REVIEWS

Contraceptive use in the Gaza Strip: A systematic review

Albany LaGore*[1,2], Suha Kridli[1], Ronald Piscotty[1]

[1] School of Nursing, Oakland University, Rochester, Michigan, USA
[2] C.S. Mott Children's Hospital, Ann Arbor, Michigan, USA

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ABSTRACT

Background: Between 2017-2019, the average total fertility rate in Gaza was 3.9 births per woman, which is significantly higher than the average global total fertility rate at 2.4 births per woman in 2018. Reliable family planning methods allow women and men to avoid unintended pregnancies and reduce maternal mortality. The purpose of this systematic review was to examine what is known about contraceptive use in the Gaza Strip, including: 1) common contraceptive methods used, 2) access to contraceptive services, and 3) barriers impacting family planning services.

Methods: The review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Articles published in the English language within the last 10 years (2013 to 2023) were screened from the following databases: CINAHL, PubMed, and Google Scholar.

Results: Seven articles were included in the final analysis. The United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) was found to be the main family planning service provider in the Gaza Strip (61%). Intrauterine devices (35.4%) were found to be the main method of contraception. Factors identified that impact contraceptive use included: 1) access to contraceptives, 2) cultural beliefs, 3) demographic characteristics (e.g., occupation and education), and 4) healthcare provider (HCP) and system influence. The restriction of goods into the Gaza Strip continues to impact contraceptive accessibility. Educational interventions should focus on addressing contraceptive misconceptions among Gazan women and HCPs while giving special attention to cultural beliefs (e.g., desire for several children) and demographic characteristics, specifically relating to occupation and education status.

Conclusion: Unintended pregnancies are preventable through the effective use of contraceptives. Future studies should prioritize interventions aimed at overcoming barriers to contraceptive use in the Gaza Strip, thereby promoting and safeguarding Gazan individuals' ability to exercise their reproductive health rights freely.

Key Words: Contraception, Birth control, Birth spacing, Family planning, Gaza Strip, Palestine

1. INTRODUCTION

Unwanted and mistimed pregnancies contribute to 40% of pregnancies worldwide.[1] According to the Palestinian Central Bureau of Statistics,[2] the fertility rate is 3.9 births per woman in Gaza (2017-2019)– significantly lower than the 4.6 births per woman reported in 1999-2003.[3] Respectively, the average global fertility rate in 2018 was 2.4 births per woman.[4] With regard to contraceptive use, the 2019 Palestinian Multiple Indicator Cluster Survey[5] discovered a contraceptive prevalence rate of 57.3% among Palestinians; additionally, satisfaction with modern contraception was reported as 61%. Despite the significant reduction in unmet

*Correspondence: Albany LaGore; Email: albanylagore@oakland.edu; Address: Oakland University School of Nursing, 433 Meadow Brook Road, Rochester, MI, 48309, USA.

family planning from 19% in 2006 to 11% in 2014, challenges remain concerning the availability and accessibility of contraceptive services for Gazan residents.[3] Böttcher et al.[6] examined the choices and services related to contraceptive use in the Gaza Strip. The main barriers affecting family planning services included misconceptions about contraception, poor availability of contraceptive services, and limited choices of contraceptive methods. Reliable family planning methods allow women and men to plan and avoid unintended pregnancies, which may result in increased maternal mortality and morbidity.[1] Additionally, the use of contraception promotes a country's economic growth and education, decreases poverty, and empowers women.[3] The purpose of this systematic review is to explore and discuss the extant literature that concerns contraceptive use in Gaza.

2. METHODS

2.1 Review questions

1) What are the most common methods of contraception in the Gaza Strip?
2) Where do individuals receive family planning services in the Gaza Strip?
3) What factors impact contraceptive use in the Gaza Strip?

2.2 Defined concepts

a) The term "contraception" is defined in this review as the intentional prevention of pregnancy through the use of drugs, chemicals, devices, sexual practices, or surgical procedures.[7] This article uses the terms "family planning" and "contraception" interchangeably.
b) The term "Gaza Strip" is defined in this review as a segment of territory in the Middle East.[8] This review uses the terms "Gaza Strip" and "Gaza" interchangeably.

