Maternal and Child Health Journal (2019) 23:1679–1685
https://doi.org/10.1007/s10995-019-02814-4

Understanding the Social Environmental Influences on Pregnancy and Planning for Pregnancy for Young Women in Harare, Zimbabwe

Chiwoneso B. Tinago[1] · Lucy Annang Ingram[2] · Edward A. Frongillo[2] · David Simmons[2] · Christine E. Blake[2] · Barbara Engelsmann[3]

Published online: 30 September 2019

Abstract

Objectives Social environmental influences on pregnancy-related practices and outcomes have been studied, yet few studies explore these influences qualitatively from the perspectives of women's personal social networks and the larger social networks that exist within their communities. This study sought to understand and describe the social environment related to pregnancy and planning for pregnancy in Harare, Zimbabwe from the perspectives of women's social networks, and its influence on pregnancy-related decisions and practices.

Methods Semi-structured, in-depth, qualitative interviews were conducted in both Shona and English with 24 key community stakeholders (6 healthcare workers, 6 school teachers, 6 family members of females aged 14–24 years, and 6 community leaders) who lived or worked in 2 low-income, high-density communities in Harare. Data were analyzed thematically using NVivo 10 software.

Results The social environment related to pregnancy and planning for pregnancy described by participants was deeply rooted in culture and cultural practices and centered on four themes: (1) pregnancy importance to the role of a woman in the community and the fulfillment of marriage, (2) pregnancy silence to prevent adverse pregnancy outcomes and adolescent and out of wedlock pregnancies, (3) patriarchal pregnancy culture, and (4) community support during pregnancy.

Conclusions for Practice Maternal health efforts in Zimbabwe should acknowledge cultural influences on pregnancy and address pregnancy silence to improve reproductive health communication, empower women to be partners in the pregnancy decision-making process, and include women's social networks.

Keywords Pregnancy and planning for pregnancy · Social environment · Qualitative research · Culture · Zimbabwe

Significance

"What is already known on this subject?"

Social environmental influences on pregnancy-related practices and outcomes affect health behavior and change conditions beyond individual control, yet few studies explore

✉ Chiwoneso B. Tinago
ctinago@wcupa.edu

Lucy Annang Ingram
lannang@mailbox.sc.edu

Edward A. Frongillo
efrongil@mailbox.sc.edu

David Simmons
dsimmons@mailbox.sc.edu

Christine E. Blake
ceblake@mailbox.sc.edu

Barbara Engelsmann
bengelsmann@ophid.co.zw

[1] Department of Health, West Chester University of Pennsylvania, 855 S. New Street, West Chester, PA 19383, USA

[2] Department of Health Promotion, Education, and Behavior, Arnold School of Public Health, University of South Carolina, 915 Greene Street, Columbia, SC 29208, USA

[3] The Organization for Public Health Interventions and Development Trust (OPHID), 20 Cork Road, Belgravia, Harare, Zimbabwe

these influences qualitatively from the perspectives of young women's social networks.

"What this study adds?"

The social environment related to pregnancy and planning for pregnancy is deeply rooted in culture, and centers on pregnancy importance, pregnancy silence, patriarchal pregnancy culture, and community support during pregnancy. Contradicting views emerge in beliefs that young girls should not become pregnant and practices to the contrary, and pregnancy silence and expected community involvement during pregnancy.

Introduction

Zimbabwe has a high maternal mortality ratio of 651 deaths per 100,000 live births with young women facing increased risk of maternal morbidity and mortality (Zimbabwe National Statistics Agency, ZIMSTAT 2016). The median age of childbearing in Zimbabwe is 20.3 years, and 22% of adolescent females aged 15–19 years have begun childbearing (ZIMSTAT 2016). Accounting for 80% of all maternal deaths, the leading causes of maternal mortality in Zimbabwe are HIV/AIDS, pregnancy induced hypertension/eclampsia, postpartum hemorrhage, puerperal sepsis, and malaria (Munjanja 2009). Maternal health is an integral part of Zimbabwe's national health strategy and current strategies to reducing maternal mortality focus on the pregnancy period with antenatal care and obstetric care. These strategies could benefit from an understanding of social environmental influences on maternal health before, during and after pregnancy because, although important, current strategies are not reaching many women with delayed or non-uptake of antenatal care, home deliveries, low adherence to micronutrient supplementation, and healthcare staff shortages (Tinago et al. 2016; City of Harare 2014; Darnton-Hill 2012; Gadaga et al. 2009; Munjanja 2009; ZIMSTAT 2016).

