which is more than half of the sample.
The rest (78)31.2% received a score between 11-20 and are considered to have high levels of knowledge on the oral topics
Of all the participants 180 (74.07%) were female, 62 (25.51)were male and 1(0.41%) was other gender. 7 missing values.
Of the 180 female individuals 58(32.22%) had high levels of knowledge and 122(67.78%) had low levels of knowledge.
Of the 62 male individuals 19(30.65%) had high levels of knowledge and 43(69.35%) had low levels of knowledge and that 1 individual from other race had low levels of knowledge.
Of all the participants 2 (0.85%)are Non hispanic Asians, 133(56.36%) are non Hispanic black, 53(22.46%) are non Hispanic white, 5(2.12%) are other Hispanic, 43 (18.22%) are other race. 14 missing values.
Of all the participants 22(9.13%) are immigrants and 219(90.87%) are non immigrants. 9 missing values.
2(0.86%)participants chose the option of facing the discrimination based on their immigration status. 17 missing values.
1 (0.41%)participant chose the option of facing the discrimination based on their race. 8 missing values.
2 (0.83%)participants chose the option of facing the discrimination based on their gender. 8 missing values.

CONCLUSIONS

People are in need of oral education in order to prevent oral and related cancers specially females are in more need than males.
Ben Massell is providing the services at the highest level possible without discrimination
One limitation with the study was that I have not recorded the age of the patients
All the data which were collected is self reported and some of them have guessed the answers.

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Examining the Association Between Tobacco Smoking Cessation Method Type and Number of Days Abstinent During Tobacco Cessation Attempts

Reid, T. M., Blondino, C. T., Clifford, J. S., Prom-Wormley, E.C., Virginia Commonwealth University Medical Center

Purpose: The purpose of this study was to test the association between tobacco smoking cessation methods and length of time abstinent from conventional cigarette use.

Methods: Adult participants from the Population Assessment of Tobacco and Health (PATH) survey (Wave 3, 2015 - 2016) who were conventional cigarette users and reported an attempt to quit smoking in the past 12 months (N = 3,797) were included in the study. The number of cessation days from cigarette smoking was the outcome variable (mean = 29.6). The exposure variable, smoking cessation method, was categorical and included 6 methods of cessation. A multiple linear regression was used to test the association between cessation methods and the number of days abstinent from cigarette smoking during a quit attempt, while accounting for all demographic characteristics.

Results: Respondents who reported use of e-cigarettes had, on average, 19.6 more days of smoking cessation than those who did not, while those who used counseling had, on average, 11.3 more days of smoking cessation compared to those who did not. Participants who reported using nicotine replacement therapy (NRT) yielded, on average, 7.1 less days of cessation than those who did not use NRT, and those who used other tobacco products as a cessation tool had 16.9 less average cessation days than those who did not.

Conclusion: E-cigarette use and counseling were associated with increased days of cessation. Use of NRT and use of other tobacco products were associated with fewer days of smoking cessation. These findings indicate useful cessation types for harm reduction efforts in cigarette smoking cessation.

EXAMINING THE ASSOCIATIONS BETWEEN TOBACCO SMOKING CESSATION METHOD TYPE AND NUMBER OF DAYS ABSTINENT DURING TOBACCO CESSATION ATTEMPTS

Taylor Reid, Courtney Blondino, James Clifford, Elizabeth Prom-Wormley

Background

- Nicotine in conventional cigarettes is highly addictive, making it difficult for smokers to abstain for more than a few days at a time without relapse
- Short term smoking cessation occurring within a year or less of a quit attempt is associated with increased positive health outcomes
- Short term cessation efforts have been identified as a harm reduction strategy to reduce the health burden of conventional cigarette use
- Little is known about effective cessation tools for short term smoking cessation

Study Aims

- To test the association between tobacco smoking cessation methods and length of time abstinent from conventional tobacco use

Methods

Study Population

- Data were examined from the Population Assessment of Tobacco and Health (PATH) Dataset, a nationally representative survey. The Wave 3 adult (18 years and older) sample was examined (2015-2016, N= 28,148).
- The sample size was reduced to participants who were conventional tobacco users (non-electronic nicotine product users) and reported an attempt to quit smoking in the past 12 months only (N = 3,797)

Measures

- Outcome: Number of cessation days was measured as a continuous variable using the following item: "In the past 12 months, length of time you stopped smoking/using tobacco product(s) because you were trying to quit" Respondents answered with the number of cessation days.
- Exposure: Smoking cessation product type was assessed based on 6 binary variables, including: support from family and friends, counseling, e-cigarettes, nicotine replacement therapy, prescription medication, and the use of no other tobacco products as a cessation method. Participant responded were recorded as "marked" indicating "yes" and "not marked" indicating "no"
- Covariates: Included: sex (binary), age (6-level categorical), annual income (5-level categorical), race (3-level categorical), education (5-level categorical), a variable that asked if participants believed that tobacco has caused or is causing a health problem (binary), insurance type (5-level categorical), and a withdraw sum score that indicated how many withdraw symptoms respondents had, (8-level categorical). These variables were included because previous literature cited the importance of these variables in smoking cessation.

