



UNIVERSITI PUTRA MALAYSIA

***FACTORS AFFECTING UPTAKE OF CERVICAL CANCER SCREENING
AMONG AFRICAN WOMEN ATTENDING SELECTED CHURCHES IN
THE KLANG VALLEY, MALAYSIA***

NWABICHIE CHINEMEREM CECILIA

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By

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**Thesis submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in Fulfillment of the Requirements for the Degree of Master of Science**

January 2018

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Master of Science

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January 2018

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Introduction: Cervical cancer is a health concern among women worldwide as it ranks as the fourth most common type of cancer among women. Human papillomavirus (HPV) 16 and 18 are the main causative agent of Cervical cancer. Cervical cancer can, however, be prevented with early and regular cervical cancer screening.

Appropriate and regular cervical cancer screening can reduce Cervical cancer incidence and mortality by as much as 80%. So many factors such as Insurance status, income, educational level, Knowledge, perceived barriers and many others have been determined by researchers to be significantly associated with the uptake of cervical cancer screening.

Objective: This study aims to identify the cervical cancer screening practices and factors affecting the screening status of African immigrant women attending selected church services in Klang Valley, Malaysia.

Methodology: A cross-sectional study among 320 randomly selected respondents between ages 18-69 was conducted in three different churches with high number of African participant in Klang Valley. A structured questionnaire was used to conduct a face to face interview. Three levels of analysis were conducted using SPSS 21, involving descriptive analysis, chi square and multiple logistic regression.

Results: The response rate was 98.2%, majority of the respondents were aged 31-50 years, and married. The prevalence of screening among the respondents since the past

3years was 27.2%. Using a p-value of 0.05 as the significance level, the final model showed that marital status ($p=0.004$, AOR=2.257, 95%CI=1.006-4.361), knowledge ($p=0.035$, AOR=3.217, 95%CI= 1.027-6.216), perceived barriers ($p=0.003$, AOR=3.110, 95%CI=2.461-6.426) and having a regular health care provider ($p<0.001$, AOR=2.693, 95%CI=1.001-4.361) were the only significant predicting factors of uptake of cervical screening among African immigrant women in Klang Valley, Malaysia.

Conclusion: The findings revealed that the uptake of cervical cancer screening among the respondents since the past 3years was very low. Marital status, Regular health care provider, knowledge and perceived barriers are the predicting factors.

The government and ministries concerned with cervical cancer screening should develop and increase intervention programs and public health enlightenment messages through the mass media, hospitals, schools and so on, which will also reach this target group. There is also a need to educate the spouses about cervical cancer screening as spousal support could serve as a source of encouragement to the women to go for screening.

Key words: cervical cancer, Pap test, African women in Malaysia

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

**FAKTOR MEMPENGARUHI AMBILAN PENYARINGAN KANSER
SERVIKSDALAM KALANGAN WANITA AFRIKA YANG DATANG KE
GEREJA DI LEMBAH KLANG, MALAYSIA**

Oleh

NWABICHIE CHINEMEREM CECILIA

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Pengerusi : Rosliza Abdul Manaf, PhD
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Pengenalan: Kanser serviks merupakan isu kesihatan dalam kalangan wanita sejagat kerana ia berada pada kedudukan keempat penyebab kanser paling biasa dalam kalangan wanita. Human papilomavirus (HPV) 16 dan 18 merupakan agen penyebab kanser serviks. Kanser serviks, walau bagaimanapun, dapat dicegah dengan penyaringan pada peringkat awal dan secara berkala.

Objektif: Kajian ini bertujuan untuk mengenal pasti amalan penyaringan kanser serviks dan faktor yang mempengaruhi status penyaringan wanita imigran dari Afrika di Malaysia.

Metodologi: Kajian keratan rentas dalam kalangan 320 responden yang dipilih secara rawak berumur antara 18-69 tahun telah dijalankan di tiga gereja berbeza yang mempunyai bilangan penganut Afrika tertinggi di lembah klang. Soal selidik berstruktur telah digunakan untuk menjalankan temu bual bersemuka. Tiga tahap analisis telah dijalankan menggunakan SPSS 21, melibatkan analisis deskriptif, khi kuasa dua dan regresi logistik berganda.

Keputusan: Kadar respon ialah 98.2%, majoriti responden berumur antara 31-50 tahun, dan sudah berkahwin. Prevalens penyaringan kanser serviks dalam kalangan responden sejak tiga tahun lepas ialah 27.2%. Dengan menggunakan nilai $p=0.05$ sebagai tahap kesignifikanan, model terakhir menunjukkan bahawa status perkahwinan ($p=0.004$, AOR=2.257, 95%CI=1.006-4.361), pengetahuan ($p=0.035$, AOR=3.217, 95%CI= 1.027-6.216), dan halangan teranggap ($p=0.003$, AOR=3.110, 95%CI=2.461-6.426), dan mempunyai penedia perkhidmatan kesihatan yang tetap ($p<0.001$, AOR=2.693, 95%CI=1.001-4.361) merupakan faktor ramalan yang

signifikan bagi penyaringan kanser serviks dalam kalangan wanita imigran Afrika di Lembah Klang, Malaysia.

Kesimpulan: Dapatan menunjukkan bahawa ambilan penyaringan kanser serviks dalam kalangan responden sejak tiga tahun lepas adalah sangat rendah. Status perkahwinan, pengetahuan dan halangan teranggap merupakan faktor ramalan. Program kesedaran khusus bagi meningkatkan penyaringan hendaklah direka bentuk dan diimplementasikan oleh pihak berkuasa yang bertanggung jawab.

Kata kunci: kanser serviks, ujian Pap smear, wanita Afrika di Malaysia



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This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Master of Science. The members of the Supervisory Committee were as follows:

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LIST OF ABBREVIATIONS

BM	Bahasa Melayu
CDC	Centre for disease control
CCS	Cervical cancer screening
HCP	Health care provider
MOH	Ministry of health
NHMS	National health morbidity survey
PST	Pap smear test
WHO	World health organization
BC	British Columbia

CHAPTER 1

INTRODUCTION

In this chapter, the background of this study as well as the problem statement, research objectives and the significance of the study was discussed.

1.1 Background of study

Cancer is a type of illness whereby certain abnormal cells in the body grows out of control. Cancer is often named for the part of the body where it starts, so cervical cancer is the type of cancer that starts and affects the cervix of women (CDC, 2012). The cervix is the lower end of the uterus that connects the womb to the vagina. Once the cancerous cells begin to grow, it will slowly invade the whole body causing devastating effects on health (CDC, 2012). Although being highly preventable and treatable if found early, it still the fourth commonest cancer diagnosed in women globally, many women still develop the cancer with grave outcomes (WHO, 2012). Globally, about 528,000 new cases of cervical cancer cases are reported each year and about 266,000 women die from this disease (WHO, 2012). Malaysia has a population of 11.55 million women aged 15 years and older who are at risk of developing cervical cancer. About 2145 women are diagnosed each year and 621 die from cervical cancer (HPV Information Center, 2014). Therefore, it is said to be second most common cancer among women in Malaysia (HPV Information Center, 2014) and second most common cancer among women between 15 and 44 years of age (HPV Information Center, 2014).

Reported by the center for disease control (CDC), cervical cancer treatment involves surgery such as local excision in early stages and hysterectomy in advanced stages, also chemotherapy and radiotherapy can be an additional treatment depending on physician's advice. The prognosis becomes very poor when advanced and causes high mortality. Detecting and treating it at the precancerous stage has being the best way to reduce the high mortality and morbidity from the disease (CDC, 2012). This method of early detection is what is known as cervical cancer screening. A proper cervical cancer screening has been proven in many studies to effectively reduce the incidence of cervical cancer and the mortality and morbidity associated with it (Saslow, Boetes and Burke, 2008).