Social environmental influences on maternal health affect health behavior and change conditions beyond individual control and include social networks, cultures, laws or policies that promote or prohibit behaviors, and regularly viewed media messages (Cohen et al. 2000). The social environment can function as a stressor or a stress buffer or serve as an enabler of health behavior or as an impediment to healthy behavior (Stokols 1996). Several theoretical frameworks such as McLeroy et al. (1988) Socio-Ecological Model of Health and Frieden's (2010) Health Impact Pyramid outline an increase in population impact among health efforts that address environmental influences, with a focus on the interrelatedness of social elements in an environment.

Social environmental influences on pregnancy-related practices and outcomes have been studied with recommendations to include social networks in maternal health efforts, yet few studies explore these influences qualitatively from the perspectives of young women's personal social networks and the larger social networks that exist within their communities (Murira et al. 2003; Tinago et al. 2016; Collins et al. 1993; Perkins et al. 2015). Valente (2010) defines social networks as "connections among people, organizations, political entities, (states or nations), and/or other units" (p. 3). These social networks are influential and serve as resources and sources of social support that could potentially contribute to these pregnancy-related practices and outcomes in addition to providing insight on the broader social environmental context (Collins et al. 1993; Perkins et al. 2015). The purpose of this study was to explore the social environment related to pregnancy and planning for pregnancy from the perspectives of key community stakeholders in Harare, Zimbabwe and its influence on pregnancy-related decisions and practices.

Methods

Study Setting

Zimbabwe is located in southern Africa and has a population of 12,973,808 (48.1% males, 51.9% females) (ZIMSTAT 2013). The study was conducted in two low-income, high-density communities in the capital city Harare. Although English is the official language of Zimbabwe, Shona is the main local language among Harare residents.

Design

A qualitative descriptive research design was used to address the following research questions: (1) What is the social environment related to pregnancy and planning for pregnancy from the perspectives of key community stakeholders in Harare? and (2) How does the social environment influence pregnancy-related decisions and practices? (Kim et al. 2017). The reporting of qualitative research follows the Consolidated Criteria for Reporting Qualitative Research (COREQ; Tong et al. 2007). Semi-structured in-depth interviews were conducted in English and Shona by the principal investigator and a research assistant trained in qualitative research data collection and analysis who were fluent in English and Shona. The study sample included a purposive sample of 24 key community stakeholders that included 3 healthcare workers, 3 school teachers, 3 family members of females aged 14–24 years, and 3 community leaders (e.g. elders, religious leaders) from each study community. Thematic saturation was expected at this sample size based on previous qualitative studies conducted among similar populations (Tinago et al. 2016, 2018).

Procedure

The research team developed a participant consent form, socio-demographic survey, and semi-structured interview guide in English and professionally translated these documents into Shona. In developing the interview guide, the first author reviewed existing literature where similar qualitative methods were used to assess perspectives on pregnancy across varying populations. Interview questions were open-ended and guided by the Social Ecological Model of Health to explore interactions between individual, interpersonal, institutional, community, and policy pregnancy factors (Roulston 2010). Research team members then reviewed and revised the interview questions. Examples of interview questions included:

(1) What, in your opinion, is a healthy pregnancy?
(2) Whose responsibility is it to ensure a healthy pregnancy?
(3) How important is pregnancy to a woman's role in your community?
(4) What does your community think about pregnancy planning?

Interview questions were pre-tested before data collection with a small sample (two interviews) of individuals who met the eligibility criteria, but did not live in the study communities.

