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ARTICLE

# Fertility, sex, and reproductive health dynamics after Typhoon Yolanda in Tacloban North, Philippines

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ABSTRACT

This exploratory research aims to contribute to the growing body of critical literature investigating the 2013 Typhoon Yolanda disaster as a social phenomenon. Anchored on a convergent mixed methods research design, we gathered official government statistical data and primary data obtained through qualitative interviews with 20 couple-informants in two permanent resettlement sites in Tacloban North from 2016–2018. We also collected inputs from other stakeholders, such as local government workers, public physicians, and community and humanitarian workers, to explore the impacts of Yolanda on couples' sexual experiences and women's reproductive health (RH). The first section examined fertility rates in Tacloban City using demographic data, i.e., vital registry data and official population census data from the Philippine Statistics Authority (PSA) for 1990–2019. Results indicate no evidence of a "fertility spike" or peculiar and irregular fertility increase a few years after Typhoon Yolanda. The second and third sections respectively analyzed the sexual experiences of couples and women's experiences related to reproductive healthcare products and services during and after the typhoon in Tacloban North. We argue that understanding and addressing the sources of challenges related to sexual and reproductive health (SRH)—along with the other social, physical, psychological, and economic aspirations and needs of resettled residents in Tacloban North—is the first step to improve their overall standard of living. We encourage other social science researchers in and beyond Eastern Visayas to expound on the narratives and analyses offered in this exploratory paper to better document and interrogate the specific dynamics among and beyond the identified themes of couples' sexual experiences and women's RH in the communities affected by Typhoon Yolanda.

KEYWORDS

Yolanda, disaster, Tacloban, sexual and reproductive health, women, couples

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## Introduction

In 2013, Typhoon Yolanda (international name: Haiyan) made landfall in Eastern Visayas, Philippines. Yolanda, the strongest typhoon to make landfall in recorded history, damaged structures, destroyed livelihoods, and left thousands of people dead. The event registered as one of the most devastating humanitarian episodes in the Philippines and the world, with close to USD 2 trillion in estimated damages and 6,300 deaths (NDRRMC 2014). Yolanda damaged the city's health facilities by 50 percent to 90 percent. Before Typhoon Yolanda, most affected people were already suffering from poverty, unemployment, chronic hunger, inadequate public infrastructure, and an inadequate system for responding to and recovering from acute emergencies (Lim Mangada 2016). Women thus had few resources to manage health, and other responsibilities were thrust upon them during and after the disaster. Most women also relied on government institutions for reproductive healthcare. These compounded situations made them vulnerable to poor health outcomes and rendered them disproportionately affected by the disaster.

During the emergency period, local and foreign health workers focused on treating psychological trauma and physical injuries; they did not adequately address the estimated 292,000 pregnant women affected by the typhoon who needed urgent maternal and newborn health services (IRIN Asia 2013). Later on, preliminary reports from midwives in Typhoon Yolanda-hit areas indicated that there were noticeably more teenagers who became pregnant after the typhoon. In the *Haiyan gender snapshot* published by OXFAM, the World Health Organization reported 220,000 pregnancies in typhoon-affected areas, of which 12 percent or 26,400 were adolescent pregnancies (Novales 2014). Since the typhoon, there were over 15,000 babies born in typhoon-affected areas every month (2014).

Typhoon Yolanda can neither be seen as a public health nor an economic issue alone in this context. To obtain a better view of the prevailing conditions in Typhoon Yolanda-affected areas, its web of complexities requires contributions from across various disciplines, including the social sciences. This research situates within social science research on disasters to understand the links between typhoon Yolanda as a disaster, vis-à-vis its impacts on fertility, sexual experiences of couples, and RH of women after a large-scale disaster induced by a natural hazard. This paper looks to a segment of a population that had been seriously affected and continues to be impacted by Yolanda's post-disaster outcomes.

Coming from a frequently devastated country by climate-induced hazards, there has been a consistent interest in Filipino women and understanding the conditions they experience in critical issues, such as attaining sexual and reproductive health (SRH) vital to their holistic well-being. While studies have been made about the impacts of Typhoon Yolanda and the responses of different stakeholders, including those focused on the effects of gender norms on young Filipino women informal settlers (Espina and Canoy forthcoming), widows and survivors (Lim Mangada 2016; Mangada and Su 2019; Su and Mangada 2018,

2020; Tanyag 2018; Valerio 2014), Indigenous peoples (Cuaton and Su 2020), handicraft weaving and enterprising communities (Cuaton 2019a; 2019b), and the politics of disaster response (Blanco 2015; Ensor et al. forthcoming; Salazar 2015; Tuhkanen et al. 2018; Yee 2018), little is known on how Typhoon Yolanda affected fertility rates in Tacloban City as well as the sexual activities of couples and women's access to reproductive healthcare products and services post-disaster. We seek to address this research gap by empirically exploring fertility in Tacloban City after Typhoon Yolanda and by documenting and critically analyzing the sexual experiences of couples, along with the post-disaster RH dynamics of women in select permanent resettlement sites in Tacloban North, to understand the disaster as a social phenomenon.

## Post-disaster reproductive health and fertility outcomes

Global warming brought about by climate change exacerbates extreme weather events, and its effects worsen peoples' vulnerabilities and negatively impact the communities (Cuaton and Su 2020). The latest data from the *Human cost of disaster* indicate that over 7,300 climate-induced natural hazards had been recorded over the last twenty years, affecting over four billion people worldwide (UNDRR and CRED 2020). Highlighting health in disaster risk reduction and management (DRRM) and post-disaster planning supports key international frameworks, particularly Goal 3 of the Sustainable Development Goals (UNDESA 2015) and the comprehensive *Sendai framework for disaster risk reduction* (UNDRR 2015).