Statistical Analysis

- The distribution of all categorical variables were estimated using PROC SURVEYFREQ
- The association between cessation methods and the number of days abstinent from tobacco smoking during a quit attempt was tested using unadjusted and adjusted linear regression while accounting for all covariates
- All analyses were conducted in SAS V9.4 using PROC SURVEYREG and PROC SURVEYFREQ to account for the complex survey design in PATH

Results

Table 1. Distribution of Study Variables (N=3797)

Variable	N (Weighted %)		Variable	N (Weighted %)
Cessation Type	Used	Not Used	**Age**	
Family/Friend Support	1137 (28.89)	2655 (71.10)	18-24	853 (14.39)
Counseling, Media	333 (8.30)	3459 (91.69)	25-34	935 (23.94)
E-Cigs	602 (15.54)	3163 (84.45)	35-44	630 (18.46)
NRT	513 (18.49)	2980 (81.50)	45-54	577 (16.95)
Rx Drug	230 (8.29)	2636 (91.70)	55-64	533 (16.58)
Used Other Tobacco Product	768 (19.66)	2997 (80.34)	65+	269 (9.64)
Believe Tobacco Caused Health Problem			**Sex**	
Yes	2728 (71.54)		Male	1999 (56.33)
No	1051 (28.45)		Female	1798 (43.66)
Insurance			**Income**	
Some Private Insurance	1905 (53.52)		< $10,000	813 (20.77)
No Private (some Medicare)	371 (10.84)		$10,000-24,999	961 (24.99)
No Private (some Medicaid)	648 (15.07)		$25,000-49,000	845 (22.84)
Other Insurance	141 (3.34)		$50,000-99,999	657 (21.31)
No Insurance	700 (17.21)		$100,000 +	299 (10.06)
Withdraw Sum Score			**Race**	
0	895 (24.54)		Black Alone	2680 (74.44)
1	482 (13.56)		Other Race	660 (16.71)
2	393 (10.19)		White Alone	401 (8.84)
3	408 (10.21)		**Education**	
4	443 (11.83)		Less than High School	801 (14.84)
5	394 (9.71)		High School or GED	1262 (34.24)
6	374 (9.69)		Some College	1440 (36.46)
7	408 (10.23)		Bachelor's Degree	358 (11.10)
Cessation Days N (Mean)	3777 (29.67)		Advanced Degree	123 (3.33)

- Most participants (28.89%) used family/friend support for smoking cessation (Table 1)
- Participants who used e-cigarettes had on average, 19.64 more days of smoking cessation compared to those who did not
- Participants who used counseling had a greater number of cessation days (11.33) than those who did not
- Participants who reported using NRT had fewer average cessation days (-7.07) than those who did not