2.3 Design

A systematic process guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)[9] was used to complete this review. The PRISMA flow diagram illustrates the sequential steps involved in the selection process leading to the inclusion of the final articles in this systematic review. Relevant studies were located through searching the Cumulated Index to Nursing and Allied Health Literature (CINAHL) database, PubMed (MEDLINE) database, and Google Scholar. Studies published in English within the past five years were included in the analysis. The following search terms were applied within the databases: i) 'palestin*' OR 'gaza' OR 'gaza strip' AND 'contracept*' OR 'birth control' OR 'family planning' OR 'pregnancy prevention' OR 'birth spacing'. The retrieval and screening of articles was completed by one reviewer; however, two separate reviewers contributed significantly to the design of the article and its critical revision, thereby ensuring important content was included.

2.4 Inclusion and exclusion criteria

The inclusion criteria initially consisted of articles published in English within the last 5 years. However, due to the limited research available on this subject, the inclusion of articles over the last 10 years (2013 to 2023) was needed. The articles included in this review must have either: 1) examined contraceptive use of any type among individuals residing in the Gaza Strip and/or 2) investigated contraceptive services in the Gaza Strip.

2.5 Screening process

In October 2023, a total of 55 articles were retrieved from the database searches and an additional 2 were obtained through reviewing reference lists. These 57 articles were imported into Zotero reference management software where duplicate articles were combined resulting in 50 remaining articles. Following title and abstract screening, 11 articles remained. The full text of each article was then screened. One article was excluded as it analyzed data that was collected prior to 2013. Three articles were excluded for not examining or discussing the contraceptive use among Gazan individuals or in Gaza resulting in a total of seven articles that were included in the final review. Figure 1 depicts the screening process through a PRISMA flow diagram.[9]

3. RESULTS

3.1 Summary of articles

Although the literature search included articles published over the last 10 years, the final seven articles selected for this review were all published within the last six years. Furthermore, each of these chosen articles employed an empirical research design. The majority of articles (n = 4) employed a mixed-methods approach, integrating both quantitative and qualitative components. The remaining articles (n = 3) utilized a qualitative design. Using the Joanna Briggs Institute (JBI) level of evidence for effectiveness grade,[10] it was determined that five of the articles had a level III grade,[3,11–14] and two articles had a level IV grade.[1,6] Six of the articles employed purposive or convenience sampling; however, one article[13] utilized cluster random sampling to obtain their quantitative study participants. Five of the articles,[1,6,12–14] employed focus group discussions– some in addition to surveys or questionnaires– and the remaining two[3,11] collected data from hospitals (e.g. equipment availability) and conducted semi-structured interviews with key informants. The findings of each study were comprehensive and can be seen in great detail in the Appendix. The findings specifically concerning common contraceptive use, the provision of family planning services, and barriers to receiving these services will be discussed below.