The research utilized purposive sampling since the target group had characteristics which would best enable us to answer the research questions, and recruitment was conducted at various locations within the study communities (such as churches, clinics, and schools) via fliers, snowball, and in-person recruitment. All interviews were conducted in an office at the local clinic in each study community. Prior to participating, participants were screened for eligibility and provided verbal and written informed consent. Interviews were on average 45 min in length and were conducted between June and August 2015. All participants received a US$5 incentive and interviews were audio-recorded, professionally transcribed verbatim, and then translated.

Ethical Approval Mechanism

Prior to conducting study activities, approvals were sought and received from the Medical Research Council of Zimbabwe, City of Harare Ethics Committee, and the University of South Carolina Institutional Review Board. This manuscript is not based upon clinical study or patient data.

Data Analysis

NVivo 10 software was utilized to inductively and thematically analyze the transcribed and translated texts and determine preliminary emergent codes and themes (Saldaña 2013). The coding process began with the principal investigator coding eight interviews for emergent themes, and the research assistant independently hand-coded the same eight transcripts. An initial code book was developed after reviewing coding from both the principal investigator and the research assistant. After another research team member reviewed the preliminary codebook and coded transcripts, the preliminary codebook was used to open code the remainder of the transcripts. The codebook was revised based on the additional coding until saturation was reached. Socio-demographic data were analyzed using univariate analyses with SAS 9.3.

Interviewer and data analyst triangulation was used to prevent threats to validity inherent in using a single interviewer and data analyst (Maxwell 2004).

Results

Study results are provided based on sample characteristics and emergent social environment themes related to pregnancy and planning for pregnancy. Participant quotes are identified by participant type (i.e., teacher), gender, and age.

Sample Characteristics

Participants (n = 24) had a mean age of 41 years (range 26–53 years), all were Black, most were females (75.0%), and of Shona ethnicity (91.6%). Half reported being in married–monogamous relationships, and most had a high school education between Form 1 and 6 (equivalent to grades 8–13) (25.0%), were Christian Protestant (37.5%), and were formally employed (75.0%) (Table 1).

The Social Environment Related to Pregnancy and Planning for Pregnancy

The social environment related to pregnancy and planning for pregnancy described by participants was deeply rooted in culture and cultural practices and centered on four themes: (1) pregnancy importance to the role of a woman in the community and the fulfillment of marriage, (2) pregnancy

Table 1 Socio-demographic characteristics of study participants (n = 24)

Characteristic	n (%)
Age	
Mean age (years)	41
Age range (years)	26–53
Median age (years)	44
Gender	
Female	18 (75.0)
Male	6 (25.0)
Race	
Black	24 (100.0)
Ethnicity	
Shona	22 (91.6)
Other	2 (8.4)
Marital status	
Divorced or separated	4 (16.7)
Married–monogamous	12 (50.0)
Never married	4 (16.7)
Widowed	4 (16.7)
Education level	
Primary (grade 1–7)	1 (4.2)
High school (Form 1–6)	7 (29.2)
Certification/diploma	5 (20.8)
Some college or university	5 (20.8)
Bachelor's	5 (20.8)
Graduate degree	1 (4.2)
Religious affiliation	
Apostolic	1 (4.2)
Catholic	5 (20.8)
Muslim	1 (4.2)
Protestant	9 (37.5)
Pentecostal	8 (33.3)
Main source of income	
Formally employed	18 (75.0)
None	6 (25.0)
Roles[a]	
Teacher	6 (25.0)
Community leader	6 (25.0)
Healthcare worker	6 (25.0)
Family member	6 (25.0)

[a]High school teachers (n = 6), registered nurses/midwives (n = 4), community health worker (n = 1), primary counselor (n = 1), elected official (n = 1), religious leaders (n = 3), community advocates (n = 2), and family members (n = 6)

silence to prevent adverse pregnancy outcomes and adolescent and out of wedlock pregnancies, (3) patriarchal pregnancy culture, and (4) community support during pregnancy. The following is a description of these themes.