Table 2. Associations between Duration of Tobacco Cessation and Cessation Method

Variable	Smoking Cessation Days (Unadjusted) β (95% CI)	Smoking Cessation Days (Adjusted) β (95% CI)
Cessation Type		
Family/Friend Support (ref = No)	1.50 (-3.61, 6.63)	1.04 (-5.31, 7.39)
Counseling, Media (ref = No)	4.45 (-3.27, 12.18)	**11.33 (1.75, 21.92)**
E-Cigs (ref = No)	**7.27 (1.21, 13.33)**	**19.64 (4.73, 34.56)**
NRT or PE (ref = No)	**-5.22 (-12.79, -3.76)**	**-7.07 (-12.92, -1.22)**
Rx Drug (ref = No)	-4.48 (-11.52, 2.56)	-0.45 (-8.44, 7.52)
Used Other Tobacco (ref = Yes)	2.39 (- 3.06, 7.85)	**-16.69 (-23.79, -9.58)**
Sex (ref= female)		
Male	-3.70 (-8.65, 1.24)	-6.21 (-12.93, 0.50)
Age (ref= > 65 years old)		
18-24	**16.76 (6.67, 26.85)**	**14.66 (2.37, 26.95)**
25-34	9.84 (-0.57, 20.26)	12.52 (-0.68, 25.73)
35-44	2.76 (-7.33, 12.86)	4.58 (-7.65, 16.81)
45-54	3.21 (-7.93, 14.37)	4.59 (-8.85, 18.04)
55-64	0.36 (-9.76, 10.48)	3.52 (-7.70, 14.75)
Race (ref= White alone)		
Black Alone	-5.81 (-11.88, 0.25)	-4.87 (-11.13, 1.38)
Other Race	**11.96 (2.34, 21.57)**	7.69 (-3.37, 18.76)
Education (ref=Advanced Degree)		
Less than High School	-3.27 (-18.41, 11.88)	-1.83 (-19.55, 15.87)
High School or GED	-6.65 (-19.57, 6.27)	-8.27 (-22.48, 5.94)
Some College	-0.53 (-14.07, 13.00)	-3.21 (-18.18, 11.76)
Bachelor's Degree	0.63 (-13.23, 14.50)	-2.87 (-18.41, 12.66)
Income (ref= $100,000 or more)		
< $10,000	0.41 (-9.20, 10.03)	7.01 (-5.17, 19.19)
$10,000-24,999	-1.29 (-9.16, 6.58)	2.64 (-7.41, 12.70)
$25,000-49,000	-2.60 (-10.50, 5.29)	-0.76 (-10.98, 9.45)
$50,000-99,999	-2.35 (-10.89, 6.18)	0.27 (-10.67, 11.22)
Insurance (ref= Some Private Ins.)		
No Private (some Medicare)	-3.88 (-11.86, 4.09)	1.04 (-9.44, 11.53)
No Private (Some Medicaid)	-0.38 (-8.33, 7.56)	-2.99 (-13.98, 7.98)
Other Insurance	-6.05 (-14.44, 2.26)	-2.89 (-13.75, 12.28)
No Insurance	-0.98 (-7.92, 5.95)	-0.74 (-10.98, 6.67)
Believe Tobacco Caused Health Problem (ref = No)		
Yes	-2.92 (-9.28, 3.44)	-2.38 (-9.36, 4.59)
Withdraw Sum Score (ref = 0)		
1	4.34 (-2.86, 11.54)	8.26 (-0.87, 17.41)
2	7.27 (-2.59, 17.14)	**11.28 (0.52, 21.84)**
3	-1.83 (-10.08, 6.41)	-1.20 (-11.66, 9.25)
4	**-6.13 (-13.44, 1.18)**	-2.68 (-11.75, 6.38)
5	-3.11 (-11.81, 5.58)	3.00 (-8.26, 14.27)
6	-5.50 (-14.97, 3.95)	0.54 (-13.4, 14.55)
7	**-11.27 (-18.06, -4.48)**	**-12.11 (-20.45, -3.78)**

Bolded values indicate estimate significant at α =0.05

Conclusions

- E-cigarette use and counseling were associated with longer durations of cessation and may reflect more successful strategies to cessation of tobacco use
- Limitations include testing of a relatively short time frame of abstinence (12-month period), no confirmation of nicotine abstinence via cotinine levels, and recall bias. Future longitudinal studies are needed to confirm these results over time

VCU Medical Center

VIRGINIA COMMONWEALTH UNIVERSITY

Adverse Childhood Experiences and Intimate Partner Violence

Lewis, K.B., Hosseinian, S.R., Nicola, L.P., and Oates, A.D., College of Health and Behavioral Studies

Purpose: Previous research has focused on Adverse Childhood Experiences (ACEs) and the future effects of intimate partner violence among males, with an emphasis on deviant behaviors. This descriptive cross-sectional study investigated the relationships between ACEs, intimate partner victimhood and perpetration, biological sex, partner communication, and cyber intimate partner violence in college-aged adults.

Methods: An online survey was distributed through social media outlets, specifically Facebook and Instagram, targeting college-aged adults aged 18-24 years old (n=228). Data analysis was conducted using the Statistical Package for the Social Sciences Version 26 (SPSS 26.0).

Results: Mann Whitney U tests of biological sex with both scales of intimate partner victimhood revealed women were more likely to be victimized than men ($U = 2159$, $p < 0.01$; $U = 2361$, $p < 0.01$) which is consistent with previous literature. Spearman correlations indicate ACEs were inversely associated with partner communication ($p<0.01$:$r=-0.271$), while ACEs and cyber intimate partner violence had a weak positive association ($p<0.01$:$r=0.355$). Spearman correlation tests further suggested those with more ACEs were more likely to experience both physical and emotional victimhood ($p<0.01$: $r=0.511$; $p<0.01$: $r=0.484$). Lastly, as ACEs increased, so did the likelihood of perpetration ($p<0.01$: $r=0.180$).

Conclusion: Continued investigation of this topic is warranted to more thoroughly understand mechanisms for effective prevention and intervention.

Adverse Childhood Experiences and Intimate Partner Violence

JAMES MADISON UNIVERSITY

Sarah Hosseinian, Kelby Lewis, Lauren Nicola, Amelia Oates
Faculty Advisor: Stephanie Baller, PhD
Department of Health Sciences, James Madison University

COLLEGE OF HEALTH AND BEHAVIORAL STUDIES
JAMES MADISON UNIVERSITY

Problem & Significance

Previous evidence indicates exposure to Adverse Childhood Experiences (ACEs) has the potential to increase an individual's likelihood of becoming perpetrators or victims of Intimate Partner Violence (IPV) in the future. There is limited research regarding the relationship between ACEs and IPV in college-aged adults, which verifies the importance of focusing on this topic. The establishment of a relationship would indicate the importance of increasing awareness about ACEs and its roles in IPV in order to diminish further violent behaviors.