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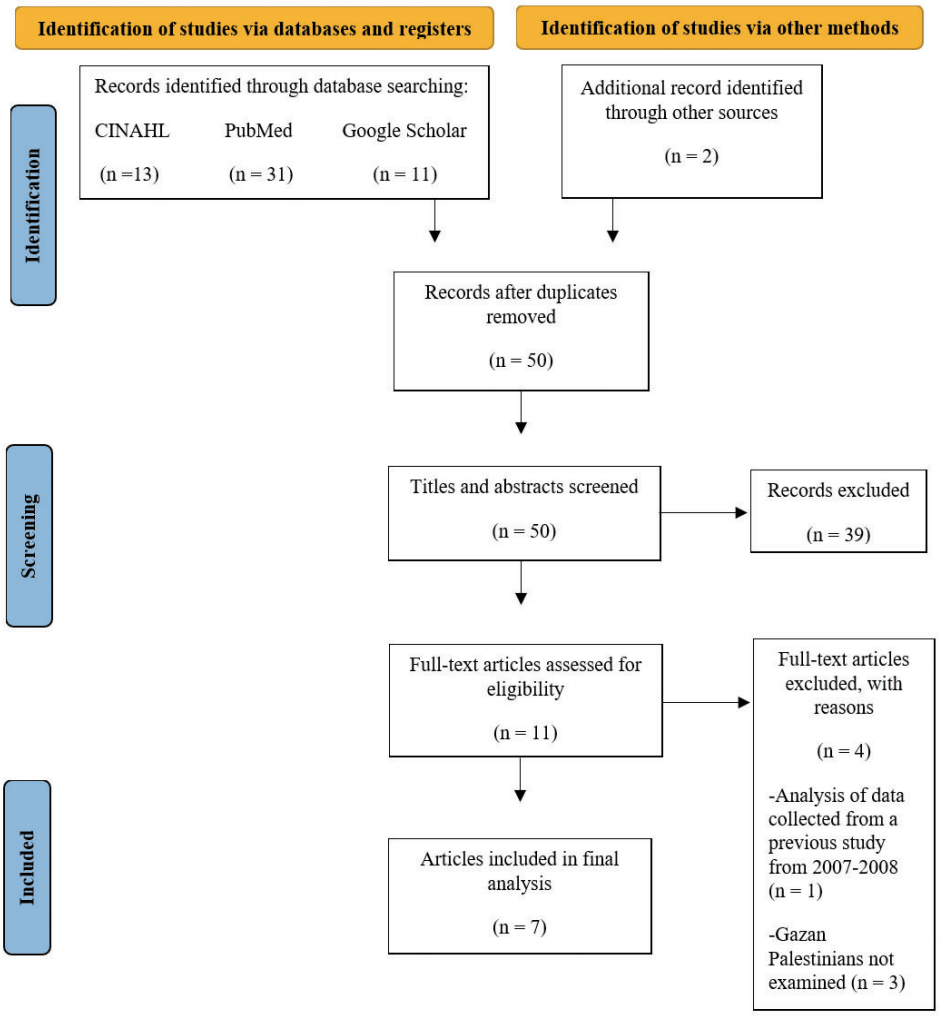

Figure 1. PRISMA flow diagram

3.2 Main method of contraception

The copper intrauterine device (IUD) was found to be the most common contraceptive method utilized among Palestinians (46.9%) including those living in the West Bank and Gaza Strip.[14] This was confirmed when Gazan female participants reported using the following modern methods of contraception: the IUD (35.4%), combined oral contraception (25.9%), condoms (16.5%), natural methods (15.2%), and hormonal implant (3.2%)[6] (see Table 1).

3.3 Provision of contraceptive services

Family planning services are obtained through the following establishments within Gaza: Ministry of Health (MOH) facilities (n = 56), United Nations Relief and Works Agency of Palestine Refugees in the Near East (UNRWA) agency centers (n = 22), non-governmental organizations, private doctors, community pharmacies, and private institutions.[3] Despite there being numerous family planning service providers in Gaza, UNRWA agency centers provide contraceptive services to over half (61%) of contraceptive users in Gaza. Meanwhile, it was discovered that the number of service methods allocated to non-governmental organizations do not provide an adequate supply based on the number of individuals they serve.[3]

Table 1. Contraceptive method use in Gaza

Contraceptive Method	Percentage of Use (%)
Intrauterine device	35.4
Combined oral contraception	25.9
Condoms	16.5
Natural methods	15.2
Hormonal implant	3.2

3.4 Barriers impacting family planning use

3.4.1 *Access to contraceptives*

The Gaza Strip's heavy reliance on external support stems from Israel's control, which extends to limiting the movement of people and goods, including vital family plan-

ning resources.[3] The high cost of contraceptive methods– specifically long-acting reversible contraceptive methods (LARCM's) such as the IUD– present an additional limitation to the use of family planning services.[14] Service restrictions have led to inconsistent supply stock in services among all commodities in service-providing centers in Gaza.[3] For example, the United Nations International Children's Emergency Fund (UNICEF) discovered there was no supply of five out of eight contraceptive methods (progestin pill, combined injectable, implants, male condom, and female condom) at any of the five facilities included in their study.[11] In addition, the facilities reported male condoms had not been available for the last year.

