**Fall 2019 RIPHA** Abstracts – Student Poster Session

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**Presenter:** Scarlett Bergam, Brown University School of Public Health

**Co-Authors: Authors:** Bergam, S., Pather, A., Rencken, C. A., Mtukushe B, Matiwane M, Harrison, A. D., Kuo, C., Hoare, J, Galarraga, O.

**Title:** “You need to speak their language”: Clinician Perspectives on Adolescent Adherence to Antiretroviral Therapy in South Africa

**Abstract:**

Context:Nearly one­fifth of the global population infected with HIV resides in South Africa, with the highest incidence occurring in adolescents ages 10-19. While all other age groups in South Africa have a decreasing HIV­related mortality due to the popularization of antiretroviral therapy (ART), the number of AIDS­related deaths is increasing in the adolescent population. Young people with HIV navigate a sexual and developmental transition that, without long­term clinical care, can impede ART adherence and psychosocial health. Clinicians must adapt general HIV biomedical and behavioral care to fit specific adolescent needs.

Objective:The three objectives of the study were to: (1) Analyze physician, nurse, and counselor perspectives on adolescent HIV treatment adherence, (2) Evaluate the difficulties clinicians face in treating a vulnerable and variable population, and (3) Propose suggestions for care for ALHIV in a low­income clinical setting.

Methods:This qualitative study examines health outcomes of ALHIV at a treatment site in Cape Town, South Africa. In­depth interviews were conducted with HIV providers (n = 14), including physicians, nurses, and social workers, addressing their patients’ barriers and facilitators to adherence. The data was coded using NVivo 10 to analyze clinician perspectives.

Results:This study’s results demonstrate major challenges that clinicians face when caring for ALHIV. Data analysis revealed three major themes: (1) clinicians must balance authority over adolescent health with empathy towards adolescent experience, (2) limited clinical resources including funding, as well as patient financial barriers, challenge treatment adherence and clinic attendance, and (3) adolescents must take responsibility over their treatment, as barriers and risks such as resource limitations and stigma constrain appointment frequency and support group participation.

Conclusion and Discussion:The complexity of the HIV medical provider role mirrors the complexity of adolescence itself. Clinicians must have the skills to balance the dual role of medical provider and social supporter, all while facing the pressure of limited time and resources. It is essential to support clinicians to allow their patients to not only deal with a life­changing illness, but help them to focus on living proactively with HIV.

**Presenter:** Spencer T. Booth, Boston College

**Co-Authors:** Spencer T. Booth1,Samantha R. Rosenthal2,3

1 Morrissey College of Arts & Sciences, Boston College, Chestnut Hill, MA

2 College of Health and Wellness, Johnson & Wales University, Providence, RI

3 Brown School of Public Health, Brown University, Providence, RI

**Title:** Mobile Screen Use and Depressive Symptoms among US College Students

**Abstract:**

Background: College students today are suffering more than ever from depressive symptoms, finding it difficult to function, and risking chronic or recurrent disorder and longstanding morbidity. In 2019 rate of major depressive episodes among college students in the United States is well above average (45.2% versus 7.1%, respectively). In the past decade, mobile screen-time use has increased rapidly, particularly among college students, with almost 100% of college students reporting smartphone ownership. This high rate of depression and commonplace smartphone ownership among college students suggests examination is needed in the relationship between mobile screen time use and depression.

Methods: This cross-sectional web-based survey collected subjective self-reported mobile screen time (N=437) and objective mobile screen time data from Apple’s Screen Time application (N=176) from a national convenience sample of college students. Depressive symptoms were measured by the 10-item Center for Epidemiologic Studies Short Depression Scale (CES-D10). Multivariable logistic regression accounted for gender, race/ethnicity, age group, employment, first-generation college student status, sexual orientation, social ladder, and social support.

