1 2	Original Research Article Vulnerability and Gonorrhea: A Qualitative Study of Black Women in South Africa
3	Abstract
4	Background: Gonorrhea is becoming a health concern globally due to its susceptibility to
5	anti <u>resistance of antibioticsmicrobial the resistance of antibiotics</u> , and this is a concern
6	particularly for Black women in South Africa. Vulnerability among Black women leads to
7	unsafe sexual practices, and this qualitative study explores the relationship between
8	vulnerability and risk of gonorrhea.
9	Methods: To understand this relationship, participantsParticipants were interviewed using an
10	in-depth questionnaire at Lovelife, a local non-governmental organization in the Langa
11	township of Cape Town, South Africa from October 2014-December 2014. Interviews were
12	conducted using the information-motivation-behavioral skills conceptual framework and
13	analyzed using thematic coding and triangulated through member-checking.
14	Results: Vulnerability affected the women's motivation to change at-risk behavior because
15	the control was out of her hands. Of the 12 respondents, 92% were unemployed and
16	dependent on her partner and his family (in some circumstances), which lowered their sexual
17	power and ability to make decisions about sexual behavior that led them to at least one
18	gonorrhea infection.
19	Conclusion: The findings from this study are of greathave social influence globally because
20	regardless of age, social economic status (SES) or educational level, women feel a need to
21	discuss behavior in a medium that is not judgmental or instructive, but one that fosters
22	openness and support.

23 Vulnerability and Gonorrhea: A Qualitative Study of Black Women in South Africa

24 Introduction

25	Gonorrhea incidence rates in South Africa (SA) are among the highest globally (Titus,
26	2011). Coinfection with HIV is currently a concern with the distribution of gonorrhea among
27	teenagers and young adults whomwho are at the highest risk of infection. Young women in
28	South Africa are atatt greatest risk of being infected with HIV with the prevalence in the age
29	group 15 to 24 being 16.9% in women <u>versus-and</u> 4.4% in men in 2005 (Muula, 2008).
30	Gonorrhea is the second most common notifiable disease in the United States with 333,004
31	cases reported in 2013 (CDC, 2013). The rates of gonorrhea continued to be highest among
32	African Americans in 2013 with 426.6 cases per 100,000 occurring 12.4 times greater than
33	the rate among whites with 34.5cases per 100,000 (CDC, 2013). African American women
34	aged 20 to 24 disproportionately had the highest gonorrhea rate of any ethnicity group of
35	1,949.1 per 100,000, followed by 15 to 19-year-old African American women of 1,768.5 and
36	20 to 24-year-old black men of 1,734.5 per 100,000 (CDC, 2013). The WHO estimates that
37	the total number of new cases of STIs in the African Region was 93 million and among that
38	number, there were 21 million cases of N. gonorrhoeae (WHO, 2008). According to a study
39	based in Ghana, gonorrhea is one of the most prevalent STIs worldwide, with a major
40	percentage found in developing countries (Duplessis et al., 2015). There was variation in of
41	STI prevalence among African countries and targeted populations in studies of adults
42	presenting with STI symptoms with a gonorrhea diagnosis of 0.4% in Congo, 5.7% in Benin,
43	8.4% in Tanzania, 17.1% in Malawi, and 1.4% in Zambia (Duplessis, 2015, p. 20).
44	Gonorrhea is becoming a health concern globally due to its susceptibility to
45	antibioticntimicrobial antibiotic resistance: $\frac{1}{12}$ and this is a concern particularly for Black
46	women in South Africa. In the recent years, antibiotic resistance has been found in many
47	countries, such as Norway, England, Austria, France, Canada, Vietnam, England, Wales, and
	2

