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Awareness of Danger Signs during Pregnancy and Post-Delivery Period among Women of Reproductive Age in Unguja Island, Zanzibar: A Qualitative Study

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Abstract

Zanzibar is part of the United Republic of Tanzania with high levels of maternal mortality due to obstetric complications. Women's awareness on obstetric danger signs and early seeking of medical care is the first intervention in reduction of maternal deaths. This study explored awareness of danger signs among women of reproductive age in Unguja Island, Zanzibar. A community-based qualitative study using focus group discussions among women of reproductive age was conducted to explore awareness of danger signs between March and April 2016. Data was analyzed using thematic analysis. The study found that women were aware of danger signs during pregnancy but not during the post-delivery period. The mentioned danger signs during pregnancy included vaginal bleeding, fits, swelling of the legs and leaking of vagina fluid. Some women still believed that danger signs during pregnancy and post-delivery period were due to witchcraft leading to consultations with traditional healers and hence delays in seeking skilled medical care. In this context of misconceptions and cultural beliefs there should be investment in health education on danger signs to the community in general with involvement of traditional birth attendants and traditional healers who might play a role in advising and referring women with danger signs to the health facilities for care. *(Afr J Reprod Health 2019; 23[1]: 27-36).*

Keywords: Awareness, Danger signs, Pregnancy, Post-delivery, Zanzibar

Résumé

Zanzibar fait partie de la République-Unie de Tanzanie où la mortalité maternelle due aux complications obstétricales est élevée. La sensibilisation des femmes aux signes de danger obstétricaux et la recherche précoce de soins médicaux constituent la première intervention en matière de réduction du nombre de décès maternels. Cette étude a exploré la prise de conscience des signes de danger chez les femmes en âge de procréer dans l'île d'Unguja, à Zanzibar. Une étude qualitative à base communautaire utilisant des discussions de groupe cible parmi des femmes en âge de procréer a été menée pour explorer la sensibilisation aux signes de danger entre mars et avril 2016. Les données ont été analysées à l'aide d'une analyse thématique. L'étude a révélé que les femmes étaient au courant des signes de danger pendant la grossesse mais pas pendant la période post-accouchement. Les signes de danger mentionnés pendant la grossesse comprenaient des saignements vaginaux, des convulsions, un gonflement des jambes et des fuites de liquide vaginal. Certaines femmes croyaient encore que les signes de danger pendant la grossesse et après l'accouchement étaient dus à la sorcellerie conduisant à des consultations auprès des guérisseurs traditionnels et en conséquence à des retards dans la recherche de soins médicaux qualifiés. Dans ce contexte d'idées fausses et de croyances culturelles, il convient d'investir dans l'éducation à la santé sur les signes de danger pour la communauté en général avec la participation des accoucheuses traditionnelles et des guérisseurs traditionnels qui pourraient jouer un rôle dans le conseil et l'orientation des femmes présentant des signes de danger vers les établissements de santé pour le soin. *(Afr J Reprod Health 2019; 23[1]: 27-36).*

Mots-clés: Sensibilisation, signes de danger, grossesse, après l'accouchement, Zanzibar

Introduction

Pregnancy is a normal physiological process and the outcome of most pregnancies is good. However, all pregnancies involve some risk to the mother and/or the fetus. Every pregnant woman faces the risk of sudden, unpredictable complication that could end up in death or injury to herself or her infant. Hence, it is necessary to employ strategies to overcome such problems as they arise[1]. Around 15% of all pregnant women develop a potentially life-threatening complication that calls for skilled care and some will require a major obstetrical intervention to survive[2]. The risk of a woman dying because of pregnancy or childbirth during her lifetime is about one in six in the poorest parts of the world compared with about one in 30,000 in Northern Europe[3].

In 2015, maternal deaths in developing regions accounted for approximately 99% of the global maternal deaths, with sub-Saharan Africa alone accounting for roughly 66%[4]. Around 52% of maternal deaths are attributable to three major leading preventable causes, which are haemorrhage, sepsis, and hypertensive disorders[5].

