Secondary Analysis of Sexual Health of Young Adults in Kalamazoo and Jackson: Gonorrhea

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Healthy People 2020

• Nationwide government organization (2013)
• Improve quality of life
• Goals:
  – Reduce the proportion of gonorrhea infections among males 15-44 years old
  – Reduce the proportion of gonorrhea infections among females 15-44 years old
  – Reduce the proportion of females aged 15-44 who have ever required treatment for pelvic inflammatory disease (PID)
Gonorrhea Prevalence

• 321,849 cases of gonorrhea were reported in the United States in 2011
  – 104.2 cases per 100,000 population
• The mid-west region has the second highest rates of gonorrhea reported
• Michigan was ranked 11th for the highest rates of gonorrhea reported
• Gonorrhea is a current problem
What Does the Literature Say?

• 64% of high school seniors report being “sexually experienced” (Lechner et al. 2013)
  – 29% report lack of condom use

• College-aged students (20-24) are not getting tested (Moore, 2013)
  – Rates are predicted to be higher than reported
Main reasons for not getting tested (regardless of condom-use):

- Perceived lack of risk (#1)*
- Fearful of “procedures”*
- Unfamiliar with the testing process*
- Perceived negative consequences
- Worried/embarrassed about what others would think
- Afraid that someone might see them get tested

Condom-user were less likely to get tested (Moore, 2013)

Colleges and universities prioritize other topics over sexual health: influenza, responsible alcohol consumption (Lechner et al., 2013)

- A little over half (52%) of college students reported getting any information from their college about STIs
Gonorrhea

- Gonorrhea is a treatable *sexually transmitted infection* (STI) (CDC, 2013)
- Caused by the bacterium: *Neisseria Gonorrhoeae*
- Transmission: sexual activity (genital, anal or oral)
- Lives easily in reproductive tract
- Contact area (mouth, throat, eyes, and anus)
- Second most common reported STI in the U.S.
- Common: teenagers, young adults, and African Americans
Symptoms

• Mostly asymptomatic

• **Females**
  – Painful or burning while urinating,
  – Vaginal discharge
  – Vaginal bleeding between periods

• **Males**
  – Burning while urinating
  – White, yellow, or green discharge
  – Painful or swollen testicles
Symptoms

• Rectal symptoms (both)
  – Soreness
  – Bleeding
  – Painful bowel movements

• Throat symptoms (both)
  – Soreness

• If symptomatic present themselves 1 day-2 weeks after being infected
Complications: Females

- Pelvic inflammatory disease (PID)
  - Internal abscesses
- Infertile from damaged fallopian tubes (scar tissue)
- Chronic pelvic pain (PID and EP)
- Risk for Human Immunodeficiency Virus (HIV)/other STIs
- Pregnancy
  - Ectopic pregnancies
  - Miscarriages
  - Premature birth
  - Low birth weight
  - Premature rupture of the membranes
  - Infection in the amniotic fluid
Complications: Males

- Epididymitis
- Inflammation of the testicles
- Infertility
- Increase in risk for Human Immunodeficiency Virus (HIV)/other STIs
Screening

• **Recommendation**: tested 7-10 days after a sexual encounter

• Discuss risk factors

• **Process**:  
  – Most common: urine sample  
  – Symptomatic: discharge sample  
  – Asymptomatic: a swab of the penis, vagina, rectum or vagina

• Tested for additional STIs/HIV
Treatment

• Proper treatment, minimal complications (Bull, 2013)
• Antimicrobial drug is effective in 95% of cases detected early (Torpy et al, 2013)
• Ceftriaxone/Cefixime taken one time orally
• Cephalosporin IM + option of two additional oral medications
  – Azithromycin in a single dose
  – Doxycycline for one week (less adherence)
• All sexual contacts must be tested
• Avoid sexual encounters for one week
• Complicated cases additional treatment
Resistant Forms

- Treatment is becoming complicated (CDC, 2013)
- Bacterium: *Neisseria gonorrhoeae* is developing resistance
- Broad spectrum antibiotic-resistant strains are circulating U.S./world wide
- Cephalosporin’s only treatment option (current)
- Decreased receptiveness to Cephalosporin’s and other treatments is predicted
- Observation of antimicrobial resistance is critical
- Resistant forms must be reported to the health department
Purpose

• To conduct a secondary analysis that will provide the necessary evidence that an education intervention needs to be implemented into the campus of Western Michigan University in hopes to reduce gonorrhea rates among college students, specifically aged 20-24.
Method