There are various methods of cervical cancer screening which includes: conventional cytology also known as Pap smear, liquid based monolayer cytology, human papillomavirus testing (HPV), and visual inspection to detect pre-cancer or cancer. However, this quantitative study would be looking strictly on the Pap smear method because it is the method established by the Malaysian government in the year 1969 (Malaysia Ministry of Health 2004) and also the most common method used globally.

Studies have also shown that Pap smear combined with HPV gives a clearer result (National Cancer Institute, 2008). Hence a person with a normal Pap test and HPV result do not need to worry about repeating another screening in five years (National Cancer Institute, 2008). According to the Malaysian ministry of health it is recorded that every woman over 21 years of age should start having a regular annual screening for the 3 continuous years. After 3 years of normal result, she can now test less frequently like once every three years if she is classified to be at low risk for cervical cancer and should continue yearly pap Smear if she is classified at high risk.

There has been a significant decrease in the number of new and existing cases and deaths from cervical cancer in the last 20 years because of the introduction of the Pap smear in the 1960's and the establishment of free of charge testing in government hospitals and health facilities for all Malaysian native borne women (Ministry of Health Malaysia 2004). While the effect of cervical cancer has diminished in most developing and developed countries following the availability of early cancer detection through screening, cervical cancer still presents heavy burden among several minority groups including immigrants (Howell et al., 2009). However, some minority groups may not take advantage of the available screening services and can suffer greatly from cervical cancer which can impose them with heavy burden (Woltman & Newbold, 2007).

While some studies have determined the factors such as age, marital status, acculturation, insurance status, monthly income, knowledge, perceived barriers, having a regular health care provider and many others that may affect the uptake of regular cervical cancer screening among some minority populations (Downs, Smith, Scarinci, Flowers, & Groesbeck, 2008; Ross, Nunez-Smith, Forsyth, & Rosenbaum, 2008), there is still a limited number of researches on the factors that affect the cervical screening status and practices of immigrant women especially those from Africa, that are living in Malaysia. Many previous researches such as that conducted by Adeyemi (2013) in United states of America (USA) has shown that a higher percentage of women affected by this cervical cancer are from this minority groups of immigrants, so there is need to look into the factors that might be affecting these immigrant women living in Malaysia from up taking the cervical cancer screening. This study aims to fill that gap by providing evidence on some of the factors that may be associated with the cervical cancer screening behaviors among this growing population of immigrants in Malaysia

1.2 Problem Statement

Cervical cancer, despite being potentially preventable and treatable when detected early, is still an important public health issue as is being ranked fourth most common cancer in women worldwide (WHO, 2012).

It is also reported that 80% of cervical cancer cases were diagnosed in developing countries such as Africa and Asian countries (Goldie, et al., 2008). Where it accounts for more than 13% of all cancers in women (Ferlay et al., 2008). This indicates a high incidence of cervical cancer among African women.

In Africa, about 80419 new cases of cervical cancer are reported each year. Therefore, it is said to be the 2nd most common type of cancer after breast cancer among women in Africa (WHO, 2010).

Having used several search mechanisms such as Google scholar, Wikipedia and many others the information regarding the practice of cervical cancer screening of African women living in Malaysia is hardly available, with no or limited studies focusing on this population. However, studies done among this population of women in other countries have shown a low uptake of cervical cancer screening, for instance, Adeyemi found only a prevalence of 28% among African women living in United states of America. Also among African women living in Africa a low prevalence of uptake has also been reported, therefore, this low prevalence of screening that has been determined among African women in other countries and back home in Africa could also be attributed to African women living in Malaysia.

Many studies conducted to investigate cervical cancer screening status and the associated risk factors among women living in their native countries and among women living in foreign countries have also proven that women living in foreign countries may represent a higher level of cases because they may not be using screening services for cervical cancer (Schleicher, 2007). In Malaysia, this screening is available in government and private clinics and hospitals, but this population of African women may not be partaking fully in this screening practice. Therefore, there is a need to know what factors might be preventing them from partaking in cervical cancer screening services that can effectively reduce mortality and morbidity from cervical cancer.

1.3 Significance of the Study

Cervical cancer screening reduces 80% mortality and morbidity from cervical cancer. As Malaysia is a highly diverse country and is made up of people from different geographical locations in the world. Therefore, the health of the country is influenced not only by the health choices of its citizens but of all individuals and groups living in the country (Healthy People 2020).

The findings from this study could provide information on factors that might affect the use of cervical cancer screening services among African women living in Malaysia, thereby encouraging the government and Professionals in the field of Community Health to also identify the prevalence of cervical cancer and screening practices

among these population of women and also gain useful information from this study on how to develop interventions to educate African women and improve the utilization of cervical cancer screening services. Thereby, reducing the morbidity, mortality, and the associated cost of cervical cancer.

During this study, more awareness about cervical cancer screening could be created among African women in Malaysia as Many studies among the African women population have shown that one of the reasons women do not participate in cervical cancer screening is because they lack knowledge about cervical cancer and screening, Aniebue and Aniebue (2010) found that only 58.5% of female undergraduates in a Nigerian University were aware of screening guidelines. Another study by Ogunbowale and Lawoyin (2008) showed that 95% of 278 women that participated in a study had never heard of cervical cancer screening. This lack of knowledge could apply to African women living in Malaysia, hence there is need to increase their knowledge on cervical cancer and screening.

This study could also encourage more researchers to look into the cervical cancer screening of African woman living in Malaysia as they seem not to be any available data or previous study in Malaysia involving cervical cancer and screening practices of African women, despite the high incidence of cervical cancer and low prevalence of screening that has been recorded among African women in other countries.

A study conducted in the USA, estimated the cost of cervical cancer treatment for Medicaid patients to be \$3,807, \$23,187, \$35,853, and \$45,028 at 6 months for in-situ, local, regional, and distant cervical cancer, respectively (Subramanian et al., 2010). This cost increases to \$6,347, \$32,225, \$46,681, and \$83,494 at 12 months for the same stages respectively (Subramanian et al., 2010), it is seen that the major cost contribution (67%) came from treatment of invasive cancer especially at more advanced stages of cancer.

Therefore, there is need to detect and treat this earlier since early detection through screening and earlier treatment is more cost-effective.

Since cervical cancer is highly preventable, more efforts should be put to reduce or stop the occurrence of this disease among all populations.

1.4 Theoretical Base

Theoretical frameworks that have been found useful in explaining health utilization services include the health belief model (Denny-Smith, Bairan, & Page, 2006; Guifoyle, Franco, & Gorin, 2007); behavioral model for vulnerable populations (Owosu et al., 2005); PRECEDE/PROCEED model (Juon, SeungLee, & Klassen, 2003); health investment model (McDonald & Kennedy, 2007); social cognitive theory (McKeever, 2008), and the transtheoretical model (Tung, Nguyen, & Tran, 2008).

However, after considering these models the Behavioral Model for Vulnerable populations was chosen as the theoretical base for this study because Unlike models such as the Health Belief Model and Theory of Planned Behaviour, the Behavioural Model for vulnerable populations positions environmental factors, which have been shown to play a significant role in cervical cancer screening participation, as central components in the determination of health behaviours. In addition, some researchers have found the model to be useful in explaining health utilization among vulnerable group (Baker, Bazargan, Barzargan-Hejazi, & Calderon, 2005; Hogan et al., 2012; Owosu et al., 2005; Stein, Anderson, Robertson, & Gelberg, 2012). The model offers the advantage of traditional and nontraditional domains to explain health utilization among vulnerable groups and the subsequent health outcomes. Using the expanded model as a framework, Fernandez and Morales (2010) found that predisposing factors such as demographic differences and enabling factors such as low income, usual source of health provider, and health insurance have significant association with utilization of screening services among Hispanic women.