Literature & Theory

Supporting literature led the researchers to utilize environmental components, specifically observational learning from the Social Cognitive Theory (SCT) as the foundation for why ACEs can impact future intimate partner relationships.

Research Questions

1. Are ACEs associated with intimate partner perpetration or victimhood?
2. Does biological sex influence intimate partner perpetration or victimhood?
3. Do ACEs have an effect on partner communication?
4. Is cyber intimate partner violence associated with ACEs?

Design & Sampling

The study was approved by the JMU IRB (#20-1782). A descriptive, cross-sectional study design used a questionnaire which was distributed through social media platforms and targeted (n=228) college-aged adults (ages 18-24) .The questionnaire included five instruments where the answers reflected a Likert Scale, a 'Yes' or 'No' response, and demographic information.

Instruments

- Adverse Childhood Experiences Questionnaire (Felitti, 1998) measured ACEs.
- Safe Dates-Physical Violence (Arriaga X.B. et al., 1998) measured Intimate Partner Victimhood.
- Abusive Behavior Inventory (Campbell J.A. & Shepard, 1992) measured Intimate Partner Victimhood.
- Revised Conflict Tactics Scale (Straus et al., 1996) measured Intimate Partner Perpetration.
- Primary Communication Inventory (Navran, 1967) measured Partner Communication.
- Partner Cyber Abuse Questionnaire (Wolford-Clevenger et al., 2016) measured Cyber Intimate Partner Violence.

Results

Mann Whitney U tests of biological sex with both scales of intimate partner victimhood revealed women were more likely to be victimized than men ($U = 2159$, $p < 0.01$; $U = 2361$, $p < 0.01$).

Table 1. The Relationships of Intimate Partner Perpetration and Intimate Partner Victimhood to ACEs.

	ACEs
Intimate Partner Perpetration	r= 0.180**
Intimate Partner Victimhood (Safe Dates)	r= 0.511**
Intimate Partner Victimhood (ABI)	r= 0.484**

*Spearman Bivariate Correlations. **p < 0.01*

Spearman correlation tests suggest both forms of victimhood were more likely among those who experienced higher rates of ACEs. Further, perpetration likelihood also increased as the experience of ACEs increased.

Results cont.

A Spearman correlation indicated ACEs had a weak negative association with partner communication ($p < 0.01$: $r = -0.271$). A higher ACEs score reflected weaker communication between partners. A Spearman correlation indicated ACEs had a weak positive association with cyber intimate partner violence ($p < 0.01$: $r = 0.355$). Individuals with a higher ACEs score were more likely to experience cyber intimate partner violence. Lastly, intimate partner perpetration rates were not different by biological sex ($p = 0.146$).

Conclusions

The findings of this study support the literature suggesting differences in biological sex influence the likelihood of intimate partner victimhood. Findings of this study focused on an under-researched topic with college-aged adults.

Limitations

- Disproportionate sample of females versus males
- The COVID-19 pandemic and shelter-in-place orders required data to be collected virtually rather than in person as was originally proposed.
- Survey length may have been a deterrent

Implications

Further research is warranted due to this under-researched topic with college-aged adults. Additionally, findings indicate the potential for individuals with ACEs to experience IPV later in life, signaling spread of awareness, could be essential in limiting further violence. Findings align with available literature. More research is needed focusing on SCT approach, with emphasis on observational learning, as it is beneficial in understanding the relationship between ACEs and IPV.

Assessing Health Risks in Rural Communities Surrounding Zacapa, Guatemala

Stearns, K. & Attin, O.M., Department of Public and Community Health, Liberty University

Purpose: To determine the prevalence of diabetes, obesity, and anemia among Guatemalan adults, as well as the rates of obesity among children in Zacapa, Guatemala. Location, gender, age, personal education level, household daily income, or employment status were examined to determine whether they influence rates of obesity and anemia among adults in Zacapa, Guatemala.

Methods: Community health assessments involved gathering height, weight, body mass index, blood glucose, hemoglobin, and blood pressure measurements from eligible participants. Microsoft Excel 2016 and IBM SPSS Version 23.0 were used to present descriptive statistics and analyze the data using binomial logistic regression tests.

Findings: There were 130 child and 232 adult participants involved in this study. The majority of adult participants were female (84.05%) and between the ages of 15-39 (55.60%). 5.29% of adults suffered from diabetes, 32.47% from obesity, and 24.65% from anemia.