Pregnancy Importance to the Role of a Woman in the Community and the Fulfillment of Marriage

The importance of pregnancy was expressed in terms of the role of a woman in the community and the fulfillment of marriage. Participants spoke about pregnancy and more importantly, having a child or children, as strongly influencing the social status of a woman in the community. A healthcare worker described:

> Pregnancy is very important to a woman because through the pregnancy that's when she only becomes a parent and through the pregnancy that's when she can only be respected in society, because in our society if you don't bear children you lose respect". (Healthcare worker, female, 45 years)

Pregnancy was also seen as important in fulfilling the act of marriage and was a cultural expectation in the confines of marriage. A community leader explained, "People are expected to become pregnant as soon as they get married. That is what is expected from our culture" (Community leader, male, 50 years).

Participants also described how pregnancy was not culturally accepted outside of marriage, yet they also described the reality of early pregnancies and resulting early marriages with a teacher explaining, "Some get married too early because of their families. The thinking is at least to get money to assist parents; some are just troublesome" (Teacher, female, 51 years). This practice of getting money is called brides price or "lobola", which is the money or resources given to the bride's family from the groom. Participants also described how pregnancy outside of marriage often leads to early marriages because, if a young girl becomes pregnant, her family will often take her to the home of the one responsible for impregnating her for marriage. Participants outlined several negative social and health implications that resulted from early marriages and early pregnancies which included school expulsion, and increased abortions, miscarriages and sexually transmitted infections.

Participants also expressed that, although they thought it was important to plan for pregnancy, pregnancies in their communities were more likely to be unplanned. A teacher explained, "People don't plan for pregnancy these days. They just become pregnant. In most cases you hear that it was a mistake…in terms of family planning, people in the community are not talking about it and they are not valuing it" (Teacher, female, 30 years).

Pregnancy Silence to Prevent Adverse Pregnancy Outcomes and Adolescent and Out of Wedlock Pregnancies

Participants described the culturally-accepted silence around pregnancy. A community leader explained, "When someone is pregnant they should not tell others about the pregnancy or they will be bewitched. They just keep quiet and you just see the child after they are delivered" (Community leader, female, 47 years). A healthcare worker added concerning community beliefs about pregnancy, "They believe that one can abort due to witchcraft and they think that if one is pregnant and is going to deliver, they should not tell people because they may have a still birth" (Healthcare worker, female, 45 years). As such, pregnant women were supposed to keep silent about their pregnancy for fear of being bewitched or experiencing negative pregnancy outcomes.

Participants also described varying periods of pregnancy silence ranging from the first 3 months to the duration of pregnancy. A family member described, "Some say that when you become pregnant, you should not tell anyone about it…until it starts showing" (Family member, female, 40 years) while a teacher added, "You should keep quiet especially when the delivery time is approaching…otherwise the delivery can be stopped and you may not deliver the child" (Teacher, female, 51 years).

This culture of silence concerning pregnancy also emerged in participants' descriptions of pregnancy communication with young women. Central to their descriptions were how one should not talk to young women about pregnancy or planning for pregnancy because it will influence them to want to experiment and become pregnant. A healthcare worker stated, "Many of them think it's a taboo to talk about pregnancy to children" (Healthcare worker, male, 31 years) while another elaborated:

> If we consider our age of consent…at 18 years, we can start teaching them at that age because if we start teaching them at an early age, if they keep hearing about family planning, they will develop an interest to know what it is…If we start teaching children at 13 years old, they will become curious and…then they start experimenting. (Teacher, female, 45 years)

Patriarchal Pregnancy Culture

Participants described how the patriarchal culture of Zimbabwe plays a central role in pregnancy decision making, particularly with pregnancy planning. When asked if it was possible to plan for pregnancy a teacher responded, "That is challenging because if she is married a woman cannot. In our culture, the husband…is the one who can decide to have a child or not to" (Teacher, female, 42 years). In terms of who was responsible for making decisions about planning a pregnancy, a healthcare worker explained, "Considering the culture, they usually think that it is the responsibility of the man" (Healthcare worker, female, 36 years). Most study participants stated that both the partner and the woman should be responsible for making pregnancy decisions with a family member stating, "The value that the community should place on a woman should be at par with the males… She should be treated the same as her husband" (Family member, male, 27 years). Some participants acknowledged that this equal pregnancy decision making did not take place.