The model was developed in the late 1960s, and it theorized that people used Health services based on their predisposing, enabling, and need constructs (Andersen, 1995). The original model has been expanded to include measures of health services used for particular conditions and personal health behaviors and maintenance practices that influence health outcomes (Gelberg, Andersen, & Leake, 2000). The expanded model examines the main constructs of predisposing, enabling, and need under the traditional and vulnerable domains. The predisposing traditional and vulnerable domains include individual characteristics such as age, gender, marital status, ethnicity, education, employment, family size, acculturation, immigration status, literacy, and childhood characteristics (Gelberg et al., 2000). The enabling traditional and vulnerable domains examine factors that enable or hinder the utilization of health services. These factors include personal and family resources such as income, social support, regular source of care, perceived barriers to care, competing needs, public benefits, ability to negotiate within the system, public benefits, self-help skills and community resources such as residence, region, health services resources, crime rate, and social service resources (Gelberg et al., 2000). The need traditional and vulnerable domains include perceived health needs and evaluated health needs of the general population and the perceived and evaluated health needs that can be applied to vulnerable populations (Gelberg et al., 2000).

1.5 Research Questions

- I. What is the prevalence of cervical cancer screening among African women in Klang Valley, Malaysia?
- II. What are the enabling factors, measured by income, health insurance status, acculturation, access to health care facilities and regular health care provider associated with cervical cancer screening status among African women in Klang Valley, Malaysia?
- III. What are the predisposing factors measured by age, level of education, knowledge, and marital status associated with cervical cancer screening status among African women in Klang Valley, Malaysia?
- IV. What are the need factors measured by individual's perceived barriers associated with cervical cancer screening status among African women in Klang Valley, Malaysia?
- V. What are the predictors of cervical cancer screening among African women in Klang Valley, Malaysia?

1.6 General objectives

The general objective of this study was aimed at determining the prevalence of cervical cancer screening among African women in Klang Valley, Malaysia and factors affecting them.

1.7 Specific Objectives

The research objectives of this study are as follows;

1. To describe the general characteristics of respondents that include the predisposing factors, enabling factors and perceived barriers towards cervical cancer screening.
2. To determine the prevalence of cervical cancer screening in the past three years among African women in Klang Valley, Malaysia.
3. To examine the association between predisposing/socio-demographic factors measured by age, level of education, awareness, marital status and cervical cancer screening status among African women in Klang Valley, Malaysia.
4. To examine the association between enabling factors, measured by family income, health insurance, acculturation, access to health care facilities and regular health care provider and cervical cancer screening status among African women in Klang valley, Malaysia.
5. To examine the association between perceived barrier and cervical cancer screening status among African women in Klang Valley, Malaysia.
6. To examine the predictors of cervical cancer screening among African women in Klang Valley, Malaysia.

1.8 Research hypotheses

1. There is a significant association between predisposing/ socio-demographic factors measured by age, level of education, knowledge, marital status and cervical cancer screening status among Africa women in Klang Valley, Malaysia.
2. There is a significant association between enabling factors, measured by family income, health insurance, acculturation, access to health care facilities and regular health care provider and cervical cancer screening status among Africa women in Klang Valley, Malaysia
3. There is a significant association between perceived barriers and cervical cancer screening status among Africa women in Klang Valley, Malaysia.



REFERENCES

- Abotchie, P. N., & Shokar, N. (2009). Cervical cancer screening among college students in Ghana: knowledge and health beliefs. *International Journal of Gynecological Cancer*, 19(3), 412-416.
- Abdullah F, Aziz NA, Su TT.(2011). Factors related to poor practice of Pap smear screening among secondary school teachers in Malaysia. *Asian Pac J Cancer Prev*; 12:1347-52
- Ackerson, K., & Gretebeck, K. (2007). Factors influencing cancer screening practices of underserved women. *Journal of American Academy of Nurse Practitioners*, 19,591-601.
- Aday, L. U (2003). At risk in America. *The health and health care needs of vulnerable populations in the United States*. (2nd Ed.). San Francisco, CA: Jossey Bass.
- Adanu, R. M. K., Seffah, J. D., Duda, R., Darko, R., Hill, A., & Anarfi, J. (2010). Clinic visits and cervical cancer screening in Accra. *Ghana medical journal*, 44(2).
- Adeyemi, M. (2013). Factors Affecting Cervical Cancer Screening Among African Women Living in the United States (Doctoral dissertation, Walden University).
- Akers, A. Y., Newmann, S. J., & Smith, J.S. (2007). Factors underlying disparities in cervical cancer incidence, screening, and treatment in the United States. *Current Problem in Cancer*, 31, 157-181.
- Alba, I D., Sweningson, J. M., Chandy, C., & Hubbell, F. A. (2004). Impact of English language proficiency on receipt of Pap smear among Hispanics. *Journal of General Internal Medicine*, 19, 967-970.
- Al-Naggar, R. A., & Chen, R. (2012). Practice and barriers towards cervical cancer screening among university staff at a Malaysian university. *Journal of Community Medicine & Health Education*, 2(1), 120.
- Amankwah, E., Ngwakongnwi, E., & Quan, H. (2009). Why many visible women in Canada do not participate in cervical cancer screening. *Ethnicity and Health*, 14(4), 337-349.
- Ahmed, S. A., Sabitu, K., Idris, S. H., & Ahmed, R. (2013). Knowledge, attitude and practice of cervical cancer screening among market women in Zaria, Nigeria. *Nigerian medical journal: journal of the Nigeria Medical Association*, 54(5), 316.
- American Cancer Society. (2012). American Cancer Society Guidelines for the Early Detection of Cancer. Retrieved on 2015- 2016 from <http://www.cancer.org/Healthy/FindCancerEarly/CancerScreeningGuidelines/american-cancer-society-guidelines-for-the-early-detection-of-cancer>

- American College of Obstetricians and Gynecologist (2009). ACOG Issues Revised Cervical Cancer Screening Guidelines, Retrieved 2015-2016 from http://www.medscape.com/viewarticle/712840#vp_2
- American academy of family physicians. (2012). Cervical cancer: screening. Retrieved 2015-2016 from <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/cervical-cancer-screening#clinical>.
- Andersen, R. M. (1995). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior*, 36, 1-10.
- Aniebue, P.N., & Aniebue, U.U. (2010). Awareness and practice of cervical cancer screening among female undergraduates students in a Nigerian University. *Journal of Cancer Education*, 25, 106-108.
- Anorlu, R. (2008). Cervical cancer: the sub-Saharan African perspective. *Reproductive Health Matters*, 16(32), 41-49. doi: 10.1016/S0968-8080(08)32415-X
- Anna Nkapsah, Nji. (2016) Perceptions of Cameroonian Women Regarding Cervical Cancer Prevention. Diss. Walden University.
- Arelis Moore De Peralta, Holaday, B., & McDonell, J. R. (2015). Factors affecting Hispanic women's participation in screening for cervical cancer. *Journal of immigrant and minority health*, 17(3), 684-695.
- Hogan, V., Amamoo, M., Anderson, A., Webb, D., Mathews, L., Rowley, D., & Culhane, J. (2012). Barriers to women's participation in inter-conceptional care: a cross sectional analysis. *BMC Public Health*, 1293.
- Baker, R. S., Bazargan, M., Bazargan-Hejazi, S., & Calderôn, J. L. (2005). Access to vision Care in an Urban Low-Income Multiethnic Population. *Ophthalmic Epidemiology*, 12(1), 112.
- Baskaran, P., Subramanian, P., Rahman, R. A., Ping, W. L., Taib, N. A. M., & Rosli, R. (2013). Perceived susceptibility, and cervical cancer screening benefits and barriers in Malaysian women visiting outpatient clinics. *Asian Pacific Journal of Cancer Prevention*, 14(12), 7693-7699.
- Bartley, M., Martikainen, P. & Lahelma, E. (2002). Psychosocial determinants of health in social epidemiology.
- Becker-Dreps, S., Otieno, W. A., Brewer, N. T., Agot, K., & Smith, J. S. (2010). HPV vaccine acceptability among Kenyan women. *Vaccine*, 28, 4864-4867.
- Beiki, O., Allebeck, P., N., Nordqvist, T., & Moradi, T. (2009). Cervical, endometrial and ovarian cancers among immigrants in Sweden: Importance of age at migration and duration of residence. *European Journal of Cancer*, 45(1), 107-118.