Conclusion: This study presented health information about childhood obesity; diabetes, obesity, anemia prevalence among adults, as well as various demographic, health-related behaviors, and socioeconomic factors. Out of the two separate logistic regression models, only the dependent variable of anemia was found to be statistically significant. Several limitations are mentioned.

Keywords: Zacapa, Guatemala, anemia, diabetes, obesity, children

LIBERTY UNIVERSITY

Assessing Health Risks in Rural Communities Surrounding Zacapa, Guatemala

Kristy Stearns, BSPH, MPH; Oswald Attin, MSHS, PhD

Abstract

Objective: To determine the prevalence of diabetes, obesity, and anemia among Guatemalan adults, as well as the rates of obesity among children in Zacapa, Guatemala. Location, gender, age, personal education level, household daily income, or employment status were examined to determine whether they influence rates of obesity and anemia among adults in Zacapa, Guatemala. **Methods**: Community health assessments involved gathering height, weight, body mass index, blood glucose, hemoglobin, and blood pressure measurements from eligible participants. Microsoft Excel 2016 and IBM SPSS Version 23.0 were used to present descriptive statistics and analyze the data using binomial logistic regression tests. **Results**: There were 130 child and 232 adult participants involved in this study. Overall, the majority of children seen were female between the ages of 8-11 years old (M=8.85) and were seen at the Nuevo Sanzapote location; a total of 16.28% of child participants were classified as being overweight or obese. The majority of adult participants were female (84.05%) and between the ages of 15-39 (55.60%). 5.29% of adults suffered from diabetes, 32.47% from obesity, and 24.65% from anemia. **Discussion**: This study presented health information about childhood obesity; diabetes, obesity, anemia prevalence among adults, as well as various demographic, health-related behaviors, and socioeconomic factors. Out of the two separate logistic regression models, only the dependent variable of anemia was found to be statistically significant. Several limitations are mentioned.

Introduction

Conducting community-based needs assessments and gathering culturally appropriate health data among diverse people groups around the world is currently a top priority for public health professionals. Gathering health-related data not only allows public health professionals to create health programs and initiatives that are specific to each community's needs but also allows them to create policies that will incite change on a larger level. Unfortunately, some developing countries are still unable to receive adequate aid due to limited availability of health data, which is evident in Zacapa, Guatemala. One report created by the government of Guatemala, estimates that 228,810 people lived in Zacapa in 2013 with a majority of residents being female (52.2%), living in rural communities (56.9%), and being of non-indigenous backgrounds (99.1%) ("Caracterizacion Departamental Zacapa", 2013). Insufficient data was presented in this report that was reflective of health conditions within the community. While limited health data exists in Zacapa, the country of Guatemala as a whole has recently been considered a strong economic force within Latin America. The World Bank reports that the country's gross domestic product (GDP) growth rate was 4.1% in 2015 with increasing rates of 2.8% in 2017 and 3.0% in 2018 ("The World Bank in Guatemala", 2019). However, despite these economic strides, Guatemalan children and adults disproportionately suffer from malnutrition, food insecurity, stunting, iron deficiency anemia, diabetes, and obesity as compared to other Latin American countries.

Methods

This primary research study was conducted from June 17 to June 24, 2019 in Zacapa, Guatemala using a cross-sectional study design. The primary researcher, along with the three other co-researchers, traveled to Zacapa, Guatemala during this study period and conducted community health assessments within five rural communities of Zacapa- Agua Caliente, Llano Verde, Santa Rosalia Marmol, Moran, and Nuevo Sanzapote. Community health assessments were conducted in collaboration with the local mission's coordinator at la Iglesia Primitiva and local municipality officials. Community health assessments involved gathering height, weight, body mass index (BMI), blood glucose, iron (anemia), and blood pressure measurements from eligible participants. Community members were eligible to receive blood glucose and anemia checks as part of the community health assessment if they were local residents of Zacapa, at least 15 years old, and if they filled out an adult health questionnaire. Children were eligible to get their height and weight checked if they were between the ages of 4 and 14 years old and if their parent filled out a child health form. Each adult health questionnaire consisted of 25 questions and was originally written in English. The final version of the adult health questionnaire was translated and printed in Spanish to maximize comprehensibility and communication efforts between the researchers and participants.