In addition to the strong patriarchal culture around pregnancy decision making, participants also described how men were not as involved in pregnancy care. A healthcare worker explained, "The other challenge is male involvement because these young women whether married or single…will need that support. Men are a problem in terms of assisting and giving whatever necessary support on whatever program" (Healthcare worker, female, 50 years). Pregnancy care programs described by participants that lacked male involvement or support included antenatal care and prevention of mother to child transmission of HIV.

Community Support During Pregnancy

Despite participant's descriptions of the silence surrounding pregnancy, they also described community involvement as integral to ensuring a healthy pregnancy. When describing whose responsibility it was to ensure a healthy pregnancy, a healthcare worker explained:

> This involves a lot of people. We start from the beginning with the pregnant person and her partner…or just herself if there is no partner. Then we include the family, they are supposed to make sure of the comfort of the pregnancy as they live with her…Then sometimes the church, to give that spiritual support is healthy if she believes…Next we go to the health institutions, including all the health personnel…Also friends play a big role. (Healthcare worker, female, 50 years)

Specific family members described who were integral in ensuring a healthy pregnancy included mothers, aunts (usually the sisters of women's fathers) who are referred to as "Tete", grandmothers and mothers-in-law.

The extra care provided to pregnant women by the community was further described by a family member who said, "When a woman is pregnant, she is treated with care…She is like a nation builder. She is there for continuity of our generations…We as a community, we are there to support her during pregnancy" (Family member, male, 27 years).

Discussion

This study explored the social environment related to pregnancy and planning for pregnancy from the perspectives of key community stakeholders in Harare, Zimbabwe and its influence on pregnancy-related decisions and practices. The social environment related to pregnancy and planning for pregnancy described by participants was deeply rooted in culture and cultural practices. Mazrui (1986) defines culture as "a system of interrelated values active enough to influence and condition perception, judgment, communication, and behavior in a given society" (as cited in Airhihenbuwa and Webster 2004, p. 5). Airhihenbuwa et al. (2013) propose that culture shapes the construction of personal understandings of health and illness and is normalized by influencing health perceptions and health seeking practices. Participants described the culture around pregnancy centering on pregnancy importance, pregnancy silence, patriarchal pregnancy culture, and community support during pregnancy. The importance of pregnancy in Zimbabwean culture has also been documented with pregnancy being positively viewed in the confines of marriage as a cultural symbol of maturity for both husband and wife (Murira et al. 2003).

Our study presents participants contradicting views in the belief that young girls should not become pregnant and practices to the contrary, and the silence around pregnancy and expected community involvement during pregnancy. Participants' beliefs that young girls should not become pregnant contrasts with national statistics that suggest practices to the contrary. The 2014 Zimbabwe Multiple Indicator Cluster Survey found that 1 in 3 women ages 20 to 49 surveyed reported that they married before age 18 with an estimated 4% marrying before age 15 which highlights the prevalence of early marriages in the country. At the time the study interviews were conducted, early marriages were permissible under Zimbabwe's Customary Marriages Act which set no minimum age for marriage, while the Marriage Act, which governs monogamous marriages, stated that girls under 16 cannot marry without the written consent of the justice minister (Human Rights Watch 2015). A few months following the interviews, the Zimbabwean constitutional court outlawed marriages to minors under the age of 18 years; this law may not be effectively enforced, however, since most child marriages in the country are unregistered customary law unions (Human Rights Watch 2015).

The silence around pregnancy found in this study was also documented by Mutambirwa (1984) who addressed how conception, pregnancy, and labor are matters not readily and openly discussed outside the family. Our study also found that this pregnancy silence extends to education about pregnancy, particularly among young women, which participants considered taboo because of their perceptions of its potential to encourage young women to engage in sexual activity. The silence around pregnancy also presents questions to health professionals about how to talk to young women about pregnancy or accessing reproductive healthcare services, when there is this culture of silence surrounding pregnancy. The contradicting participant views regarding the silence around pregnancy and expected community involvement during pregnancy warrants further study, identifying when this support begins.