48	Sweden with 31% having decreased susceptibility to treatment (Duplessis et al., 2015).
49	Vulnerability refers to the individual factors that increase the risk of HIV/STI infection
50	(Lamptey, 2002). The vulnerability paradigm explains that women's susceptibility to HIV_is
51	because of biological differences versus with versus men, reduced sexual autonomy, and
52	men's sexual power and privilege (Higgins et al., 2011).
53	UNAIDS considers that vulnerability includes factors outside the control of the
54	individual, which reduces her the ability of individuals and within communities to avoid the
55	risk of HIV/STIs (Nzewi, 2009). Poverty is a characteristic that increases the vulnerability of
56	women with unsafe sexual practices because of lack of knowledge, lack of access to
57	protection, and the inability to negotiate condom use (Booysen & Summerton, 2002). Some
58	of the individual factors include unemployment, illiteracy, and gender inequality. These
59	factors <u>arecan also be</u> characterized as social, but in the context of this psychosocial study
60	determinant factor, they will be classified as individual susceptibilities. The concept of
61	v¥ulnerability has been studied in various populations around the world, and although Black
62	women in South Africa are affected the same way in regards to disease burden, this study
63	used qualitative methodology to get a deeper understanding of how vulnerability affected the
64	risk of gonorrhea.
65	The main-objective of in of the study was "How does a woman's sense of vulnerability
66	play a part in risk of gonorrhea among Black South African women?"?" Vulnerable persons
67	in many countries can include adolescent girls and women. If any factors come into play,
68	such as illiterate women with limited skills, few job opportunities, and limited access to
69	health information and services, are more likely than other women to engage in unprotected
70	sex for money increasing their vulnerability and risk of infection (Lamptey, 2002). Women
71	are also considered vulnerable to rape and violence in their relationships and tend to have
72	limited control over their sexual relationships (Johnson & Budlender, 2002). Promiscuity is

73	also a risk factor found in literature and women are put at risk because of whom they have
74	sex with rather than how many people they have sex with (Johnson & Budlender, 2002).
75	Interventions that address vulnerability to create economic opportunities for those at most
76	risk, can decrease vulnerability and risk of infection among the most affected groups.
77	Methodology
78	The use of qualitative methods for this study was chosen after reviewing the literature with
79	an emphasis on Black women regardless of geographic location because it allowed the participant to
80	feel more at ease with the process of the research being in their home area. Particularly in South
81	Africa, many research studies are ongoing that are mainly focused on maternal and child health and
82	vaccine research. In particular, HIV studies are quantitative in nature, so this study design may be a
83	refreshing change to allow for the participants to have a voice. The key concept used was the IMB
84	theory that is used to define the constructs affecting risk-reduction behavior among Black women.
85	Using the qualitative design methodology, the data collection methods used individual interviews to
86	allow the women study participants to share their ideas on the psychosocial and behavioral
87	manifestations that affect their sexual habits.
88	The IMB skills theory (Rudestam & Newton, 2007) used in this research was the framework
89	to help construct the interview questions and frame the results. The theory defines the constructs in
90	which women can share their ideas on the psychosocial and behavioral manifestations that affect
91	their sexual habits to examine similarities with Black women. In order to do this, themes from open-
92	ended questionnaires and focus groups that are characteristic of qualitative methodology would be
93	the theoretically ideal structure for this study. Looking at specific elements in the research to either
94	support or reject tested hypotheses or address the same from previous empirical research,
95	quantitative would be better suited for this research. From the literature search, there have been no
96	other studies conducted from an epidemiological standpoint to find out if psychosocial and
97	behavioral factors contribute to risk of gonorrhea.
	4

98 Study Setting and Participants

99	The research was undertaken in a government-funded clinic in the Langa Township
100	located in the metropolitan area of Cape Town, South Africa. Townships in South Africa are
101	historically predominately Black African with a majority Xhosa in traditional ethnicity and
102	language. In Langa, Black Africans make up 99 .5 % of the population, unemployment <mark>is</mark>
103	405640%, and females make up 50.424 % of the population according to the 2011012011
104	Cape Town CensusOut of the female population-iniIn Langa, 2.2% have no schooling, 4%
105	have completed primary, 45% have some secondary education, and 334033% have a Grade
106	12 education (Cape Town Census, 2011). With females as the predominatepredominant te
107	gender in Cape Town, the probability of reaching study participants was greater. One of the
108	main reasons for the choice to study in this particular area was because these populations
109	have high incidences of HIV and STI among Black females.
110	Many of the local residents use government-funded public health clinics because of
111	easy accessibility, free services, and most residents do not have national health insurance.
112	The clinic has trauma services, mental health services, a pharmacy, obstetrics, and HIV/AIDS
113	and STI unit, and psychiatric services, among others, making them full-service health
114	facilities. The LoveLife organization is a non-profit group that caters to young adults and
115	comprehensive sexual preventive services. LoveLife is very visible in the local area and
116	works with the local schools to deliver education about how to practice safe sex and other
117	sexual preventive methods to curb the high rate of HIV/STIs in the area.
118	To be eligible for the study, <u>all</u> participants had to be a Black female, aged 18 to 35