Zanzibar is among the developing countries with high Maternal Mortality Ratio (MMR) which is estimated to be 307 deaths per 100,000 live births[6]. At Mnazi Mmoja Referral Hospital in Zanzibar, a high mortality rate of 647 per 100,000 live births has been estimated, mostly caused by obstetric haemorrhage and hypertensive disorders of pregnancy[7]. The major challenges to reduction of maternal mortality in Zanzibar include limited access to quality health services, weak referral system and poor health-seeking behaviour among women[8].

To end preventable maternal mortality, a call to action across all regions of the globe has been initiated. Through the successful implementation of Sustainable Development Goals (SDGs), which include the target of reducing global maternal mortality to less than 70 deaths per 100,000 live births, ending preventable maternal mortality at a global level is set to be achieved by 2030[4]. However, achievement of SDG targets is ambitious for most high-mortality countries[9]. To achieve this goal, improved knowledge and awareness on the signs and symptoms of pregnancy complications are needed, especially in low-income countries[10].

Danger signs are not the actual obstetric complications, but symptoms that are easily identified by non-clinical personnel[11]. Danger signs of pregnancy refer to the life-threatening conditions that women encounter during pregnancy. The commonest danger signs during pregnancy that can increase the risk of maternal deaths include vaginal bleeding, convulsions, high fever, abdominal pain, severe headaches, blurred vision, absence of fetal movements, gush of fluid from vagina, foul smelling vaginal discharge, swelling of the hands or face, weakness, and difficulty of breathing[1,12].

Presence of danger signs indicates the need for immediate care to the woman[11]. The occurrence of any danger sign during pregnancy is a signal that something is wrong with the pregnant woman or the pregnancy itself. If this happens, the pregnant woman needs urgent medical care and advice[13].

Knowledge of danger signs during pregnancy, childbirth, and during the postpartum period is essential for seeking medical help[14]. It is vitally important for women of reproductive age and their families to have knowledge regarding danger signs so that they can immediately seek appropriate care[15,16]. Recognizing danger signs during pregnancy and taking timely action are crucial to reduce maternal and newborn mortality and morbidity[17]. Since lack of recognition of danger signs may lead to delay in seeking care[18].

Raising awareness of danger signs during pregnancy, childbirth and the postpartum period is crucial for safe motherhood as this would improve early detection of complications and reduce the delay in deciding to seek obstetric care[19]. Insufficient knowledge about danger signs of pregnancy among women, families, and birth attendants in developing world is one of the major contributing factors for maternal deaths[20,21].

In Zanzibar, the awareness status on danger signs among women of reproductive age is not known. However, more than half of pregnant women are informed about danger signs of pregnancy complications during antenatal care[22]. Early ANC booking at 16 weeks has dropped from 33.9% in 2008[23] to 19.5 in 2012 [24]. More than 80

percent of pregnant women attend at least one Antenatal Clinic (ANC) visit at which healthcare providers are supposed to give health education on reproductive health issues including danger signs during pregnancy and post-delivery period before starting providing the usual ANC services[25] however, ANC coverage of four recommended visits remains low at 49.9%[22]. This means that 50% of pregnant mothers do not complete the recommended visits. The aim of this study was to explore the awareness on danger signs of pregnancy among women in Unguja Island, Zanzibar. The study findings are important to the Zanzibar Ministry of Health, health service providers including maternal and newborn health stakeholders to develop interventions that will improve the quality of antenatal care services provided at the health care facilities and hence reduce maternal and neonatal mortality rates.

Methods

Study design

A community-based descriptive exploratory study was conducted using a qualitative research approach to explore awareness of danger signs during pregnancy and post-delivery period among women of reproductive age. The study was undertaken between March and April 2016 in Unguja Island, Zanzibar.

Study setting

Zanzibar comprises two main Islands, Unguja and Pemba. The islands are situated off the eastern coast of Tanzania Mainland with an area of 2,654 sq km[23]. Unguja Island covers an area of about 1,464 sq km[26]. There are five administrative regions, of which three are in Unguja Island. These are further subdivided into six districts. Each district is further subdivided into several smaller administrative units knows as "Shehia"[24].

According to the 2012 Population and Housing Census, Zanzibar had a total population of 1,303,569 people with an annual growth rate of 3.1%. Unguja had a population of 896,721 (68.8%) [25]. Zanzibar has an overall fertility rate of 5.1 children per woman[22]. In 2012, it was estimated that Zanzibar had 339,007 (50.4%) women of reproductive age (15-49 years)[28].