Table 1: Demographic Characteristics of Child Participants, Zacapa, Guatemala, June 2019

Characteristic	Frequency	Percent
Gender (*n=130*)		
Male	59	45.38
Female	71	54.62
Age (*n=130*)		
4-7 years	47	36.15
8-11 years	54	41.54
12-14 years	29	22.31
Location (*n=130*)		
Agua Caliente	31	23.85
Llano Verde	7	5.38
Santa Rosalia Marmol	28	21.54
Moran	28	21.54
Nuevo Sunzapote	36	27.69

Table 2: Demographic Characteristics of Adult Participants, Zacapa, Guatemala, June 2019

Characteristic	Frequency	Percent
Gender (*n=232*)		
Male	37	15.95
Female	195	84.05
Age (*n=232*)		
15-39 years	129	55.60
40-65 years	77	33.19
66-90 years	26	11.21
Location (*n=232*)		
Agua Caliente	48	20.69
Llano Verde	26	11.20
Santa Rosalia Marmol	38	16.38
Moran	55	23.71
Nuevo Sunzapote	65	28.02

Table 3: Logistic Regression Predicting Likelihood of Obesity based on Location, Sex, Age, Personal Education, Household Daily Income, and Employment Status, Zacapa, Guatemala, June 2019

							95% CI for Odds Ratio	
	B	S.E.	Wald	df	p	Odds ratio	Lower	Upper
Location	.150	.116	1.686	1	.194	1.162	.926	1.459
Sex	1.244	.543	5.252	1	.022	3.470	1.197	10.054
Age	-.005	.010	.255	1	.614	.995	.975	1.015
Personal Education	.038	.145	.067	1	.795	1.038	.781	1.380
Household Daily Inc	.137	.170	.655	1	.418	1.147	.823	1.600
Employment	-.918	.401	5.235	1	.022	.399	.182	.877
Constant	-.882	1.123	.617	1	.432	.414		

Table 4: Logistic Regression Predicting Likelihood of Anemia based on Location, Sex, Age, Personal Education, Household Daily Income, and Employment Status, Zacapa, Guatemala, June 2019

							95% CI for Odds Ratio	
	B	S.E.	Wald	df	p	Odds ratio	Lower	Upper
Location	-.106	.122	.758	1	.384	.899	.707	1.143
Sex	-.250	.492	.258	1	.611	.779	.297	2.043
Age	.036	.011	10.301	1	.001	1.037	1.014	1.060
Personal Education	.117	.165	.504	1	.478	1.124	.814	1.552
Household Daily Inc	.086	.187	.212	1	.645	1.090	.756	1.572
Employment	-.012	.445	.001	1	.978	.988	.413	2.364
Constant	-2.584	1.244	4.316	1	.038	.075		

Results and Conclusion

Results:

There were 130 child and 232 adult participants involved in this study (Tables 1-2). The mean height and weight for the child participants was 128.06 cm (±17.15) and 29.16 kg (±11.77), respectively. In addition, most children were classified as having a healthy weight (75.19%); however, 24.81% of children classified as being underweight, overweight, or obese. Overall, the majority of adult participants were female (84.05%) and between the ages of 15-39 (55.60%) (Table 2). 70.43% of adults identified as being married or living with a partner, 38.84% indicated a daily household income of 31-60 Quetzal per day ($4.05-$7.85 USD), and 77.16% reported being unemployed. In general, majority of adult participants reported visiting a doctor or health care worker at least once per year (37.23%), having previously breastfed (69.16%), brushing their teeth eight or more times per week (32.16%), having stomach pains within the past two weeks (65.95%), and eating three meals per day (68.97%). While most adult participants report "never" worrying about getting food (38.56%) and "no" to being unable to purchase food in the last year due to not having money (65.09%), more than half of participants report "often" skipping meals so that other members of their family can eat (53.02%). Furthermore, 61.21% of adult participants report "yes" to believing that they eat a balanced, nutritious diet regularly while 52.8% report being typically hungry for 4-6 hours before eating their next meal. 5.29% of adults suffered from diabetes, 32.47% from obesity, and 24.65% from anemia.

Separate binomial logistic regressions were performed to determine the effects of location, gender, age, personal education level, household daily income, and employment status on the likelihood that participants are obese or have anemia. The logistic regression model for obesity was not statistically significant, χ^2 (6) = 11.632, p= 0.071. Of the six predictor variables only two were statistically significant: sex and employment status as shown in Table 3. The logistic regression model for anemia was significant, χ^2 (6) = 12.981, p= 0.043. Of the six predictor variables, only one variable was statistically significant: age, as shown on Table 4.

Conclusion:

Out of the two separate logistic regression models, only the dependent variable of anemia was found to be statistically significant. Age was the only variable that was proven to be statistically significant in predicting incidence of anemia among this population. This indicates that appropriate nutrition education should be provided to women starting at a young age in order to reduce their likelihood of becoming anemic as they get older. Limitations for this study included having overheating problems with the HemoCue and blood glucose meter devices. Overheating technicalities reduced the number of individuals who were able to receive this assessment and may have also influenced accurate readings before or after the malfunctions.

Future Work

1. Conduct additional studies to support the data presented within this study and provide more information regarding the health status of individuals within Zacapa, Guatemala.
2. Collaborate with community leaders to create educational programs about diabetes, anemia, and obesity for current Zacapa residents.