118 To be eligible for the study, <u>all</u> participants had to be a Black female, aged 18 to 35
119 years old, read and speak at least intermediate English. All correspondence was translated in
120 Xhosa to increase the chances of greater participation. Each participant would have had at
121 minimum one sexual experience and at least one positive test for gonorrhea in the past two?

122	years. The goal was to recruit as many participants who had received a positive test for
123	gonorrhea within the past $\frac{1}{1002}$ years with a goal of no less than 10 participants. Ten was the
124	minimum target because, in a review of prevalence studies within this geographic area and
125	population, it was not difficult to recruit participants. Although this study had a small sample
126	of 12 participants, this is normal in qualitative studies to allow the time for the researcher to
127	establish trust with each participant and dig deeply into their thought processes and feelings.
128	TIn order to recruit as many participants as possible to give a detailed understanding of the
129	psychosocial effects of the women affected by gonorrhea, I asked LoveLife to assist in
130	passing out flyers for participant recruitment. Walden's IRB board recommended this way of
131	recruitment as opposed to clinic nurses and doctors asking participants directly to avoid
132	participants being coerced coercion ced into being in the study. This analysis solely focuses on
133	vulnerability and was part of a larger study, thus the small number of participant responses
134	and quotes from participants #8 and #9, respectively.
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147	part of the study but could not speak English fluently or was not confident in the language
148	weould not be excluded due to a language barrier. Lovelife provided translators for use in the
149	study. , which was satisfied through LoveLife that had translators available for my use. There
150	were approximately four participants who asked for a translator. to be part of the interview.
151	Before the interview began, I went over the Informed Consent form and received consent
152	from each participant.
153	A number of studies have been conducted in the clinics, so the participating women
154	are aware of research study settings. Because of the number of studies that have been done in
155	the clinics with HIV, the women are aware of how studies are conducted. Compensation of
156	R50 grocery store vouchers were wasere provided for given to participants for volunteering
157	their time to participatingparticipateing in the study. Data collection included individual one-
158	on-one in-depth interviews.
159	Measures
160	The outcome variable Vulnerability was created using three sets of questions:
161	a. Why would you refrain from sexual contact if you or your partner had
162	gonorrhea?
163	b. How confident are you with using condoms and are you able to negotiate with
164	your partner to use condoms if you are not in a monogamous relationship?
165	c. How confident are you to refuse sexual intercourse with your partner if they
166	choose not to use a condom?
167	Coding of the following themes were uncovered by the participant's responses: The
168	participant's respondents were then coded with the following themes poverty, basic needs,
169	sexual power, decision making, and violence in the relationship.

170 Data Analysis

171 Data analysis began with transcription of the focus groups and hand-coding of themes 172 found from the one-on-one interviews with study participants. The interviews were 173 transcribed and hand-coded on a line by line basis. DFrom this process, descriptive themes 174 were then deciphered from the variables outlined with the psychosocial variables previously 175 discussed. There was no need to use a qualitative software package because the themes and codes could be deciphered from hand-coding. <u>MThe use of methodological</u> triangulation to 176 177 establishestablished credibility and dependability was established in the data collection and 178 analysis stages, respectively, as participants were given a questionnaire beforeprior to the interview to gather demographic information. When the research questions were given in the 179 180 individual interview, more Pprobing questions were asked for clarification if more analysis 181 was needed from the participant responses. Member checking occurred at the completion of 182 the interview through replaying the audio-tape to determine if the responses were accurate 183 and if they reflected the predicted true outcomes. 184 **Results and Discussion** 185 **Demographics** 186
Table 1 presents the demographic characteristics of the participants. The research

187 participants (Table 1), 92% of the women were unemployed, 58% were high school graduates

188 (25% had less than a grade 12 education, and 17% were university students). All of the

participants considered themselves single, but 67% were in a relationship, and 33% were

single, not in a relationship. The average age of the study participants was 21.7 years old.