Results: Fully adjusted models suggest that self-reported mobile screen time measures (e.g. daily average, social networking, gaming, and productivity) were associated with increased odds of depressive symptoms. Available objective measures of mobile screen time confirmed these relationships. The largest effect was for those smartphone addicted [3.97 (95%CI 2.52, 6.26)], for each additional hour of objectively measured average daily use [1.24 (95%CI 1.04, 1.49)], and for each additional hour of self-reported social networking [1.18 (95%CI 1.07, 1.29)].

Conclusions: Findings suggest there is an association between mobile screen use or smartphone addiction and college student depressive symptoms. Further study should utilize prospective designs with objective measures of mobile screen time use and various patterns in use. Ultimately, these findings should inform targeted mobile-health interventions to address college student depression.

**Presenter:** Emma Creegan, Brown University School of Public Health

**Title:** HPV Vaccination and Pap Smear Frequency Among U.S. Women Ages 21-36

**Abstract:**

31,500 annual cancers of varied types, including cervical cancer, are attributable to human papillomavirus (HPV) in the U.S. Early stages of cervical cancer can be detected via Pap smears starting age 21. The HPV vaccine was introduced in 2006 but does not prevent all cervical cancer cases, making Pap smears crucial to detect cases in early stages. Studies suggest HPV vaccination is associated with obtaining Pap smears, which raises questions about best combinations of preventive measures. Demographic factors such as having insurance coverage contribute to intention and self-efficacy to follow Pap testing recommendations. Using Behavioral Risk Factor Surveillance System data from 2016, we examined the association between HPV vaccination and Pap smears among women ages 21-36 in the U.S. We hypothesized that vaccinated women are more likely than unvaccinated women to obtain Pap smears at the recommended frequency of every three years. When adjusted for age and health coverage, the OR for the outcome of adherence to Pap smear recommendations was 1.52 (p=.045, 95% CI 1.01-2.28). Suggestive results were found when incorporating demographics and covariates in models, but differed in statistical significance based on adjusted covariates. It is recommended that future studies examine how healthcare coverage relates to behaviors surrounding HPV vaccination and Pap smears. This research should examine how to increase access to both preventive measures.

**Presenter:** Rachel McBride, Community College of RI, Nursing

**Title:** Looping: Diabetic Care in the 21st Century

**Abstract:**

Traditional methods of insulin-dependent diabetic care have certainly improved in recent decades, particularly with the advent of insulin pumps and continuous glucose monitors (CGMs). These devices allow insulin-dependent diabetics to receive precise basal and bolus amounts, to vary basal and bolus rates/rations, and to provide the diabetic and care-takers an accurate glucose reading every five minutes. Yet, because these technologies work in isolation, they fail to emulate the dynamic process non-diabetics experience.

While some biotech companies have sought to overcome this problem, progress has been slow and results vary. Various individuals and online communities are seeking to overcome this problem by developing equipment that integrates leading insulin pumps and CGMs, commonly referred to as “looping.” The looping system is able to make basal rate adjustments every five minutes based on algorithms that use blood-glucose levels/trends from the CGM, onset/peak/duration of insulin and carbohydrate digestion, and presets established by the user. My poster project will seek to educate attendees by:

● Using images and diagrams to explain the components needed for successful looping and how these components interact and care for the diabetic;

● Explaining the benefits of looping and the obstacles in implementing a looping system;

● Providing resources for further exploration.

The overall goal will be to help those involved with public health to understand this relatively new form of diabetic care so that they may know how to interact with and care for diabetics using a looping system.

**Presenter:** Shade Olowookere, MPH, MHAc

**Co-Authors:** Shade Olowookere1,2, MPH, MHAc; Lesley Clack1, ScD, MS; Juliet Sekandi2, MD, MS, DrPH University of Georgia, College of Public Health 1Department of Health Policy and Management, 2Global Health Institute

**Title:**

A Literature Review of Determinants of Maternal Mortality in sub-Saharan Africa: An Application of the Three Delays Framework

**Abstract:**

Background: Maternal mortality remains a major challenge especially in developing country settings. In developing African countries, the maternal mortality ratio is 239 per 100,000 live births. Sustainable Development Goal (SDG) 3 aims to reduce the global maternal mortality ratio to less than 70 per 100,000 live births. The purpose of this study is to examine published literature to identify determinants and the distribution of the Three Delays in relation to maternal mortality in sub-Saharan Africa (SSA).