In comparison to the West Bank, Khader and Hamad found the Gaza Strip faces more shortages.[3] The MOH centers in Gaza only received sufficient stock of IUDs two out of seven years when comparing the standard consumption average, and male condoms were not available in the Gaza Strip by "anyone" in the years 2014 and 2017. Concerning condoms, when they are available, they may not be used for their intended purpose (i.e. family planning). One informant who was employed at a family planning facility in Gaza revealed condoms were used to cover the head of the ultrasound probe during vaginal ultrasounds.[3] In terms of system management, supply chain governance at MOH and UNRWA facilities reveals there is adequate storing capacity, appropriate storing conditions, and a well-functioning distribution system, but many of the birth prevention services examined were expired, which suggests monitoring and follow-up stock support needs improvement.[3]

3.5 Cultural beliefs

Hamad[12] discusses a major motivator for fertility that is attributable to the current Israel occupation of Palestine. Having numerous children is an act of "insurance" as Gazan residents expect some of their children to die as a result of the ongoing war. Moreover, the absence of social security policies and welfare services for aging Palestinian individuals encourages fertility,[1] particularly fertility to produce male offspring,[3] as they rely on their children for support as they age.[12]

Males are not only highly desired as offspring but also highly influence contraceptive utilization because they are considered the "man of the household", thus the main decision-maker for their family.[6, 13] Nevertheless, most families (96%) who utilize contraceptive services somewhat or strongly agree that both the man and woman decide the contraceptive method to be used together.[13] Contrarily, in a separate study[6] only 33.3% of contraceptive users agreed that contraceptive decisions were a combined partner decision. Although men participate in family planning decisions, they do not feel their presence at such service facilities is accepted by the community or service providers. To ensure the husband's decision regarding contraceptive use is honored during family planning consultations, the wife is often accompanied by her mother-in-law, ensuring that his choice is respected.[13]

Religious beliefs, particularly those grounded in Islamic doctrine, do not appear to directly influence the decision whether to use or abstain from using family planning services among most residents of Gaza.[12] Furthermore, Islamic teachings do not appear to directly dictate an individual's decision regarding their desired number of children. However, some believe that Islam and the teachings of the Prophet Muhammad encourage having many children. Though reproduction is encouraged in the Islamic religion, it may not directly influence the use of contraceptive services among women in the Gaza Strip.[12]

3.5.1 *Demographic characteristics*

Gazan women who are unemployed and with minimal education are less likely to utilize family planning services than those who are employed and with higher education.[12, 13] The lack of birth control measures and the consequent cycle of childbirth can create obstacles for women by preventing them from pursuing or completing their education and participating in the workforce.[14] Financial status also impacts the uptake of contraception. Research suggests the higher the financial standing, the more likely the individual is to utilize family planning services.[13] Regarding the desire to have children, Hamad[12] discusses the two contradictory opinions about the impact of the economy on having children. The majority of families view the current economy (i.e. no jobs, poor living conditions) as a reason to utilize contraceptives as they feel they cannot afford to have a large number of children. On the contrary, others view the impoverished economy as encouraging the reproduction of more children as larger families receive additional support and aid (food stamps and coupons).

3.6 Healthcare system and provider influence

Healthcare providers (HCPs) in Gaza experience strong beliefs that modern contraceptives cause secondary health consequences such as cancer and infertility.[6] The inadequate training and inexperience of HCPs in family planning, specifically concerning long-acting hormonal contraceptives, further magnifies the deficit concerning contraceptive practice knowledge.[14] Weak family planning counseling was noted in multiple studies.[3, 14] Additionally, the absence of privacy during family planning consultations presents a barrier to discussing sensitive health topics such as contraceptive use.[11]

UNICEF[11] found only two out of five primary health care (PHC) centers included in their study had auditory and visual privacy for patient consultations. As a result of limited room availability, gender-sensitive issues, such as contraceptive use, were not private or confidential.

4. DISCUSSION

Identifying the IUD as the main method of contraception may be directly related to its accessibility and availability rather than preference. For instance, UNICEF[11] examined the availability of contraceptives at five primary health care (PHC) facilities, and the IUD was found to be the only form of contraception observed at all five centers. Furthermore, IUDs are one of the most effective forms of contraception; in fact, IUD rates of failure are similar to sterilization procedures (0.08%).[15] Access to this effective, long-term, satisfactory contraceptive likely contributes to the IUD being identified as the leading contraceptive method in Gaza. Contrarily, one may consider the IUD as one of the more technically challenging contraceptives to administer due to the provider training required for insertion and the potential side effects, such as discomfort,[15] which could lead to the expectation that it would be less common. Despite multiple establishments offering family planning services to Gazan citizens, UNRWA centers service over half of contraceptive users in the Gaza Strip, which likely correlates with contraceptive accessibility and availability. Consequently, organizations equipped with a diverse range of contraceptive services are more likely to attract individuals seeking birth control prevention services compared to those lacking sufficient supply. For example, suppose someone wishes to access their preferred contraceptive service and finds that only the UNRWA service center has it in stock. In that case, they will have no alternative but to obtain it from there, given its exclusive availability. This further emphasizes the impact of resource allocation on service distribution.