191 Demographic Characteristics of the Study Sample

192	Measure	Total Sample (N=12)
193	Age (years, average)	21.7
194	Unemployed (yes)	92%

195	High School education completed	75%
196	Single (Not in a current relationship)	33%

197

The desire to change at-risk behavior in order-to prevent STI transmission and 198 199 prevention is dependent on the individual motivation to make said changes. The majority of 200 women in the study were adamant that after having a positive gonorrhea diagnosis, they are 201 fully confident and motivated to practice safer sex. Vulnerability affected the women's 202 motivation to change at-risk behavior because the control was out of their hands. The 203 overwhelming majority, 92% of women, were unemployed and dependent on their partner 204 and his family (in some circumstances), which lowered their sexual power and ability to 205 make decisions about sexual behavior. About half of the women continue to stay in abusive 206 relationships with the partner who gave them the disease. For some of the women, the partner 207 never received treatment due to lack of believing that he was infected which makes for the 208 answering of particular questions in the interview related to this determinant difficult to 209 decipher among those women. Women are put at risk because of whom they have sex with 210 (as found with the majority of women) rather than how many people they have sex with 211 although in a couple of cases with the participants, affection and self-gratification was sought 212 by casual encounters. This analysis solely focuses on vulnerability and was part of a larger 213 study, thus the small number of participant responses and quotes from participants #8 and #9. respectively. 214

Vulnerability focuses on the individual factors that increase the risk of HIV/STI infection that are out of the control of the individual. Several of these factors came out in the interviews including unemployment and gender inequality. The majority of women in the <u>study</u> stated that they do not work and rely on family and boyfriends for basic needs that at times results interview violence in relationships with limited control in the relationship. 220 Participant #8:

221 For most of them [women that stay in violent relationships], it's because they are 222 dependent on the guy--financially and emotionally. For them, they come from a 223 broken home, so they look at the boyfriend as a refuge because when you go home, 224 there is no food, mom is drunk and dad is drunk; no one has their story on. You go to 225 your boyfriend's house and then everyone welcomes you there with warm hands, you 226 can sleep there, they buy you clothes, everything. Behind closed doors, he beats you 227 up-blue eyes. The mom wouldn't be concerned and would ask about the blue eye, but 228 once you smile, they want to shower you with gifts. So that you forget the abusive 229 relationship so I think [they stay] because of broken families and depending on the 230 person.

Having multiple partners was found to be a factor in the data collection in the form of women seeking out affection and self-gratification from someone other than their main boyfriend.

234 Participant #9:

235 No, I didn't know [who gave her gonorrhea]. There was one time I did have a risky 236 situation. So, it happened then, so I wasn't sure. I thought he [the boyfriend] would 237 say it was from you, you came to me with this thing. But I had to speak to him about 238 it to go to the clinic. When the time came to have sex, I couldn't so I had to be open 239 why. But I didn't tell him about the risky decision I had on the side. [Tell me more 240 about the risky decision you had on the side] It was a guy I was chatting with and then 241 the feelings developed and went to another level but after we did that, I just saw that it 242 was wrong. I was flattered with the words he was saying, and then I did that [had 243 unprotected sex].

The research question asked: "How does a woman's sense of vulnerability play a part in risk of gonorrhea among Black South African women?" The answer is that vulnerability is an important psychosocial factor to predetermineinto predetermininge among high risk groups because it lowers the ability to make safe choices in relationships or home dynamics that contribute to the risk of disease. A key finding in this study was that the motivation to change risky behaviors is affected by the women's sense of vulnerability to how much control she has in her relationship.

The research addressed social and structural barriers that increase vulnerability offee
STI infection—two of the key strategic objectives for the South African National AIDS
Council's National Strategic Plan--is critical to decreasing sexual disease epidemics that
affect the country, in particular, impoverished areas that have limited basic resources.