- Bener A, Denic S, Alwash R (2001). Screening for cervical cancer among Arab women (brief communication). *Int J Gynecol Obstet*, 74, 305-7
- Berry, J. W., Phinney, J. S., Sam, D. L., & Vedder, P. (2006). Immigrant youth in cultural transition: Acculturation, identity and adaptation across national contexts. Mahwah, NJ: Erlbaum.
- Berry, J. W. (1980). Acculturation as varieties of adaptation. In A. M. Padilla (Ed.), *Acculturation: Theory, models and some new findings* (pp. 9 –25). Boulder, CO: Westview
- Bigby, J., Ko, L. K., Johnson, N., David, M. M. A., Ferrer, B. (2003). A community approach to addressing excess breast and cervical cancer mortality among women of African descent in Boston. *Public Health Reports*, 118(4), 338-347. PMID: PMC 1497561.
- Bessler, P., Aung, M., & Jolly, P. (2007). Factors affecting uptake of cervical cancer screening among clinic attendees in Trelawny, Jamaica. *Cancer Control*, 14(4), 396.
- Bingham, A., Bishop, A., Coffey, P., Winkler, J., Bradley, J., Dzuba, I., & Agurto, I. (2003). Factors affecting utilization of cervical cancer prevention services in low-resource settings. *Salud publica de Mexico*, 45, 408-416.
- Blackwell, D.L., Martinez, M. E., Gentleman, J. F. (2008). Women's compliance with public health guidelines for mammograms and Pap tests in Canada and the United States. *Women's Health Issues*, 18, 85-99.
- Bowman, J. A., Sanson-Fisher, R., & Redman, S. (1997). The accuracy of self-reported Pap smear utilization. *Social Science and Medicine*, 44(7), 969-976.
- Bradley, J., Coffey, P., Arrossi, S., Agurto, I., Bingham, A., Ilana, D....White, S.C. (2006). Women's perspectives on cervical screening and treatment in developing countries: experiences with new technologies and service delivery strategies. *Women and Health*, 43(3), 103-121.
- Braveman, P., Egerter, S., & Williams, D. R. (2011). The social determinants of health: coming of age. *Annual review of public health*, 32, 381-398.
- Cancer Council Victoria. (2015). What is cervical cancer? Retrieved 2015-2016 from http://www.cancervic.org.au/about-cancer/cancer_types/cervical_cancer.
- Caplan, L.S., McQueen, D. V., Qualters, J. R., Leff, M., Garrett, C., & Calonge, N. (2003). Validation of self-reports of cancer screening test utilization in a managed care population. *Cancer Epidemiology Biomarkers Prevention* 12; 1182
- Centers for Disease Control and Prevention. (2009). U.S Cancer Statistics: An Interactive atlas. Retrieved on December 2015 from http://apps.nccd.cdc.gov/DCPC_INCA/DCPC_INCA.aspx

- Centers for Disease Control and Prevention. (2012). Cervical cancer. Retrieved on Dec 2015 from <http://www.cdc.gov/cancer/cervical/>
- Centers for Disease Control and Prevention. (2012). What is HPV? Retrieved on Dec 2015 from <http://www.cdc.gov/hpv/WhatIsHPV.html>
- Chee HL, Rashidah S, Shamsuddin K, Intan O. (2003). Factors related to the practice of breast self-examination (BSE) and Pap smear screening among Malaysian women workers in selected electronics factories. *BMC Women's Health*; 3:3
- Cerigo Helen. (2013). Factors associated with cervical cancer screening uptake among Inuit women in Nunavut, Quebec Canada; 16(4), 4476-4479.
- Chaw Su, Nandar, & Laosee, O. (2015). Determinants of cervical cancer screening among migrants in northern district of Yangon, Myanmar. *Journal of Public Health and Development* | *วารสาร สาธารณสุข และ การ พัฒนา*, 13(2), 3-17.
- Cho, J., Guallar, E., Hsu, Y., Shin, D., & Lee, W. (2010). A comparison of cancer screening practices in cancer survivors and in the general population: the Korean national health and nutrition examination survey (KNHANES) 2001-2007. *Cancer Causes & Control: CCC*, 21(12), 2203-2212.
- Chu, K. C., Miller, B., & Springfield, S. A. (2007). Measures of racial/ethnic health disparities in cancer mortality rates and the influence of socioeconomic status. *Journal of the National Medical Association*, 99(10), 1092-1100.
- Coker, A. L., DeSimone, C. P., Eggleston, K. S., White, A. L., & Williams, M. (2009). Ethnic Disparities in Cervical Cancer Survival Among Texas Women. *Journal of Women's Health* (15409996), 18(10), 1577-1583.
- Coker, A. L., Hopehayn, C., DeSimone, C. P., Bush, H. M., & Crofford, L. (2009). Violence against women raises risk of cervical cancer. *Journal of Women's health*, 18(8), 1179-1185.
- Corbie-Smith, G., Flagg, E. W., Doyle, J. P., & O'Brien, M. A. (2002). Influence of usual source of care on differences by race/ethnicity in the receipt of preventive services. *Journal of General Internal Medicine*, 17, 458-464.
- Cowburn, S., Carlson, M. J., Lapidus, J. A., & DeVoe, J. E. (2013). Peer Reviewed: The Association Between Insurance Status and Cervical Cancer Screening in Community Health Centers: Exploring the Potential of Electronic Health Records for Population-Level Surveillance, 2008–2010. *Preventing chronic disease*, 10.
- Creswell, J. W. (2009). Research design: Qualitative, quantitative, and mixed methods approaches. (3rd Ed.). Thousand Oaks, CA: SAGE.
- Davern, M., Blewett, L. A., Lee, B., Boudreaux, M., & King, M. L. (2012). Use of the integrated health interview series: trends in medical provider utilization (1972-2008). *Epidemiologic Perspectives & Innovations*, 9(2).