References and Acknowledgments

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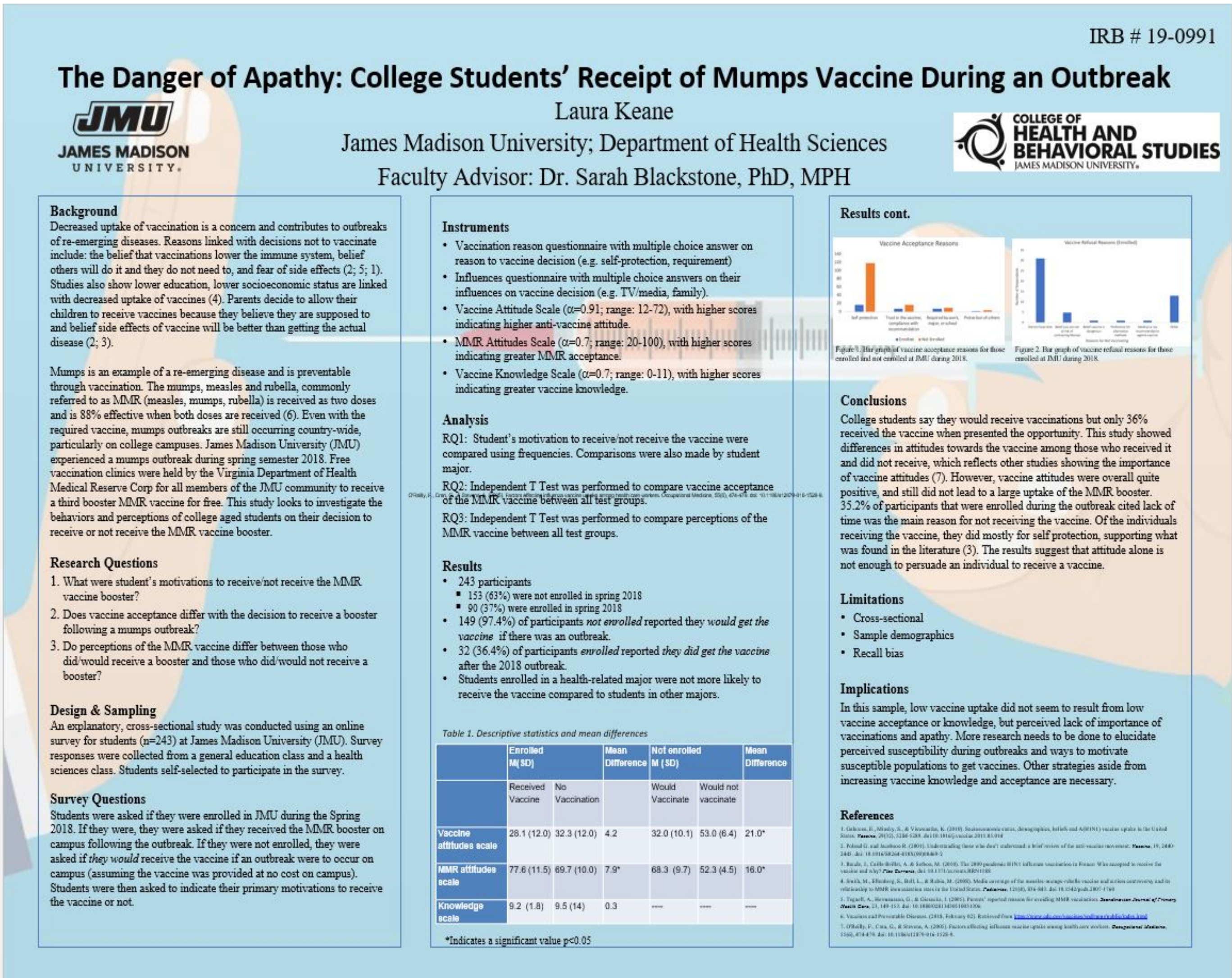
The Danger of Apathy: College Students' Receipt of Mumps Vaccine During An Outbreak

Keane, L., Blackstone, S. PhD MPH, Department of Health Sciences, James Madison University



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The Danger of Apathy: College Students' Receipt of Mumps Vaccine During an Outbreak

Laura Keane
James Madison University; Department of Health Sciences
Faculty Advisor: Dr. Sarah Blackstone, PhD, MPH

Background

Decreased uptake of vaccination is a concern and contributes to outbreaks of re-emerging diseases. Reasons linked with decisions not to vaccinate include: the belief that vaccinations lower the immune system, belief others will do it and they do not need to, and fear of side effects (2; 5; 1). Studies also show lower education, lower socioeconomic status are linked with decreased uptake of vaccines (4). Parents decide to allow their children to receive vaccines because they believe they are supposed to and belief side effects of vaccine will be better than getting the actual disease (2; 3).