Methods: To assess the determinants of maternal mortality we used the Three-Delays framework. This framework consists of phase one - delay in deciding to seek care, phase two - delay in reaching a medical facility, and phase three-delay in receiving adequate quality care. We organized this literature review according to the PRISMA guidelines. We identified and screened 78 journal articles published from 2003 – 2019, of which 20 were reviewed. We excluded articles that did not define maternal mortality as death within 42 days of delivery, or did not include information on causes of maternal deaths or delays. Of the reviewed articles, we examined the distribution of the Three Delays and related factors including socio-demographics, cultural, economic, and behavioral factors.

Findings: Of the 20 reviewed articles, 81% identified phase one; 71% identified phase two; and 57% identified phase three as contributors to maternal death. Interventions including health information systems, data surveillance, physical accessibility services, and responses to quality data are appropriate strategies to minimize delays.

Conclusions: Among the Three Delays, phase one in seeking care was most frequent. However, experiencing any delay from the framework has shown association for poorer health outcomes. Most common limitations included mortality differences across SSA. As SSA enhances and constructs health interventions, global health leaders must implement progress monitoring of the Three Delays. The factors identified in this article can inform health system strategies to decrease maternal mortality in SSA.

**Presenter:** Sgt. Chelsey Poisson, BSN-RN

**Co-Authors:** Poisson, C. (SGT, BSN-RN), Boucher, S. (LTC, MSN-RN),

Ross, S. (Ph.D, CNM-RN) & Santilli, P. (MSGT, BA, MSW)

**Title:** Exploratory Study of Iraq War Veteran’s Exposures to Burn Pits and other Combat-related Experiences.

**Abstract:**

The composition of the population in the local Veterans Affairs’ waiting room changed demographics following the United States involvement in Iraq and Afghanistan over the last seventeen years. Young veterans are returning home, in their twenties and thirties, all with multi-factorial exposures and a wide array of symptoms. Servicemembers do not deploy unhealthy, but often, they return with progressive illnesses and worsening symptoms. Topics investigated including, adverse health effects of exposure(s) to chemicals and particulate matter, open-air burn pits and clinical data across various populations. After reviewing information, an evidence-based exploratory survey was created to investigate health trends in Iraq War veterans pre- versus post-deployment. Researchers hypothesized that most Iraq War veterans had been exposed to burn pits and airborne/environmental pollutants and toxins while deployed and more likely than not have symptoms that correlate to those exposures, as evidenced by self-reported survey data, physical fitness scores and symptoms.

Since 2003, approximately two-million United States servicemembers have deployed to Iraq in support of “Operation Iraqi Freedom”. Increased rates of respiratory illnesses have been discovered in otherwise healthy soldiers who have been to Iraq. Upon returning home from combat, physical pieces of Iraq still linger deep inside many servicemembers causing unexplained symptoms, debilitating physical ailments and rare forms of diseases that is more commonly seen in a 72-year-old rather than a previously healthy, athletic 26-year old (Miller, 2013).

From an exposure-to-healthcare perspective, of military combat veterans from all conflicts (World War II to Present) only 34.9% use the Veteran Administration Healthcare System; of that percentage, only 36.4% are Operation Iraqi Freedom and Operation Enduring Freedom veterans (Dept. of Veteran Affairs, 2016). There is currently a widening gap pertaining to OIF/OEF veterans’ exposures and healthcare due to the lack in research of exposures, lapse in preventative and protective strategies and screening methods post-deployment.