- Davidson, D. J., & Freudenburg, W. R. (1996). Gender and environmental risk concerns: A review and analysis of available research. *Environment and behavior*, 28(3), 302-339.
- Day, G., Lanier, A., Bulkow, L., Kelly, J., & Murphy, N. (2010). Cancers of the breast, uterus, ovary and cervix among Alaska Native women, 1974-2003. *International Journal Of Circumpolar Health*, 69(1), 72-86.
- Demay, M. (2007). Practical of Cytopathology. Chicago: American Society for Clinical Pathology Press.
- Demiris, G. (2006). Principles of survey development for telemedicine applications. *Journal of Telemedicine and Telecare*, 12, 111-115.
- Denny, L. (2008). Prevention of cervical cancer. *Reproductive Health Matters*, 16(32), 18-31.
- Denny-Smith, T., Bairan, A., & Page, M. C. (2006). A survey of female nursing students' knowledge, health beliefs, perceptions of risk, and risk behaviors regarding human papillomavirus and cervical cancer. *Journal of the American Academy of Nurse Practitioners*, 18(2), 62-69.
- Department of Homeland Security. (n.d). Fiscal year 1998 statistical yearbook. Retrieved 2015-2017 from <http://www.dhs.gov/fiscal-year-1998-statistical-yearbook-0>
- Department of Homeland Security. (n.d(b)). Yearbook of immigration statistics: 2003.retrieved 2015-2017 from <http://www.dhs.gov/yearbook-immigration-statistics-2003-0>
- Derosé, P. D., Escarce, J. J. & Lurie, N. (2007). Immigrants and health care: Sources of vulnerability. *Health Affairs*, 26(5), 1258-1268.
- DeWalt, D. A., Brouckson, K. A., Hawk, V., Brach, C., Hink, A., Rudd, R., & Callahan, L. (2011). Developing and testing the health literacy universal precautions toolkit. *Nursing outlook*, 59(2), 85-94.
- Downs, L. S., Smith, J. S., Scarinci, I., Flowers, L., & Groesbeck, P. (2008). The disparity of cervical cancer in diverse populations. *Gynecologic Oncology*, 109, S22-S30.
- Dubard, C. A., & Gizlice, Z. (2008). Language spoken and differences in health status, access to care, and receipt of preventive services among US Hispanics. *American Journal of Public Health*, 98(11), 2021-2028.
- Ekane, G. E. H., Obinchemti, T. E., Nguefack, C. T., Nkambfu, D. M., Tchounzou, R., Nsagha, D., & Oroch, G. E. (2015). Pap smear Screening, the Way Forward for Prevention of Cervical Cancer? A Community Based Study in the Buea Health District, Cameroon. *Open Journal of Obstetrics and Gynecology*, 5(04), 226.

- Echeverria, S. E., & Carrasquillo, O. (2006). The roles of citizenship status, acculturation, and health insurance in breast and cervical cancer screening among immigrant women. *Medical care*, 44(8), 788-792.
- Farland MD (2003). Cervical cancer and Pap smear screening in Botswana: knowledge and perception. *Intern Nurs Review*
- Fatone, A., & Jandorf, L. (2009). Predictors of Cervical Cancer Screening Among Urban African Americans and Latinas. *American Journal Of Health Behavior*, 33(4),416-424.
- Felix, H. C., Bronstein, J., Bursac, Z., Stewart, M. K., Foushee, H. R., & Klapow J. (2009). Family planning provider referral, facilitation behavior, and patient follow-up for abnormal Pap smears. *Public Health Reports*, 124,733-744.
- Ferlay, J., Shin, H., Forman, D., Mathers, C., & Parkin, D. M. (2010). Estimates of worldwide burden of cancer in 2008: GLOBACAN 2008. *International Journal of Cancer*, 127(12), 2893-2917.
- Fernandez, L. E. & Morales, A. (2007). Language and use of cancer screening services among border and non-border Hispanic Texas women. *Ethnicity and Health*, 12(3), 245-263.
- Flyan F (1998). Screening for cervical cancer: a review of women's attitudes, knowledge and behavior. *Br J Gen Pract*,
- Gad atuhumuza (2016). Factors affecting successful implementation of auditor general's recommendations in local governments in eastern uganda: a case study of soroti district. *A doctoral dissertation*
- Gamarra, C.J., Paz, E.P.A., & Griep, R. H. (2005). Social support and cervical and breast cancer screening in Argentinean women from a rural population. *Public Health Nursing*, 26(3)269-276.
- Gan DE, Danhluim. (2013). Cervical cancer screening and its predictors among rural women in Malaysia. *Singapore med j*; 54:163-8.
- Gelberg, L., Andersen, R. M., and Leake, B. D. (2000). The behavioral model for vulnerable populations: Application to medical care use and outcomes for homeless people. *Health Services Research*, 34(6), 1273-1302. PMID:PMC1089079.
- Gerend, M. A., & Shepherd, J. E. (2007). Using message framing to promote acceptance of the Human Papillomavirus vaccine. *Health Psychology*, 26(6), 745-752.
- Goel, S. M., Wee, C. C., McCarthy, E. P., Davis, R. B., Ngo-Metzger, Q., & Phillips, R.S. (2003). Racial and ethnic disparities in cancer screening: The importance of foreign birth as a barrier to care. *Journal of General Internal Medicine*, 18, 1028-1035.

- Goldie, S. J., O'shea, M., Campos, N. G., Diaz, M., Sweet, S., & Kim, S. Y. (2008). Health and economic outcomes of HPV 16, 18 vaccination in 72 GAVI-eligible countries. *Vaccine*, 26(32), 4080-4093.
- Guifoyle, S., Franco, R., & Gorin, S. S. (2007). Exploring older women's approaches to cervical cancer screening. *Health Care for Women International*, 28, 930-950..
- Han, H., Kim, J., Lee, J., Hedlin, H., Song, H., Song, Y., & Kim, M. (2011). Interventions that increase use of Pap tests among ethnic minority women: a meta-analysis. *Psycho-Oncology*, 20(4), 341-351.
- Handlogten, K. S., Molitor, R. J., Roeker, L. E., Narla, N. P., Bachman, M. J., Quayson, S., ... & Roberts, L. (2014). Cervical cancer screening in Ghana, west Africa: prevalence of abnormal cytology and challenges for expanding screening. *International Journal of Gynecological Pathology*, 33(2), 197-202.
- Healthy People 2020. Access to health services. Retrieved Dec 2015 from <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=1>
- Hoerster, K. D., Beddawi, S., Peddecord, K. M., & Ayala, G. X. (2010). Healthcare use among California farmworkers: predisposing and enabling factors. *Journal of Immigrant Minority Health*, 12, 506-512
- Howard, M., Lytwyn, A., Lohfeld, L., Redwood-Campbell, L., Fowler, N., & Karwalajtys, T. (2009). Barriers to acceptance of self-sampling for human papillomavirus across ethnolinguistic groups of women. *Canadian Journal of Public Health*, 100(4), 365-369.
- Howell, L. P., Gurusinghe, S., Tabnak, F., & Sciortino, S. (2009). Cervical cancer screening in medically underserved California Latina and non-Latina women: Effect of age and regularity of Pap testing. *Cancer Detection and Prevention*, 32, 372-379.
- HPV Information Center. (2014). Malaysia Human Papillomavirus and Related Cancers, Fact Sheet. Retrieved 2015- 2017 from http://www.hpvcentre.net/statistics/reports/MYS_FS.pdf
- Ibekwe, C. M., Hoque, M. E., & Ntuli-Ngcobo, B. (2011). Perceived barriers of cervical cancer screening among women attending Mahalapye district hospital, Botswana. *Archives of clinical microbiology*, 2(1).
- Ilouno, B. (2015). *Predictors of Cervical Cancer Screening among Hispanic Women in the United States* (Doctoral dissertation, Walden University).
- Isa fatma, Modibbo, F. I., Dareng, E., Bamisaye, P., Jedy-Agba, E., Adewole, A., Oyenehin, L., & Adebamowo, C. (2016). Qualitative study of barriers to cervical cancer screening among Nigerian women. *BMJ open*, 6(1), e008533.