255 Implications for Practice and Hor Policy

256 Recommendations for further research should include a wide vast of women in 257 surrounding townships in Cape Town inclusive of Khayelitsha (one of the largest townships 258 in Cape Town) and Nyanga, and also townships within the greater Johannesburg area. 259 Because of the interest of the women to "tell their story" and to have a say about their life, 260 concerns, and behaviors, this study could easily expand to not only South Africa, but to all 261 parts of the world. A comparison study of Black women in South Africa with Black women in populated areas in the United States could really give salient information about the 262 263 information, motivation, and behaviors of sexually vulnerable women in regards to 264 relationships and relevant target focused support interventions could be established all over 265 the world.

The effectiveness of the targeted interventions could have a significant impact on the disproportionate incidence and prevalence of HIV/STIs among Black women globally. The

268 interventions have to allow the participants to speak freely about their vulnerabilities and 269 influence of peer and family pressures on sexual behavior, and lack of economic and social 270 support in their understanding of sexual behavior information and knowledge to actually 271 make a difference in consistent-practices of preventive sexual behaviors. Individual 272 interviews are is ideal to gather information with someone experienced and understanding of 273 impoverished communities to incite real and authentic conversations among the participant 274 group in regards to personal conversations about sexual behavior. 275 The potential impact of this study for positive social change at the individual level is 276 the confidence and sexual power that a vulnerable woman can develop. Women's understanding of the importance of maintaining confidence (information and motivation) in 277 278 providing and using contraception whether in a monogamous or causal relationship is 279 imperative in reducing the burden of disease among this population. 280 Families have to have a significant change in conversation and dynamic in order for a 281 woman to feel secure enough to trust those around them to speak up and not hide concerns 282 when they feel a sense of vulnerability to their sexual behaviors and relationships. 283 Having knowledge of the impact of education and economic factors on women of 284 reproductive age can be resourceful in establishing job creation and awareness of the importance of education. Education would to extend options and form a way out of 285 286 impoverished households and abusive relationships that can lead to high risk and burden of disease. Thisthat can be addressed at the societal and policy levels, respectively. Most of the 287 288 stakeholders and advocates of social change in regards to HIV/STIs affecting vulnerable populations found in townships and m rural areas of South Africa link together with other 289 290 human rights organizations (i.e. Treatment Action Campaign (TAC)), to spark movements of change, but are currently under-sourced and underfunded. If this continues to occur, health 291

challenges in communities in most need will continue to be disenfranchised and under-represented.

294 The main recommendation for practice in a community such as Langa is that it is 295 imperative to first to get a sense of the dynamics of the community that is involved in the research. This allows dialogue Ddialogue willto maintain consistency and also limit risks 296 297 associated with studying a vulnerable population. Also, development of relationships by the 298 researcher with the community partner assisting in the research from the executive level to 299 the entry level is crucial in maintaining integrity and support throughout the data collection 300 and data analysis stages of the research. At the end of the studyresearch, a presentation given 301 by the researcher to the stakeholders in the community—inclusive of the community partner 302 and its' stakeholders allows those involved and even those not directly involved to 303 understand that they were a significant partner in the outcomes of the research done in their 304 community.

305 Conclusion

306 This study focused on the attitudes and behaviors of Black women in the township of 307 Langa in regards to their understanding of the variables that impacted their diagnosis of the 308 STI gonorrhea. The literature stated that this population was most at risk for HIV/STIs, and 309 this research has showed showned that more work needs to be done to consider the individual 310 components of sexual behavior among this population, partnership dynamics, and 311 social/environmental influence. PAlthough preventive methods have been implemented by 312 NGOs like LoveLife, inclusive of their local establishments and clinics, more continuous 313 work is needed to keep the at-risk group informed about their risk. The findings from this 314 study can be of great social influence globally because regardless of age, SES or educational 315 level, women feel a need to discuss behavior in a medium that is not judgmental or 316 instructive, but one that fosters openness and support. Quantitative follow-up studies should