Study population

Women of reproductive age (15-49 years) who had been pregnant in the past two years prior to data collection and had attended ANC clinic were eligible for the study. These women were expected to provide information on awareness and experience about danger signs during pregnancy and post-delivery period.

Sampling procedure and selection of study participants

Purposive sampling technique was used to select three districts out of six, which were Urban, West, and North B districts. These districts were selected because they are highly populated and have health facilities offering maternal and newborn health services. Also, these districts have high MMR compared to other districts[6]. Simple random sampling was used to select ten shehias from the selected districts (three shehias in each district except North B with four) out of 151 shehias.

With the assistance of local government leaders and community health workers (CHWs) in the ten shehias, the research team identified all women who had been pregnant during the previous two years and were purposively selected for the Focus Group Discussions (FGDs). Study participants were identified by using a record book from the shehia's office, which has a list of all shehia's residents. The list includes the house number, number and names of household members and their ages. Selection of participants was done to get a heterogeneous sample of women with different backgrounds and experiences, and those who were selected were shehia residents willing to participate in the study. From each Shehia, 10-12 women were recruited for the study. With the help of local leaders, the research team was able to identify the venue and suitable time for the meetings. The meeting was arranged for FGD.

Data collection tools

An interview guide was used with flexibility to allow probing. The guide was in English and later

translated into Swahili language, which is articulated to most of the study participants. The guide comprised of three main question areas: 1) awareness of danger signs during pregnancy and post-delivery period, 2) sources of information on danger signs and 3) perception towards danger signs and actions taken when danger signs occur.

Data collection methods

Before starting the FGDs, all study participants were informed about the aim and importance of the study. Verbal consent was requested from all the participants and the Principal Investigator (PI) informed them about their voluntary participation. They were informed about their freedom to withdraw from the study at any point. Also, they were told that their participation would bear no negative effects on their right to get health care services for themselves and their families. A guarantee of confidentiality on the information they provide was assured by excluding their names as identification in the collected data.

In each FGD, study participants were seated in a semicircle- with the PI and note taker. Before the discussion, each study participant was given an identification number to be used throughout the discussion. All FGDs were recorded using digital voice recorders. Before recording, participants' consent was asked. The FGDs were conducted in Swahili language which is spoken by all participants. The FGDs were moderated by the PI and one note taker and a nurse with experience in qualitative research. Each FGD lasted between 45-60 minutes.

Data analysis

The digitally recorded FGDs were transcribed verbatim and later translated into English to facilitate analysis process. Data were analyzed manually using qualitative thematic analysis approach. The analysis started by getting familiar with the data through reading the transcriptions several times to obtain a sense of the whole discussion. The PI and other researchers familiar with the context of the topic manually did independent coding. Thereafter, a preliminary coding structure was agreed upon and a codebook was created. The additional codes which emerged during coding process were added concurrently following consensus by coders. Saturation was achieved after reviewing and coding emerging themes from all 10 FGDs when there was no more new information obtained. Accuracy was checked during the coding process to ensure that the meaning of units, codes and categories were congruent to emerging patterns. Any discrepancies were resolved through discussions until consensus was reached. After completion of the coding process, major issues were highlighted, appropriate themes searched for categorization of the data and finally, the emerging themes were defined and named. A full report was written based on the content of the major categories. The themes that emerged were: 1) awareness of danger signs during pregnancy, delivery and post- delivery period, 2) sources of information on danger signs, and 3) Healthcare seeking behaviour during danger signs of pregnancy.

Results

Social demographic characteristics of the women

A total of 108 women of reproductive age from the three districts participated in the study. The mean age was 29 years (range, 19-46 years). More than half of the study participants were younger than 28 years. More than one-third (42%) were in the age range of 25-34 years. More than three quarters of the women were married (92%) and majority (80%) had completed secondary education. Most of the study participants (79%) were housewives and nearly two-thirds were multiparous. Only few study participants (10%) were employed in the formal sector, where farming was reported by less than a quarter of the study participants (Table 1).