• Secondary analysis
• Gonorrhea in Kalamazoo/Jackson County
• Similarities in demographics
• **Main difference**: Kalamazoo, Western Michigan University
• Hypothesis:
  – Higher cases of gonorrhea in Kalamazoo County; university being present
  – Steady increase of gonorrhea
• Targeted age group: 20-24 years old
  – Accounts for most of the University students
  – High rates
• Institutional Review Board (IRB)/public data
Hypothesis

• It was predicted:
  – Higher rates in Kalamazoo compared to Jackson County
  – Steady increase over the span of ten years
County Comparisons

• Demographics
  – Kalamazoo higher population
  – Break down similar

• Characteristics
  – Kalamazoo: Western Michigan University & two other colleges
  – Jackson: Community College
County Comparisons

• Education
  – Little information provided

• Poverty
  – Kalamazoo County average of 19.2% live below poverty line
  – Kalamazoo County average of 47.7% (ages 18-24) live below the poverty line
  – Jackson County average of 15.7% live below the poverty line
Findings

• Highest cases of gonorrhea in the age groups of 15-19 and 20-24
• Females higher reports of gonorrhea cases than males
• Kalamazoo County ages 15-19
  – Females: 91
  – Males: 37
• Jackson County ages 15-19
  – Females: 15
  – Males: 8
Findings

• Females had the highest rates ages 20-24
• Kalamazoo Females 20-24
  – 2011: 69
  – 2001: 106
• Jackson Females 20-24
  – 2011: 18
  – 2001: 60
Findings

• Kalamazoo Males 20-24
  – 2011: 42
  – 2001: 87

• Jackson Males 20-24
  – 2011: 15
  – 2001: 32
Findings

- **Kalamazoo total, 20-24**
  - 2011: 111
  - **2001: 193**

- **Jackson total, 20-24**
  - 2011: 33
  - **2001: 92**
Findings

• Kalamazoo females highest in:
  – 2001 (106)
  – 2005 (107)
  – 2006 (113)
  – 2008 (118)
  – 2009 (118)

• Jackson females highest in:
  – 2004 (84)
  – 2005 (70)
  – 2007 (75)
  – 2008 (70)
Findings

• Kalamazoo Males highest in
  – 2008 (111)
• Jackson Males highest in
  – 2003 (49)
  – 2004 (43)
Gonorrhea rates—by Gender in the United States (CDC, 2013)
Discussion

• Hypothesis: Higher in Kalamazoo, true
• Hypothesis: Steady increase, false
• Presence of gonorrhea infections in both counties
• Higher rates in Kalamazoo
  – Cannot be certain it is because of the University
  – STIs are reported back to U.S. census location
• Overall, higher in females
• Overall, highest in 15-19 & 20-24
• Inconsistent from year to year, staggered statistics reported
Discussion

• **Education**: lack of education, increase in gonorrhea rates
  – No information education levels for the 20-24 year old age group
  – Potential association between the reported rates/low education levels

• **Poverty**: poor health outcomes
  – Problem in Kalamazoo County
  – Higher percentage of people living in poverty may contribute to the higher number of cases
  – 18-24 highest percentage of people living below the poverty line and had highest reports of STIs
  – Lack of information about poverty in Jackson County
Alternative Reasoning

• More efficient screening methods
• Females have higher rates:
  – Hormonal birth control
  – Females are also getting their first pap smear around 18-21 (high rates)
  – Anatomy
Limitations

• Information is from 2010-2011
• Limited information available on education in both counties
• Both counties were Caucasian predominate
• Jackson/Kalamazoo County two different averages living below the poverty line
• College student counts in the U.S. census
  – Students should be counted in the population of the county they reside in for the majority of the year
  – May not be counted, if their driver license indicates they are from a different county
  – Population may not be reliable
Recommendations

• Education segment during freshmen orientation
• Required
• Before classes start
• One hour “info session”
• Conducted by a nurse (Sindecuse or the Kalamazoo Health Department)
• Talk fluently about sexual health
• Provide reliable information
• Answer any questions presented by students
Info Session

• How to contract an STI
• Protection—using condoms
• Symptoms/lack of symptoms (especially in males)
• Complications
• Treatment
• Resources on/off campus provide handouts with information/hours of testing
• Eliminate myths
Info Session

• Educate on the process of STD testing (can be non-invasive urine sample)
• Cost and insurance information
• Provide a non-judgmental environment
• Allow for private questions at the end with confidentiality
• Provide on-site testing after info session
References


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