The identification of access to contraceptives as a barrier to obtaining family planning services appears to correlate to Israel's control and restriction on goods and services into the Gaza Strip. Because of the ongoing war, many individuals in Gaza do not have access to contraceptives as they are simply not available, too costly, expired, or utilized outside of their original purpose to support healthcare providers in performing examinations (i.e. condoms to cover the head of vaginal ultrasound probes). Concerning expired contraceptive stock, perhaps the facility service providers where such observations were made felt as though having expired stock was better than none at all. It is also possible that the providers were not aware of the expiration of certain supplies. Regardless, some providers might have held the view that having expired stock could serve as a temporary solution until fresh supplies become available, thereby ensuring some level of access to contraception for individuals was available. However, it is important to recognize that the effectiveness of expired contraceptives (e.g. birth control pills) diminishes over time, and using them beyond their expiration date can pose health risks and may not provide reliable protection against pregnancy.[16] However, if an IUD package has surpassed its expiration date, it pertains to the expiration of the sterile packaging rather than the effectiveness of the IUD itself.[17] In light of this, healthcare providers may find that the benefits outweigh the drawbacks and proceed to insert an expired IUD.

The impact of cultural beliefs on the utilization of family planning services in Gaza is largely rooted in the prevalent cultural norm of having numerous children, which seems to be further influenced by the ongoing Israeli occupation of Palestine and the absence of adequate social security policies and welfare services for elderly Palestinians. Due to the persistent conflict with Israel, Palestinians anticipate the death of some of their children, which may prompt them to consider it essential to have a large family to ensure financial stability in their later years. As men commonly play a role in family planning decisions within the household, the prevailing stigma against their involvement in consultations with women for family planning negatively impacts the utilization of such services. When men are absent from these consultations, they miss out on the educational and service provisions associated with family planning visits, thus likely hindering their engagement in the process. The finding that religious beliefs, particularly those who argue that Islam prohibits limiting the number of children produced, may not directly influence the utilization of family planning services and is likely due to the fact that the Quran does not prohibit birth control, nor does it restrict using it for spacing of pregnancies. Additionally, most Muslim leaders are in support of family planning and affirm that Islam encourages birth spacing.[18] The support of religious leaders in the utilization of family planning services likely contributes to the finding that religion does not directly influence the decision to use or refrain from using contraceptives.

Considering demographic characteristics, the positive relationship found between Gazan women's employment and education on the utilization of family planning services may be associated with empowerment. Wadi[19] discusses how women empowerment programs in Palestine are in place to improve Palestinian women's economic empowerment and financial inclusion. Working, educated Gazan women may be empowered to take more agency and decision-making within their families, including decisions regarding family

planning. Additionally, employed, educated women may have increased health awareness concerning the benefits of family planning services. Their awareness may stem from their education or their access to information concerning family planning services. Furthermore, these women may harbor goals, both personal and professional, that they aim to fulfill prior to embarking on parenthood or expanding their families. Alternatively, they may opt not to have children altogether, choosing instead to concentrate on their individual life aspirations.

The misconception many Gazan healthcare providers have that modern contraceptives cause secondary health consequences may deter individuals from utilizing certain contraceptives. For instance, healthcare providers subscribing to such misconceptions may exhibit reluctance to offer contraceptive services to their patients and may even dissuade them from considering certain methods. Furthermore, insufficient knowledge and training among healthcare providers concerning family planning care may result in inadequate family planning care for their patients, ultimately diminishing the likelihood of effective family planning utilization. The systematic problem concerning the absence of privacy with healthcare visits may impact the way certain individuals respond to family planning questions. An individual may want to receive family planning information or a contraceptive service but may feel uncomfortable or unsafe in requesting or discussing such services if they are not in a private setting.