Awareness of danger signs during pregnancy and post-delivery

It was observed that women were aware of danger signs during pregnancy. When asked to mention danger signs during pregnancy, majority of them, across the districts, knew some key danger signs which included vaginal bleeding during pregnancy,

Table 1: Socio-demographic and reproductive characteristics of women in Unguja Island, Zanzibar (n = 108)

Characteristic	Number (%)
Age (years)	
Less than 25	39 (36.1)
25 - 34	45 (41.7)
Older than 34	24 (22.2)
Marital status	
Single	3 (2.8)
Married	99 (91.7)
Widowed	6 (5.6)
Educational level	
Non-literate	4 (3.7)
Completed primary	15 (13.9)
Completed secondary	89 (82.4)
Occupation	
Government employee	3 (2.8)
Private employee	8 (7.4)
Farming	12 (11.1)
Housewife	85 (78.7)
Gravidity	
1	27 (25.0)
2 – 4	52 (48.1)
5+	29 (26.9)
Parity	
1	37 (34.3)
2 – 4	54 (50.0)
5+	17 (15.7)
District of residence	
Urban	32 (29.6)
West	31 (28.7)
North B	45 (41.7)

fits, swelling of the legs and vaginal watery discharge.

Women acknowledged that, they know some of the danger signs, knowing about the danger signs in advance would help women and their partners implement their birth and emergency plans and they would know when to seek care from the skilled attendants. Majority of women across all the districts were aware of danger signs as narrated below:

> *"We know them, such as swelling of the legs, vaginal bleeding during pregnancy or after delivery, high blood pressure, fits during pregnancy, fistula, being sick and body malaise, stinking watery discharge from the private parts, lack of blood in the body, and dirty urine." (NDP 10,4, WDP 2, UDP 6).*

Severe bleeding with some clots is a major sign of post-delivery danger sign. However, when women were asked to mention danger signs during post-delivery period, majority of them across the districts knew only vaginal bleeding, thus not aware of post-delivery danger signs.

Sources of information on danger signs during pregnancy and postnatal delivery

This study revealed that the only source of information related to danger signs during pregnancy and post-delivery period was from healthcare providers during ANC visits. Majority of study participants agreed that they were educated and counseled about danger signs in pregnancy and post-delivery period when they attended antenatal clinics as mentioned by majority of women across all FGDs:

> *"Always we are taught about danger signs during pregnancy when we are attending clinics. Also, some healthcare workers provide us with their phone numbers so that once we experience excessive bleeding or swelling of the face and legs or any problem, we can inform them, and they can advise us on actions to take for management." (NDP 4, 9, WDP 3, 5, UDP 6,11)*

The participants expressed concerns about some women having a tendency of late ANC bookings and prefer to attend for the first booking when they are close to the delivery period. This results in missing some important information provided by healthcare providers during antenatal visits as narrated by few women:

> *"If you attend the clinic as routine then you get adequate health education. But you should attend clinic as scheduled and not that you appear at the clinic when you are 7 months pregnant because at this moment you will have only one or two visits before you deliver.* So, *you will have missed the health education. But if you go early, on your scheduled days, they provide education on every clinic day. So, if you attend 6-7 sessions, you will get a lot of information." (WDP 4,9, UDP 1, 7, 12)*

Almost all study participants agreed that there is no other source of information from which they

obtained health information except healthcare providers as reported by majority of women:

> *"There is no radio or television programs that teach or educate us about risk symptoms. We only receive health education from the clinics and staff." (NDP 3, WDP 5, UDP 1, 8)*

Furthermore, the findings revealed that the participants built good relationship with some healthcare providers when attending ANC services as mentioned by some women:

> *"They have good relationship with us; some of the healthcare providers give their contacts to pregnant women to contact them in case of any problem related to pregnancy." (WDP 5, UDP 1, 8)*

Perception and healthcare seeking actions towards danger signs during pregnancy and post-delivery period

The study findings revealed that majority of women perceived that danger signs during pregnancy and post-delivery period were due to medical causes that need medical attention and witchcraft was not involved as any pregnant mother can get danger signs and if someone gets, it is God's plan. As stated by some of women;

> *"Danger signs during pregnancy are often caused by health problems in the body, especially if you do not follow the doctor's directions. So, it is better to go to the hospital if you have noticed any of the danger signs. If you go to the hospital you will be given care by the professionals and get proper treatment rather than going to traditional healers." (WDP 4,7,11, UDP 1, 5, 12)*