The patriarchal culture around pregnancy presented in this study was also found by Murira et al. (2003) and Shamu et al. (2012) who found that participants perceived that women had less decision-making power than their partners in terms of their reproductive health and timing of pregnancy; factors which may impact their ability to plan for pregnancy. Empowerment of women is a key theme of current global maternal health efforts, and our study results point to a need to strengthen these empowerment efforts among women in Zimbabwe, in addition to improving male involvement in pregnancy care, which has been shown to increase institutional deliveries, skilled birth attendance, and uptake of postnatal services (Aguiar and Jennings 2015).

Our study has limitations. Friends or peers of adolescent girls and young women were not included in the study. Study data were collected from participants in two communities in Harare and may not include the cultural perspectives of all in Harare. Study results do, however, represent views from various participants with varying roles within the study communities and who could describe the social environment related to pregnancy and planning for pregnancy at multiple levels.

Conclusions

This research study adds to our understanding of the social environment related to pregnancy and planning for pregnancy from the perspectives of key community stakeholders in Harare, Zimbabwe and how these perspectives inform pregnancy-related decisions and practices. Culture and cultural practices strongly influenced pregnancy views and practices, and efforts to improve pregnancy and pregnancy-related outcomes should acknowledge these cultural influences. Potential maternal health targets could include addressing the culture of silence around pregnancy to improve reproductive health communication, empowering women to be partners in the pregnancy decision-making process and realize their potential to contribute to favorable pregnancy outcomes, and including women's immediate and extended social networks in pregnancy efforts. These

strategies could contribute to improving maternal health in Zimbabwe.

Acknowledgements The authors would like to thank the Sackler Institute for Nutrition Science for funding this research. We also thank the key community stakeholders who participated in the interviews, Gloria Chiedza Tinago for assistance with research activities, and Professor Emmanuel Chabata and Rudo Chingono for translating and transcribing study documents. We appreciate the support of the City of Harare for welcoming us into its communities and clinics.

References

Aguiar, C., & Jennings, L. (2015). Impact of male partner antenatal accompaniment on perinatal health outcomes in developing countries: A systematic literature review. *Maternal and Child Health Journal, 19*(9), 2012–2019. https://doi.org/10.1007/s10995-015-1713-2.

Airhihenbuwa, C. O., Ford, C. L., & Iwelunmor, J. I. (2013). Why culture matters in health interventions lessons from HIV/AIDS stigma and NCDs. *Health Education & Behavior, 41*(1), 78–84. https://doi.org/10.1177/1090198113487199.

Airhihenbuwa, C. O., & Webster, J. D. (2004). Culture and African contexts of HIV/AIDS prevention, care and support. *Sahara-J: Journal of Social Aspects of HIV/AIDS, 1*(1), 4–13.

City of Harare. (2014). *City Health Department 2013 annual report*. Harare: City of Harare.

Cohen, D. A., Scribner, R. A., & Farley, T. A. (2000). A structural model of health behavior: A pragmatic approach to explain and influence health behaviors at the population level. *Preventive Medicine, 30*(2), 146–154. https://doi.org/10.1006/pmed.1999.0609.

Collins, N. L., Dunkel-Schetter, C., Lobel, M., & Scrimshaw, S. C. (1993). Social support in pregnancy: Psychosocial correlates of birth outcomes and postpartum depression. *Journal of Personality and Social Psychology, 65*(6), 1243. https://doi.org/10.1037/0022-3514.65.6.1243.

Darnton-Hill, I. (2012). Global burden and significance of multiple micronutrient deficiencies in pregnancy. In *Meeting micronutrient requirements for health and development* (Vol. 70, pp. 49–60). https://doi.org/10.1159/000337421.

Frieden, T. R. (2010). A framework for public health action: The health impact pyramid. *American Journal of Public Health, 100*(4), 590–595. https://doi.org/10.2105/ajph.2009.185652.

Gadaga, T. H., Madzima, R., & Nembaware, N. (2009). Status of micronutrient nutrition in Zimbabwe: A review. *African Journal of Food, Agriculture, Nutrition and Development, 9*(1), 502–522.

Human Rights Watch. (2015). *Zimbabwe: Scourge of child marriage*. Retrieved November 30, 2015 from https://www.hrw.org/news/2015/11/25/zimbabwe-scourge-child-marriage.