- Jemal, A., Bray, F., Center, M. M., Ferlay, J., Ward, E., Forman, D. (2011). Global cancer statistics. *CA: A Cancer Journal for Clinicians*, 6(1), 69-90.
- Jemal, A., Center, M. M., DeSantis, C., & Ward, E. M. (2010). Global patterns of cancer incidence and mortality rates and trends. *Cancer Epidemiology Biomarkers and Prevention*, 19, 1893-1907.
- Jennings-Dozier, K., and Lawrence, D. (2000). Socioeconomic predictors of adherence to annual cervical cancer screening in minority women. *Cancer Nursing*, 23(5), 350-357.
- Jensen, S. E., Pereira, D. B., Whitehead, N., Buscher, I., McCalla, J., Andrasik, M., & Antoni, M. H. (2012). Cognitive-behavioral stress management and psychological well-being in HIV+ racial/ethnic minority women with human papillomavirus. *Health Psychology*.
- Ji, S. C., Chen, M., Sun, J., & Liang, W. (2010). Cultural views, English proficiency and regular cervical cancer screening among older Chinese American women. *Women's Health Issues*, 20, 272-278.
- Johnson, K. L., Carroll, J. F., Fulda, K. G., Cardarelli, K., & Cardarelli, R. (2010). Acculturation and self-reported health among Hispanics using a socio-behavioral model: the North Texas Health Heart Study. *BMC Public Health*, 10(53).
- Johnson, P. J., Blewett, L. A., Ruggles, S., Davern, M. E., & King, M. L. (2008). Four decades of population health data: The Integrated Interview Series as an epidemiology resource. *Epidemiology*, 19(6), 872-875.
- Juon, H., Seung-Lee, C., & Klassen, A. C. (2003). Predictors of regular Pap smears among Korean-American women. *Preventive Medicine*, 37, 585-592.
- Juon, H. S., Kim, M., Shankar, S., & Han, W. (2004). Predictors of adherence to screening mammography among Korean American women. *Preventive Medicine*, 39(3), 474-481.
- Juon HS, Seo YJ, Kim MT. Breast and cervical cancer screening among Korean American elderly women. *Eur J Oncol Nurs*. 2002;6(4):228-235
- Kagotho, N., & Jan, J. (2008). Predictors of prostate cancer screening among older immigrant men. *Journal of National Medical Association*, 100(10), 1168-1174.
- Kang, S. (2006). Measurement of acculturation, scale formats, and language competence: Their implications for adjustment. *Journal of Cross Cultural Psychology*, 37, 669 – 693. doi:10.1177/0022022106292077
- Kaplan, M. A., & Inganzo, M. M. (2011). The Social Implications of Health Care Reform: Reducing Access Barriers to Health Care Services for Uninsured Hispanic and Latino Americans in the United States. *Harvard Journal of Hispanic Policy*, 2383-92.

- Kissinger, L., Lorenzana, R., Mittl, B., Lasrado, M., Iwenofu, S., Olivo, V., & Williams, A. H. (2010). Development of a Computer-Assisted Personal Interview Software System for Collection of Tribal Fish Consumption Data. *Risk Analysis: An International Journal*, 30(12), 1833-1841.
- Kleinman, J. C., & Kopstein, A. N. D. R. E. A. (1981). Who is being screened for cervical cancer? *American Journal of Public Health*, 71(1), 73-76.
- Klug, S. J., Hetzer, M., & Blettner, M. (2005). Screening for breast and cervical cancer in a large German city: participation, motivation and knowledge of risk factors. *The European Journal of Public Health*, 15(1), 70-77.
- Lara, M., Gamboa, C., Kahramanian, M. I., Morales, L. S., & Hayes Bautista, D. E. (2005). Acculturation and Latino health in the United States: a review of the literature and its sociopolitical context. *Annu. Rev. Public Health*, 26, 367-397.
- Lee, E. E., Fogg, L., & Menon, U. (2008). Knowledge and beliefs related to cervical cancer and screening among Korean American women. *Western Journal of Nursing Research*, 30(8), 960-974.
- Lee, H. Y., & Vang, S. (2010). Barriers to cancer screening in Hmong Americans: The influence of health care accessibility, culture, and cancer literacy. *Journal of Community Health*, 35, 302-314.
- Lee, S., Nguyen, H., & Tsui, J. (2011). Interview Language: A Proxy Measure for Acculturation Among Asian Americans in a Population-Based Survey. *Journal of Immigrant & Minority Health*, 13(2), 244-252.
- Lee, Y. H., Ju, E., Vang, P. D., & Lundquist, M. (2010). Breast and cervical cancer screening among Asian American women and Latinas: Does race/ethnicity matter? *Journal of Women's Health*, 19(10), 1877-1884.
- Leman, R. F., Espey, D., and Cobb, N. (2005). Invasive cervical cancer among American Indian Women in the Northern Plains, 1994-1998: incidence, mortality, and missed opportunities. *Public Health Rep.* 120(3), 283-287.
- Lofters A. K., Hwang, S. W., Moineddin, R., & Glazier, R. H. (2010). Cervical cancer screening among urban immigrants by region of origin: A population-based cohort study. *Preventive Medicine*, 51, 509-516.
- Lyimo Fs, Beran TN. (2014). Demographic, knowledge, attitudes, and accessibility factors associated with uptake of Cervical cancer screening among women in a rural district of Tanzania: Three public policy implications. *BMC public health*; 12:22.
- Malaysian National Cancer Registry report 2007- 2011. Retieved 2015 from <https://kpkesehatan.com/2016/12/07/the-malaysian-national-cancer-registry-report-mnrc-2007-2011/>
- Maaita M, Brakat M (2002). Jordanian women's attitudes towards cervical cancer screening and cervical cancer. *J Obstet Gynecol*, 22, 421-2.

- Maree, J. E., & Wright, S. C. D. (2011). Cervical cancer: Does our message promote screening? A pilot study in a South African context. *European Journal of Oncology Nursing*, 15, 118-123.
- Marin, G., & Posner, S. F. (1995). The role of gender and acculturation on determining the consumption of alcoholic beverages among Mexican-Americans and Central Americans in the United States. *International Journal of the Addictions*, 30(7), 779-794.
- Mar', G., Posner, S. F., & Kinyon, J. B. (1993). Alcohol expectancies among Hispanics and non-Hispanic whites: Role of drinking status and acculturation. *Hispanic Journal of Behavioral Sciences*, 15(3), 373-381.
- Martin-Hirsch, P., Lilford, R., Jarvis, G., & Kitchener, H. C. (1999). Efficacy of cervical-smear collection devices: a systematic review and meta-analysis. *The Lancet*, 354(9192), 1763-1770.
- McCarthy, A., Dumanovsky, T., Visvanathan, K., Kahn, A. R., & Schymura, M. J. (2010). Racial/ethnic and socioeconomic disparities in mortality among women diagnosed with cervical cancer in New York City, 1995-2006. *Cancer Causes & Control*, (10), 1645.
- McDonald, J. T., & Kennedy, S. (2007). Cervical cancer screening by immigrant and minority women in Canada. *Journal of Immigrant Minority Health*, 9, 323-324.
- McDonald, J., & Neily, J. (n.d). Race, Immigrant Status, and Cancer among Women in the United States. *Journal of Immigrant and Minority Health*, 13(1), 27-35.
- McLay, L. A., Foufoulides, C., & Merrick, J. W. (2010). Using simulation-optimization to construct screening strategies for cervical cancer. *Health Care Management Science*, 13(4), 294-318.
- Minnesota Population Center and State Health Access Data Assistance Center, Integrated Health Interview Series: Version 5.0. Minneapolis: University of Minnesota, 2012. Retrieved 2015-2017 from <http://www.ihis.us>
- Ministry Of Health Malaysia (2003). Clinical Practice Guidelines on Management of Cervical Cancer April 2003. P/ PAK/ 60.03 (GU
- Munoz, N., Castellsagne, X., Gonzalex, A. B., & Gissman, L. (2006). HPV in the etiology of human cancer. *Vaccine*, 24(S3), S/1-S/310.
- Munro, B. (2005). *Statistical methods for health care research*. (5th Ed.). New York, NY: Lippincott Williams & Wilkins.
- Mupepi, S. C., Sampselle, C. M., & Johnson, T. R. (2011). Knowledge, attitudes, and demographic factors influencing cervical cancer screening behavior of Zimbabwean women. *Journal of Women's Health*, 20(6), 943-952.