Despite some women seeking care and treatment from traditional healers, they do agree that some conditions like severe bleeding, need medical help and cannot be managed by traditional birth attendants. Some women mentioned some danger signs that may occur during pregnancy including *"mdudu"* (fits) and excessive bleeding that have no home remedies. The only solution is to seek treatment at the hospital. Women expressed that most of the conditions that they mentioned are better managed by experts at the hospital as stated by some women:

> *"I did experience bleeding problems during pregnancy and whenever the rural midwives are faced with severe bleeding, they refer you to hospital. I think that despite their expertise, heavy bleeding from a pregnant woman is too much for them. My mother in-law is a traditional birth attendant and she brought out all the medicines when I was bleeding but finally, I ended up in the hospital." (NDP 10)*

> *"If it happens at home that someone is bleeding during pregnancy or severely bleeding after delivery, we usually don't know what to do because at home there is no expertise. The experts are mostly found in the hospital. So, we are always rushing to the hospital for proper management." (WDP 5, 8, UDP 2,7)*

However, some women had a different opinion that those who visit the witch doctors get these devil spirits which they associate with eclampsia. Some participants expressed concern about the myths in the community that hinder pregnant women from seeking professional assistance when experiencing danger signs since the myth on witchcraft still is at higher level within their community. Furthermore, some women still have traditional beliefs that danger signs during pregnancy and post-delivery period are due to traditional causes related to witchcraft and that is why they first consult traditional healers before seeking medical care. They continue using local herbs in managing danger signs. Such beliefs result in delaying seeking proper health care as expressed by some women:

> *"Some women perceive that they have been possessed by the devils ("majini") and bewitched. The perception of witchcraft compels some women be attended by traditional healers instead of going to the hospital for proper management." (NDP 2, 3, 6, WDP 4, 10)*

> *"In our community, some people believe that if the pregnant woman is severely bleeding, it is due to bad people like grandmothers or neighbours who don't want the pregnant woman to get children that is why the pregnant woman bleeds severely. "(NDP 6)*

Some traditional believes leading to delay in seeking health care or early ANC booking were also mentioned as most women, especially from rural areas, reported to be convinced that pregnancy is not supposed to be prematurely known, especially a three-month pregnancy. So, they hide themselves and start using medication from traditional healers, in case they get problems with their pregnancy. They begin attending clinics when pregnancy is obvious. This is done because of the perception that they are protecting themselves from evil eyes of the wicked which may affect the pregnancy. Women from the North district stated that:

> *"Our grandmother always kept telling us that you should not expose your pregnancy earlier because some people have evil eyes. There are many people who get pregnant, but they abort or give birth, but they may die due to curses of an evil spirit ("mdudu") and there are some who are bewitched. You could give birth safely and leave the hospital in good health but when you reach home you feel bad and you die; that happens." (NDP 5, 8, 9, 11)*

Discussion

Women's awareness on danger signs during pregnancy was high but low for post-delivery period. The mentioned danger signs during pregnancy included vaginal bleeding, fits, swelling of the legs and leaking of vagina fluid. Healthcare providers were found to be the main source of information on pregnancy and post-delivery-related danger signs provided during ANC visits. Misconceptions that danger signs during pregnancy are related to witchcraft were still in existence leading to delays in early seeking for professional healthcare.

Awareness of the danger signs during pregnancy and postnatal delivery

Failure to recognize danger signs during pregnancy has been identified as a key factor causing delay in seeking treatment and leading to maternal deaths[27]. Our study findings showed that women were aware of danger signs during pregnancy. This was not a surprise since in Zanzibar; about 80% of the women attend ANC at least once during pregnancy[26], where routine health education on danger signs during pregnancy and post-delivery is given. Contrary to other studies from Ethiopia and Tanzania, it has been shown that women's awareness on danger signs during pregnancy is low and mainly attributed by low level of education. Thus, in Ethiopia nearly half of mothers were illiterate and in the Tanzania study more than three quarters of the women had attained primary education level[16,21,27]. In our study, the level of education was high (secondary education). Surprisingly, the same women in our study were not aware of danger signs during postpartum period. Vaginal bleeding was the only mentioned danger sign during post-delivery period. This could be explained by the fact that the healthcare providers might have put more emphasis on health information related to pregnancy during ANC visits. Also, late booking at ANC could be an alternative explanation since only about 40 percent of women had their first ANC booking at their sixth month of pregnancy or later[28]. Similarly, a study done in Ethiopia reported that mothers were not aware about danger signs during post-delivery period due to low education level[16]. However, in our study education status was not the reason. This implies that there are other factors that contribute to awareness on post-delivery danger signs such as early ANC booking as found in one of the studies in Tanzania[29].