Kim, H., Sefcik, J. S., & Bradway, C. (2017). Characteristics of qualitative descriptive studies: A systematic review. *Research in Nursing and Health, 40*(1), 23–42. https://doi.org/10.1002/nur.21768.

Maxwell, J. (2004). *Qualitative research design: An interactive approach*. Thousand Oaks, CA: Sage Publications Incorporated.

Mazrui, A. A. (1986). *The Africans: A triple heritage*. Boston and Toronto: Little, Brown.

McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education and Behavior, 15*(4), 351–377.

Munjanja, S. P. (2009). *Ministry of Health and Child Welfare, Zimbabwe: Maternal and perinatal mortality study 2007*. Retrieved November 30, 2015 from http://www.unicef.org/zimbabwe/ZMPMS_report.pdf.

Murira, N., Lützen, K., Lindmark, G., & Christensson, K. (2003). Communication patterns between health care providers and their clients at an antenatal clinic in Zimbabwe. *Health Care for Women International, 24*(2), 83–92. https://doi.org/10.1080/07399330390170060.

Mutambirwa, J. M. (1984). *Shona pathology, religio-medicine practices, obstetrics, paediatrics and concepts of growth and development in relation to scientific medicine*. Harare: University of Zimbabwe.

Perkins, J. M., Subramanian, S. V., & Christakis, N. A. (2015). Social networks and health: A systematic review of sociocentric network studies in low- and middle-income countries. *Social Science and Medicine, 125*, 60–78. https://doi.org/10.1016/j.socscimed.2014.08.019.

Roulston, K. (2010). *Reflective interviewing: A guide to theory and practice*. Sage. Retrieved January 12, 2016 from http://books.google.com/books?hl=en&lr=&id=YIfHXeTDsTIC&oi=fnd&pg=PP6&dq=Reflective+interviewing:+A+guide+to+theory+and+practice&ots=dIYVZ2QC8d&sig=g2axS08TtD95TNDsWs6dzSXV5rA.

Saldaña, J. (2013). *The coding manual for qualitative researchers* (2nd ed.). London: Sage Publication Ltd.

Shamu, S., Abrahams, N., Temmerman, M., Shefer, T., & Zarowsky, C. (2012). "That Pregnancy Can Bring Noise into the Family": Exploring intimate partner sexual violence during pregnancy in the context of HIV in Zimbabwe. *PLoS ONE, 7*(8), e43148. https://doi.org/10.1371/journal.pone.0043148.

Stokols, D. (1996). Translating social ecological theory into guidelines for community health promotion. *American Journal of Health Promotion, 10*(4), 282–298. https://doi.org/10.4278/0890-1171-10.4.282.

Tinago, C. B., Annang Ingram, L., Blake, C. E., & Frongillo, E. A. (2016). Individual and structural environmental influences on utilization of iron and folic acid supplementation among pregnant women in Harare, Zimbabwe. *Maternal and Child Nutrition*. https://doi.org/10.1111/mcn.12350.

Tinago, C. B., Ingram, L. A., Frongillo, E. A., Blake, C. E., Engelsmann, B., & Simmons, D. (2018). Understanding conceptualizations of pregnancy and planning for pregnancy among adolescent girls and young women in Harare, Zimbabwe. *Qualitative Health Research, 28*(9), 1509–1519. https://doi.org/10.1177/1049732318768231.

Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated Criteria for Reporting Qualitative Research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care, 19*(6), 349–357. https://doi.org/10.1093/intqhc/mzm042.

Valente, T. W. (2010). *Social networks and health: Models, methods, and applications*. New York: Oxford. Retrieved January 20, 2016 from http://archpsyc.jamanetwork.com/data/Journals/JAMA/22494/jbk0321_1203_1203.pdf.

ZIMSTAT. (2013). *Zimbabwe Population Census 2012*. Retrieved April 3, 2015 from http://www.zimstat.co.zw/dmdocuments/Census/CensusResults2012/National_Report.pdf.

ZIMSTAT. (2016). *Zimbabwe Demographic and Health Survey 2015: Final report*. Rockville, MD: Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International. Retrieved March 3, 2017 from https://dhsprogram.com/pubs/pdf/FR322/FR322.pdf.