- Najad Abdullahi (15 August 2013). "African migrants aspire to a better life in Asia". Deutsche Welle. Retrieved 20 March 2016 from https://en.wikipedia.org/wiki/Africans_in_Malaysia
- National Cancer Institute. (2008). Cancer of the Cervix: What you need to know. Retrieved 2015-2016 from <http://www.cancer.gov/cancertopics/wyntk/cervix/page3>
- National Cancer Institute. (2008). What you need to know about cervical cancer. *NIH Publication No. 08-2407*.
- National Cancer Institute. (2011). cervical cancer: Incidence and mortality rates. Retrieved 2015-2016 from <http://www.cancer.gov/aboutnci/servingpeople/snapshots/cervical.pdf>.
- National Cancer Institute. (n.d) . Pap tests and cervical health: a healthy habit for you. Retrieved 2015-2017 from <http://www.cancer.gov/cancertopics/screening/pap-tests-cervicalhealth>
- National Cancer Institute. (n.d). Cancer advances in focus: Cervical cancer. Retrieved 2015-2016 from <http://www.cancer.gov/cancertopics/factsheet/cancer-advances-infocus/cervical>
- National Center for Health Statistics. (2011). Data File Documentation, National Health Interview Survey, 2010 (machine readable file and documentation).
- National Center for Health Statistics (2012). About the National health interview survey. Retrieved 2015-2016 from http://www.cdc.gov/nchs/nhis/about_nhis.htm
- National Health and Morbidity Survey (NHMS III) 2006, Volume 2. Institute for Public Health (IPH).
- Ncube, B., Bey, A., Knight, J., Bessler, P., & Jolly, P. E. (2015). Factors associated with the uptake of cervical cancer screening among women in Portland, Jamaica. *North American journal of medical sciences*, 7(3), 104.
- Ndejjo, R., Mukama, T., Musabyimana, A., & Musoke, D. (2016). Uptake of cervical cancer screening and associated factors among women in Rural Uganda: a cross sectional study. *PloS one*, 11(2), e0149696.
- Nelson, W., Moser, R. P., Gaffey, A., & Waldron, W. (2009). Adherence to Cervical Cancer Screening Guidelines for U.S. Women Aged 25–64: Data from the 2005 Health Information National Trends Survey (HINTS). *Journal of Women's Health* (15409996), 18(11), 1759-1768.
- Nene B, Jayant K, Arrossi S, Shastri S, Budukh A, et al. (2007) Determinants of women's participation in cervical cancer screening trial, Maharashtra, India. *Bulletin of the World Health Organization* 85: 264-272

- Nigel Edgar (25 March 2012). "African students appeal for understanding that not all of them are bad". The Star. https://en.wikipedia.org/wiki/Africans_in_Malaysia Retrieved 20 March 2016
- Nnodu, O., Erinosho, L., Jamda, M., Olaniyi, O., Adelaiye, R., Lawson, L.,...Zamani, A. (2010). Knowledge and attitudes towards cervical cancer and Human Papillomavirus: a Nigerian pilot study. *African Journal of Reproductive Health*,14(1), 95-108.
- Ogunbowale, T. & Lawoyin, T. O. (2008). Cervical cancer risk factors and predictors of cervical dysplasia among women in south-west Nigeria. *Australian Journal of Rural Health*, 16, 338-342.
- Ooi Keat Gin. (2009). Historical dictionary of Malaysia. Retrieved 2015-2017 from https://books.google.com.my/books/about/Historical_Dictionary_of_Malaysia.html?id=assDznc7EN4C&redir_esc=y
- Owosu, G. A., Eve, S. B., Cready, C. M., Koelin, K., Trevino, F., Urrutia-Rojas, X., & Baumer, J. (2005). Race and ethnic disparities in cervical cancer screening in a safety-net system. *Maternal and Child Health*, 9(3), 285-295.
- Paskett, E. D., Tatum, C. M., Mack, D. W., Hoen, H., Case, D., L., & Velez, R. (1996). Validation of self-reported breast and cervical cancer screening tests among low income minority women. *Cancer Epidemiology Biomarkers Prevention*, 5, 721-726.
- Pew research center survey. (2015-2016). Christianity world's largest religious group. Retrieved 2015 from <http://www.pewresearch.org/fact-tank/2017/04/05/christians-remain-worlds-largest-religious-group/>
- Prince, A. E. (2015). Prevention for those who can pay: insurance reimbursement of genetic based preventive interventions in the liminal state between health and disease. *Journal of Law and the Biosciences*, 2(2), 365-395. Ponce, N. A., Chawla, N., Babey, S. H., Gatchell, M. S., Etzioni, D. A. , Spencer, B. A., Brown, E. R., & Breen, N. (2006). Is there a language divide in Pap test use? *Medical Care*, 44(11), 998-1004.
- Pourat, N., Kagawa-Singer, M., Breen, N., & Sripipatana, A. (2010). Access versus acculturation: identifying modifiable factors to promote cancer screening among Asian American women. *Medical care*, 1088-1096.
- Rauscher, G. H., Johnson, T. P., Cho, Y. I., Walk, J. A. (2008). Accuracy of self-reported cancer-screening histories: A Meta-analysis. *Cancer Epidemiology Biomarkers Prevention* 17:748-757.
- Ross. J. S., Nunez-Smith, M., Forsyth, B. A., & Rosenbaum, J. R. (2008). Racial and ethnic differences in personal cervical cancer screening amongs post-graduate physicians: resuts from a cross-sectional survey. *BMC Public Health*, 8, 378.
- Ronco, G., Giubilato, P., Naldoni, C., Zorzi, M., Anghinoni, E., Scalisi, A., ... & Gaimo, M. D. (2009). Extension of organised cervical cancer screening

- programmes in Italy and their process indicators: 2007 activity. *Epidemiologia e prevenzione*, 33(3 supplement 2), 41-56.
- Nayar, R., & Wilbur, D. C. (2015). The pap test and bethesda 2014. *Acta cytologica*, 59(2), 121-132.
- Sanz-Barbero, S., Regidor, E., & Galindo, S. (2011). Impact of geographical origin on gynecological cancer screening in Spain. *Rev Saude Publica*, 45(6), 19-26. PMID:22124736
- Saslow, D, Boetes, C, & Burke, W 2008, „American Cancer Society; guidelines for early detection of cancer. *Cancer Journal for Clinicians*, vol. 18, no. 7, pp. 58-72
- Schleicher, E. (2007). Immigrant women and cervical cancer prevention in the United States. *Baltimore, MD: Women's and Children's Health Policy Center, Johns Hopkins Bloomberg School of Public Health.*
- Schwartz, S. J., Benet-Martínez, V., Knight, G. P., Unger, J. B., Zamboanga, B. L., Des Rosiers, S. E., ... & Szapocznik, J. (2014). Effects of language of assessment on the measurement of acculturation: Measurement equivalence and cultural frame switching. *Psychological assessment*, 26(1), 100.
- Shi, L. (2010). *Managing human resources in health care organizations*. Jones & Bartlett Publishers.
- Siahpush, M., & Singh, G. K. (2002). Sociodemographic predictors of pap test receipt, currency and knowledge among Australian women. *Preventive medicine*, 35(4), 362-368.
- Siegel, R., Ward, E., Brawley, O., & Jemal, A. (2011). Cancer statistics, 2001: The impact of socioeconomic and racial disparities on premature cancer rates. *CA: A Cancer Journal for Clinicians*, 4(61), 212-235.
- Singleton, B. A., & Straits, B. C. (2005). *Approaches to social research*. (4th Ed.). New York, NY: *Oxford University Press*.
- Small, La F. F. (2010). Use of mental health services among people with co-occurring disorders and other mental health co-morbidities: employing the Behavioral Model for Vulnerable Population. *Mental Health and Substance Use: Dual Diagnosis*, 3(2), 81-93.
- Smith, A. K., Ayanian, J. Z., Covinsky, K. E., Landon, B. E., McCarthy, E. P., Wee, C. C., Steinman, M. A. (2010). Conducting a high-value secondary dataset analysis: An introductory guide and resources. *Journal of Internal Medicine*, 26(8), 920-929.
- Smith, R.A, Cokkinides V, & Brawley O. W (2008). Cancer screening in the United States, 2008: A review of current American Cancer Society guidelines and cancer screening issues. *CA: A Cancer Journal for Clinicians*. (58), 161-179.