Sources of information on danger signs during pregnancy and post-delivery period

In this study, healthcare providers were found to be the main source of information on pregnancy and post-delivery-related danger signs during ANC

visits. This finding is in agreement with other studies[10,29,30], whereby it was reported that healthcare service providers were the most frequently reported source of information on danger signs. The concurrence of these findings might be because most of the women in the studies attended ANC at least once.

Furthermore, our findings show that pregnant women in Zanzibar had no other source of information on danger signs during pregnancy and post-delivery period. This finding differs from other studies which report that apart from healthcare workers, women received information from other sources like, the media, friends, neighbors or relatives[14,30]. Lack of other sources of information in Zanzibar may hinder mass awareness on danger signs and lead to increased maternal complications including death as few women (12%) do attend the recommended four or more ANC visits[26].

Perception and healthcare seeking actions towards danger signs during pregnancy and post-delivery period

In this study, majority of women mentioned that danger signs during pregnancy were due to medical causes and need medical attention. They further expressed that some danger signs such as bleeding need immediate medical care. This could be because danger signs such as bleeding are visible and perceived to cause maternal deaths. Similar findings were reported in Zambia where danger signs during pregnancy were perceived to be due to medical causes and could be prevented by getting medical advice[13]. In contrast, a study by Oiyemhonlan *et al.* in Ghana reported that many women do not understand the meaning of an obstetric emergency such a danger signs and do not readily seek healthcare services for obstetric complications[31].

Moreover, our findings revealed that some women still maintain traditional beliefs about danger signs. Women, especially from rural North B district, perceived that danger signs during pregnancy, including maternal or newborn deaths were mainly caused by a devil or witchcraft. This is due to the existence of some myths and traditional concepts surrounding pregnancy within some communities. Similar to our finding, studies in Zambia and Ghana found that some women believed that danger signs during pregnancy were due to traditional causes such as witchcraft and could be prevented by using local herbs and traditional healers for treatment[13,34]. Such beliefs lead to delays in seeking medical care when danger signs occur[13,33]. Traditional beliefs and perceptions related to pregnancy and post-delivery period in the African context are common and these hinder pregnant women from seeking medical care in case of pregnancy-related complications[34-39]. Also, some socio-cultural beliefs surrounding pregnancy influence pregnant women to continue seeking help from traditional healers and use of herbs when danger signs occur during pregnancy[13].

Conclusion and Recommendations

Women's awareness of danger signs during pregnancy is adequate but inadequate; for post-delivery danger signs. Despite majority of women receiving health information on danger signs during ANC attendance, some continue consulting traditional healers for medical care and advice for danger signs resulting in delays in seeking professional medical care. Therefore, the health promotion unit of the Ministry of Health, Zanzibar should introduce health education programs on obstetric danger signs through mass media to increase awareness among women and the community at large. Moreover, healthcare providers should put more emphasis on the importance of four or more ANC visits and address all danger signs pertaining to all three phases of childbirth during health education sessions.

Furthermore, studies on the quality of antenatal care services are recommended to facilitate the designing and implementation of more effective interventions for improving antenatal care services leading to improved maternal and newborn healthcare and hence reduction of maternal and neonatal deaths.

Ethical Considerations

The study was approved by the Kilimanjaro Christian Medical University College Research and Ethical Review Committee (CRERC) with

certificate number 677. Permission to conduct the study was obtained from the Zanzibar Medical Research Council (ZAMREC). Prior to the field study, permission was also sought from the authorities including shehia leaders of the selected communities.

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Contribution of Authors

RRB originated the study and contributed to the study design, analysis and drafted the manuscript. RNM contributed to the design of the study and writing of the manuscript by commenting. BTM and BBN participated by providing constructive comments, ideas and reviews of the manuscript. RRB, RNM, BTM and BBN critically revised the draft manuscript. All authors read and approved the final manuscript.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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