317	be conducted to get access to the quantifiable psychosocial determinants of a larger
318	population of women in order to tailor support groups and workshops to each particular
319	variable to impact this sentinel group.
320	References
321	Booysen, F. R., & Summerton, J. (2002). Poverty, risky sexual behaviour, and vulnerability
322	to HIV infection: Evidence from South Africa. Journal of Health Population
323	Nutrition, 20(4), 285-288.
324	Centers for Disease Control and Prevention. (2013). 2013 STD surveillance gonorrhea.
325	Retrieved from http://www.cdc.gov/std/stats13/gonorrhea.htm
326	City of Cape Town/ (2001). <i>Population census</i> . Retrieved from
327	https://www.capetown.gov.za/en/stats/2011CensusSuburbs/2011_Census_CT_Suburb_La
328	nga_Profile.pdf
329	Duplessis, C., Puplampu, N., Nyarko, E., Carroll, J., Dela, H., Mensah, A., Amponsah, A.,
329 330	Duplessis, C., Puplampu, N., Nyarko, E., Carroll, J., Dela, H., Mensah, A., Amponsah, A., Sanchez, J. (2015). Gonorrhea surveillance in Ghana, Africa. <i>Military Medicine</i> , 180(1),
330	Sanchez, J. (2015). Gonorrhea surveillance in Ghana, Africa. Military Medicine, 180(1),
330 331	Sanchez, J. (2015). Gonorrhea surveillance in Ghana, Africa. <i>Military Medicine</i> , 180(1), <u>17-22. doi: 10.7205/MILMED-D-13-00418</u>
330 331 332 333	 Sanchez, J. (2015). Gonorrhea surveillance in Ghana, Africa. <i>Military Medicine</i>, 180(1), <u>17-22. doi: 10.7205/MILMED-D-13-00418</u> Higgins, J. A., Hoffman, S., & Dworkin, S. L. (2011). Rethinking gender, heterosexual men, and women's vulnerability to HIV/AIDS. <i>American Journal of Public Health</i>, 101(4),
330 331 332 333 334	 Sanchez, J. (2015). Gonorrhea surveillance in Ghana, Africa. <i>Military Medicine</i>, 180(1), 17-22. doi: 10.7205/MILMED-D-13-00418 Higgins, J. A., Hoffman, S., & Dworkin, S. L. (2011). Rethinking gender, heterosexual men, and women's vulnerability to HIV/AIDS. <i>American Journal of Public Health</i>, 101(4), 585.
330 331 332 333 334 335	 <u>Sanchez, J. (2015). Gonorrhea surveillance in Ghana, Africa. Military Medicine, 180(1),</u> <u>17-22. doi: 10.7205/MILMED-D-13-00418</u> Higgins, J. A., Hoffman, S., & Dworkin, S. L. (2011). Rethinking gender, heterosexual men, and women's vulnerability to HIV/AIDS. American Journal of Public Health, 101(4), 585. Johnson, L., & Budlender, D. (2002). HIV risk factors: A review of the demographic, socio-
 330 331 332 333 334 335 336 337 338 	 <u>Sanchez, J. (2015). Gonorrhea surveillance in Ghana, Africa. Military Medicine, 180(1),</u> <u>17-22. doi: 10.7205/MILMED-D-13-00418</u> Higgins, J. A., Hoffman, S., & Dworkin, S. L. (2011). Rethinking gender, heterosexual men, and women's vulnerability to HIV/AIDS. <i>American Journal of Public Health, 101</i>(4), 585. Johnson, L., & Budlender, D. (2002). HIV risk factors: A review of the demographic, socio-economic, biomedical and behavioural determinants of HIV prevalence in South
 330 331 332 333 334 335 336 337 338 339 340 	 <u>Sanchez, J. (2015). Gonorrhea surveillance in Ghana, Africa. Military Medicine, 180(1),</u> <u>17-22. doi: 10.7205/MILMED-D-13-00418</u> Higgins, J. A., Hoffman, S., & Dworkin, S. L. (2011). Rethinking gender, heterosexual men, and women's vulnerability to HIV/AIDS. American Journal of Public Health, 101(4), 585. Johnson, L., & Budlender, D. (2002). HIV risk factors: A review of the demographic, socio-economic, biomedical and behavioural determinants of HIV prevalence in South Africa. Care Monograph, 8, 1-49.
 330 331 332 333 334 335 336 337 338 339 	 <u>Sanchez, J. (2015). Gonorrhea surveillance in Ghana, Africa. Military Medicine, 180(1),</u> <u>17-22. doi: 10.7205/MILMED-D-13-00418</u> Higgins, J. A., Hoffman, S., & Dworkin, S. L. (2011). Rethinking gender, heterosexual men, and women's vulnerability to HIV/AIDS. American Journal of Public Health, 101(4), 585. Johnson, L., & Budlender, D. (2002). HIV risk factors: A review of the demographic, socio-economic, biomedical and behavioural determinants of HIV prevalence in South Africa. Care Monograph, 8, 1-49. Lamprey, P.R. (2002). Reducing heterosexual transmission of HIV in poor countries.British
 330 331 332 333 334 335 336 337 338 339 340 341 	 <u>Sanchez, J. (2015). Gonorrhea surveillance in Ghana, Africa. <i>Military Medicine, 180</i>(1),</u> <u>17-22. doi: 10.7205/MILMED-D-13-00418</u> Higgins, J. A., Hoffman, S., & Dworkin, S. L. (2011). Rethinking gender, heterosexual men, and women's vulnerability to HIV/AIDS. <i>American Journal of Public Health, 101</i>(4), 585. Johnson, L., & Budlender, D. (2002). HIV risk factors: A review of the demographic, socio-economic, biomedical and behavioural determinants of HIV prevalence in South Africa. <i>Care Monograph, 8</i>, 1-49. Lamprey, P.R. (2002). Reducing heterosexual transmission of HIV in poor countries.<i>British Medical Journal, 324</i>(7331), 207-211. doi: 10.1136/bmj.324.7331.207