- Stein, J. A., Andersen, R. M., Robertson, M., & Gelberg, L. (2012). Impact of Hepatitis B and C infection on health services utilization in homeless adults: A test of Gelberg-Andersen behavioral model for vulnerable populations. *Health Psychology, 31*(1), 20-30.
- Subramanian, S., Trogdon, J., Ekwueme, D. U., Gardner, G. J., Whitmire, J. T., & Rao, C. (2010). Cost of cervical cancer treatment: Implications for providing coverage to low-income women under the Medicaid Expansion for cancer care. *Women's Health Issues, 20*(6), 400-405.
- Sui, L., & Stevens, G. D. (2011). Vulnerable populations in the United States. United States of America: *Jossey-Bass*.
- Suresh, K. P., & Chandrashekara, S. (2012). Sample size estimation and power analysis for clinical research studies. *Journal of Human Reproductive Sciences, 5*, 7-13.
- Tabachnick, B.G., & Fidell, L.S. (2007). Using Multivariate Statistics, Fifth Edition. Boston: *Pearson Education, Inc.*
- Tabnak, F., Müller, H., Wang, J., Zhang, W., & Howell, L. (2010). Timeliness and follow-up patterns of cervical cancer detection in a cohort of medically underserved California women. *Cancer Causes & Control: CCC, 21*(3), 411-420.
- Tung, W., Lu, M., & Cook, D. (2010). Cervical cancer screening among Taiwanese women: a transtheoretical approach. *Oncology Nursing Forum, 37*, 4.
- Turniel-Berhalter, L. M., Finney, M. F., & Jaén, C. R. (2004). Self-report and primary care medical record documentation of mammography and Pap smear utilization among low-income women. *Journal of the National Medical Association, 96*(12), 1632-1639. PMID: PMC2568692
- Tsui, J., Saraiya, M., Thompson, T., Dey, A., & Richardson, L. (2007). Cervical cancer screening among foreign-born women by birthplace and duration in the United States. *Journal of Women's Health, 16*(10), 1447-1457.
- Tung, W.-C, Nguyen, D.H.T., Tran, D. N. (2008). Applying the transtheoretical model to cervical cancer screening in Vietnamese-American women. *International Nursing Review, 55*, 73-80.
- Thurston, W. E., & Vissandjée, B. (2005). An ecological model for understanding culture as a determinant of women's health. *Critical Public Health, 15*(3), 229-242.
- Van Til, L., MacQuarrie, C., & Herbert, R. (2003). Understanding the barriers to cervical cancer screening among older women. *Qualitative Health Research, 13*(8), 1116-1131.

- U.S. Cancer Statistics Working Group. (2013). United States Cancer Statistics: 1999–2009 Incidence and Mortality Web-based Report. Retrieved 2015-2017 from: www.cdc.gov/uscs
- United States Census Bureau (2010). Place of birth of the foreign-born population: 2009. Retrieved on September 16, 2016 from <http://www.census.gov/prod/2010pubs/acsbr09-15.pdf>.
- United States Preventive Services Task Force. (2011). Screening for cervical cancer. Retrieved October 2015 from <http://www.uspreventiveservicestaskforce.org/uspstf/uspscerv.htm>
- Vernon, S. W., Tiro, J. A., Vojvodic, R. W., Coan, S., Diamond, P. M., Greisinger, A., & Fernandez, M. E. (2008). Reliability and validity of a questionnaire to measure colorectal cancer screening behaviors: Does mode of survey administration matter? *Cancer Epidemiology Biomarkers Prevention*, 17(4), 758-767.
- Wallace, P. M., Pomery, E. A., Latimer, A. E., Martinez, J. L., & Salovey, P. (2010). A review of acculturation measures and their utility in studies promoting Latino health. *Hispanic journal of behavioral sciences*, 32(1), 37-54.
- Waller, J., Jackowska, M., Marlow, L., & Wardle, J. (2012). Exploring age differences in reasons for nonattendance for cervical screening: a qualitative study. *BJOG: An International Journal of Obstetrics & Gynaecology*, 119(1), 26-32
- Waller, J., McCaffery, K., Kitchener, H., Nazroo, J., & Wardle, J. (2007). Women's experiences of repeated HPV testing in the context of cervical cancer screening: A qualitative study. *Psycho-Oncology*, 16, 196-204..
- Waller, J., McCaffery, K., Nazroo, J., & Wardle, J. (2005). Making sense of information about HPV in cervical cancer: a qualitative study. *British Journal of Cancer*, 92, 265-270.
- WHO/ICO Information Center. (2010). Human Papillomavirus and related cancers: Summary report update. (3rd ed.). Retrieved October 2015 from http://apps.who.int/hpvcentre/statistics/dynamic/ico/country_pdf/XWX.pdf?CFID=5632389&CFTOKEN=42806949
- Woltman, K. J., & Newbold, K. B. (2007). Immigrant women and cervical cancer screening uptake: a multilevel analysis. *Canadian Journal of Public Health*, 98(6), 470-475.
- Wong, C., Jim, M., King, J., Tom-Orme, L., Henderson, J., Saraiya, M., & ... Espey, D. (2011). Impact of hysterectomy and bilateral oophorectomy prevalence on rates of cervical, uterine, and ovarian cancer among American Indian and Alaska Native women, 1999-2004. *Cancer Causes & Control: CCC*, 22(12), 1681-1689.

- World Health Organization. (2011). Sexual and reproductive health: cancer of the cervix. Retrieved on December, 2015 from <http://www.who.int/reproductivehealth/topics/cancers/en/>
- World Health Organization. (2012). Sexual and reproductive health: Cancer of the cervix. Retrieved December 2015 from <http://www.who.int/reproductivehealth/topics/cancers/en/>
- Worthington, C., McLeish, K., & Fuller-Thomson, E. (2012). Adherence Over Time to Cervical Cancer Screening Guidelines: Insights From the Canadian National Population Health Survey. *Journal of Women's Health*, 21(2), 199-208
- Wright T. (2007). Cervical Cancer Screening in the 21st Century: Is it Time to Retire the Pap smear. *Clinical Obstetrics and Gynecology*, 50(2):313-23.
- Xu, Y., Ross, C., Ryan, R., & Wang, B. (2005). Cancer risk factors among Southeast Asian American Residents of the U.S. Central Gulf Coast. *Public Health Nursing*, 22(2), 119-129.



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