Implications

Future efforts should prioritize enhancing access to contraceptive services, refining healthcare provider training, and tackling cultural and socioeconomic factors influencing contraceptive utilization in Gaza. It is imperative to address contraceptive misconceptions among both healthcare providers and patients, including those related to adverse health outcomes, alongside tackling the stigma associated with the man's involvement in family planning discussions and consultations. The use of technology and social media may be an appropriate avenue to disseminate accurate contraceptive information and decrease the stereotypes associated with male involvement in family planning. Technology and social media platforms can provide easily accessible and up-to-date information on contraceptive methods, their effectiveness, and their associated benefits and risks. This information can reach a wide audience, including both men and women, regardless of their geographical location or socioeconomic status. To ensure cultural sensitivity, social media campaigns can be tailored to align with and honor the cultural norms and values prevalent in the Gazan community. By integrating culturally sensitive messaging and visuals, these campaigns can establish a stronger resonance with Gazan men and women.

When considering the financial implications high birth rates have on individual families and entire economies, one should consider the two varying beliefs Gazan individuals hold that having children within an already poor and impoverished economy can be regarded as 1) further financially straining or 2) strategically financially beneficial. This opposing ideology that having children can either be a costly or advantageous financial decision must be studied to identify and understand the factors that contribute to this vastly different view. Strategies and interventions can be implemented to educate Gazan families on the financial implications children inherently impose to ensure conceiving individuals are making an informed decision to do so. Additional financial issues affecting contraceptive utilization are linked to the absence of social security policies and welfare services for aging Palestinians. Consequently, the reliance on children for financial support increases, further incentivizing reproduction. As this phenomenon is evident in the literature, there is a need for policy or service adjustments. Models and frameworks tailored to system change can help facilitate this transition, although they may require examination within a controlled setting before full implementation. This would allow for the identification of any potential issues or challenges with the newly developed frameworks, allowing necessary adjustments to be made before broader implementation. This approach helps ensure that the introduced changes are effective and minimize any unintended consequences when applied on a larger scale.

Future research should employ rigorous interventional designs, such as randomized controlled trials (RCTs). It's worth noting that none of the articles included in this review met the criteria of being an RCT, which is considered a level one evidence according to the Joanna Briggs Institute[10] hierarchy for assessing effectiveness. Consequently, the findings of this review are somewhat limited by the low level of evidence from the reviewed articles. This limitation may stem from the difficulty in obtaining funding for extensive research studies in this economically disadvantaged area. Additionally, the lack of high-level research could be due to restricted access to Gaza, including limited technological resources and barriers to academic advancement.[20] As a result, most literature is produced by entities residing within the Gaza Strip, such as international humanitarian institutions. While these reports are helpful, they do not provide an academic analysis or thoroughly break down the complex socio-political and economic perspectives of Gazans from a bottom-up view.[20] This underscores the apparent necessity for such studies to be conducted. In addition, given that

the intrauterine device (IUD) stands as the prevailing form of contraception among Gazan individuals, further research needs to determine the basis behind its prominence. Is it a result of women's preference for this contraceptive method? or, is it because it's the sole method readily accessible? Finally, the lack of training and counseling experience among healthcare providers concerning long-acting contraceptives, such as the IUD, should also be addressed to ensure women receive adequate or necessary family planning care. Future interventional studies can implement educational training programs for healthcare providers to increase their knowledge, practice, and experience concerning family planning counseling and contraceptive care services in Gaza.

5. Conclusion

The utilization of family planning services among Palestinians residing in the Gaza Strip is influenced by several factors ranging from socioeconomic status and cultural beliefs to healthcare system and provider influences and access to contraceptive services. Tailored interventions that consider the diverse needs and beliefs of Palestinian individuals are essential for promoting reproductive health and empowering individuals to make informed decisions about family planning. By addressing these challenges and implementing strategies, policymakers, healthcare providers, and researchers can improve family planning services for individuals in the Gaza Strip, thereby supporting and safeguarding the ability of Gazan individuals to freely exercise their reproductive health rights.

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Authors contributions

Ms. LaGore was responsible for collecting the data and drafting the manuscript. Dr. Kridli and Dr. Piscotty were responsible for designing the manuscript and contributing to its revision. All authors read and approved the final manuscript.

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