345 346 347	Muula, A. S. (2008). HIV infection and AIDS among young women in South Africa. <i>Croatian Medical Journal, 49</i> (3), 423-435. doi: 10.3325/cmj.2008.3.423
348 349	Nzewi, O. (2009). Exploring gender issues and men's vulnerability to HIV/AIDS in Sub-
350 351 352	Saharan Africa. Policy Brief 56. Centre for Policy Studies, Johannesburg.
352 353	Reday, P., & Frantz, J. (2011). HIV/AIDS knowledge, behavior and beliefs among South
354	African university students. <i>Journal of Social Aspects of HIV/AIDS</i> , 8(4), 165-170.
355	Doi: 10.1080/17290376.2011.9725000
356	Risser, J., El Reda, D., Meade, C.D., Hughes, E., Perry, M., & Harms, J. (2002).
357	Epidemiological profile of sexually transmitted diseases—Houston, Texas. Retrieved
358	from http://www.houstontx.gov/health/ComDisease/STI/Epi%20Profile%20Entire.pdf
359	Rothenberg, R., & Voigt, R. (1988). Epidemiologic aspects of control of penicillinase-
360	Producing. Neisseria gonorrhoeae, 15(4), 211-216. doi: 10.1097/00007435-
361	<u>198810000-00007</u>
362	Rudestam, K. E. & Newton, R. R. (2007). Surviving your dissertation: A
363	comprehensive guide to content and process (3rd ed.). Newbury Park, CA: Sage
364	Publications.
365 366 367	Thomas, J., & Harden, A. (2008). Methods for thematic synthesis of qualitative research in
368 369	systematic reviews. BMC Medical Research Methodology, 8(1), 45-55. doi:
370 371	10.1186/1471-2288-8-45
372 373	Titus, A. (2011). The paradox of South Africa: how antibiotic resistance fits into the health
374	picture. Retrieved from
375	http://www.cddep.org/blog/posts/paradox_south_africa_how_antibiotic_resistance_fit
376	s_health_picture#sthash.uXX1frE9.7s3YbPiO.dpbs
377	World Health Organization. (2008). Global incidence and prevalence of selected curable

378	sexually transmitted infections. Retrieved from
379	http://apps.who.int/iris/bitstream/10665/75181/1/9789241503839_eng.pdf
380	
381	