Mumps is an example of a re-emerging disease and is preventable through vaccination. The mumps, measles and rubella, commonly referred to as MMR (measles, mumps, rubella) is received as two doses and is 88% effective when both doses are received (6). Even with the required vaccine, mumps outbreaks are still occurring country-wide, particularly on college campuses. James Madison University (JMU) experienced a mumps outbreak during spring semester 2018. Free vaccination clinics were held by the Virginia Department of Health Medical Reserve Corp for all members of the JMU community to receive a third booster MMR vaccine for free. This study looks to investigate the behaviors and perceptions of college aged students on their decision to receive or not receive the MMR vaccine booster.

Research Questions

1. What were student's motivations to receive/not receive the MMR vaccine booster?
2. Does vaccine acceptance differ with the decision to receive a booster following a mumps outbreak?
3. Do perceptions of the MMR vaccine differ between those who did/would receive a booster and those who did/would not receive a booster?

Design & Sampling

An explanatory, cross-sectional study was conducted using an online survey for students (n=243) at James Madison University (JMU). Survey responses were collected from a general education class and a health sciences class. Students self-selected to participate in the survey.

Survey Questions

Students were asked if they were enrolled in JMU during the Spring 2018. If they were, they were asked if they received the MMR booster on campus following the outbreak. If they were not enrolled, they were asked if *they would* receive the vaccine if an outbreak were to occur on campus (assuming the vaccine was provided at no cost on campus). Students were then asked to indicate their primary motivations to receive the vaccine or not.

Instruments

- Vaccination reason questionnaire with multiple choice answer on reason to vaccine decision (e.g. self-protection, requirement)
- Influences questionnaire with multiple choice answers on their influences on vaccine decision (e.g. TV/media, family).
- Vaccine Attitude Scale (α=0.91; range: 12-72), with higher scores indicating higher anti-vaccine attitude.
- MMR Attitudes Scale (α=0.7; range: 20-100), with higher scores indicating greater MMR acceptance.
- Vaccine Knowledge Scale (α=0.7; range: 0-11), with higher scores indicating greater vaccine knowledge.

Analysis

RQ1: Student's motivation to receive/not receive the vaccine were compared using frequencies. Comparisons were also made by student major.

RQ2: Independent T Test was performed to compare vaccine acceptance of the MMR vaccine between all test groups.

RQ3: Independent T Test was performed to compare perceptions of the MMR vaccine between all test groups.

Results

- 243 participants
  - 153 (63%) were not enrolled in spring 2018
  - 90 (37%) were enrolled in spring 2018
- 149 (97.4%) of participants *not enrolled* reported they *would get the vaccine* if there was an outbreak.
- 32 (36.4%) of participants *enrolled* reported *they did get the vaccine* after the 2018 outbreak.
- Students enrolled in a health-related major were not more likely to receive the vaccine compared to students in other majors.

Table 1. Descriptive statistics and mean differences

	Enrolled M(SD)		Mean Difference	Not enrolled M (SD)		Mean Difference
	Received Vaccine	No Vaccination		Would Vaccinate	Would not vaccinate	
Vaccine attitudes scale	28.1 (12.0)	32.3 (12.0)	4.2	32.0 (10.1)	53.0 (6.4)	21.0*
MMR attitudes scale	77.6 (11.5)	69.7 (10.0)	7.9*	68.3 (9.7)	52.3 (4.5)	16.0*
Knowledge scale	9.2 (1.8)	9.5 (14)	0.3	----	----	----

*Indicates a significant value p<0.05

Results cont.

Vaccine Acceptance Reasons

Figure 1. Bar graph of vaccine acceptance reasons for those enrolled and not enrolled at JMU during 2018.

Figure 2. Bar graph of vaccine refusal reasons for those enrolled at JMU during 2018.

Conclusions

College students say they would receive vaccinations but only 36% received the vaccine when presented the opportunity. This study showed differences in attitudes towards the vaccine among those who received it and did not receive, which reflects other studies showing the importance of vaccine attitudes (7). However, vaccine attitudes were overall quite positive, and still did not lead to a large uptake of the MMR booster. 35.2% of participants that were enrolled during the outbreak cited lack of time was the main reason for not receiving the vaccine. Of the individuals receiving the vaccine, they did mostly for self protection, supporting what was found in the literature (3). The results suggest that attitude alone is not enough to persuade an individual to receive a vaccine.

Limitations

- Cross-sectional
- Sample demographics
- Recall bias

Implications

In this sample, low vaccine uptake did not seem to result from low vaccine acceptance or knowledge, but perceived lack of importance of vaccinations and apathy. More research needs to be done to elucidate perceived susceptibility during outbreaks and ways to motivate susceptible populations to get vaccines. Other strategies aside from increasing vaccine knowledge and acceptance are necessary.

References

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