Health is incomplete without SRH. However, even though intergovernmental organizations recognize SRH as a human right (UNFPA 2014), it is poorly prioritized in health planning in emergency responses and post-disaster recovery and development programs (Onyango et al. 2013). In a scoping review, compiled evidence from the extant literature on SRH in post-disaster settings suggests an enduring gap between SRH-related recommendations in published international guidelines from the WHO, UNICEF, UNAIDS, and UNDRR vis-à-vis their implementation in times of disasters or crises (Stephens and Lassa 2020). Jacqueline Stephens and Jonatan Lassa (2020) also reported that the common post-disaster RH-related issues are increased gynecological conditions. Significant examples include the amplified gonorrhea incidence among high school students in New Orleans, Louisiana, after Hurricane Katrina in 2005 (Nsuami et al. 2009), the increase in pelvic inflammatory diseases among Chinese women after the 2008 Wenchuan earthquake (Liu et al. 2010), reduced condom usage among women from a rural community in Lesotho that suffered from severe drought from 2016–2017 (Low et al. 2019), and difficulties of young women in accessing contraception after Florida's 2008 Hurricane Ike (Leyser-Whalen, Rahman, and Berenson 2011). Other examples include low sexual health knowledge, like the case of sex worker refugee women in Kampala, Uganda (Rosenberg and Bakomeza 2017) and

internally displaced peoples residing in southern Belize after Hurricane Mitch in 1998 (Westhoff et al. 2008). Finally, these also include the increased vulnerability of Persons Living with HIV/ (PLWHIV) like the flood victims in Namibia (Anthonj et al. 2015) and central Thailand (Khawcharoenporn et al. 2013).

Changes in variables, such as the fertility rate, marriage rate, and secondary sex ratio (SSR, or the number of male births per 100 female births), were also observed in disaster-stricken communities. For instance, Catherine Cohan and Steve Cole (2002) reported increased fertility and marriage rates after Hurricane Hugo in South Carolina, USA. Similar reports emerged after the 2004 Indian Ocean Tsunami in Indonesia, where Jenna Nobles, Elizabeth Frankenberg, and Duncan Thomas (2015) provided evidence of increased fertility between 2006 and 2009 in areas affected by the tsunami. Joseph Rodgers, Craig St. John, and Ronnie Coleman (2005) also found a significant rise in the number of births from 1990–1999 in six bomb-affected communities in Oklahoma, USA, compared to its unaffected counterparts. Moreover, Van Tong, Marianne Zotti, and Jason Hsia (2011) of the U.S. Centers for Disease Control and Prevention used birth certificates to compare pre- and post-disaster fertility rates in flood-affected populations in the 1997 Red River Flood in North Minnesota, North Dakota, and Southern Manitoba, USA. Brady Hamilton and his colleagues (2009) also used birth certificate files to examine the changes in fertility rates after Hurricane Katrina. They found a 19 percent decrease in fertility rates in Katrina-affected areas compared to rates before the hurricane. In Asia, particularly In Japan, the number of SSR and births and marriages decreased after the 2011 East Japan Earthquake irrespective of locality (Hamamatsu et al. 2014). Variations in post-disaster fertility rates have also been documented following high-mortality earthquakes in Turkey, India, and Pakistan (Finlay 2009; Nobles et al. 2015).

Considering the findings mentioned above, what could be the reasons for the fertility changes in disaster-stricken communities? Several reasons have been proposed to explain the changes in demographic behaviors observed after large-scale disasters. In terms of decreased fertility, impaired reproductive outcomes may be triggered by stress-inducing events (e.g., Typhoon Yolanda). They may be more prevalent in women susceptible to a physiological stress over-response (Nakamura, Sheps, and Arck 2008). Regarding the increases of fertility and marriage rates, one hypothesis states that people are motivated to produce more children to replace the lost workforce after a disaster (Finlay 2009). Cohan and Cole (2002) offered a more psychological explanation. They stated that the increased fertility and marriage rates, as observed after Hurricane Hugo, could be explained by John Bowlby's attachment theory. This theory argues that humans' attachment to family members or lovers intensifies in highly stressful conditions, as evidenced by their increased efforts to reproduce.

## Materials and methods

This exploratory research employed a convergent mixed methods research design (Creswell and Creswell 2018). The first part is a quantitative analysis of fertility in Tacloban City using demographic data, including vital registry data and official population census data from the Philippine Statistics Authority (PSA) for 1990–2019. We collated and presented the historical trends (1990–2013) of fertility using the vital registry data on live births and the trends after Typhoon Yolanda (2014–2019). To triangulate the data, we counter-checked the city's fertility trend using the population census data for 1990, 1995, 2000, 2010, and 2015. The fertility information that we used in this paper was limited only to the number of live births. It was difficult to calculate fertility rates at the city level due to insufficient, good-quality data. In addition, we excluded births from mothers who emigrated from Tacloban after the typhoon. As social scientists specializing in political science and disaster studies, we relied on the objective suggestions of our peers who are working as demographers and population scientist in collating and analyzing the demographic data we used for this study.

The second part is a qualitative analysis of the sexual experiences of couples and women's experiences related to RH products and services during and after typhoon Yolanda in two permanent resettlement sites in Tacloban North. We used the phenomenological research design to analyze and understand the Waraynon couples' and women's experiences in their everyday world (Christensen, Johnson, and Turner 2011) after the typhoon. Phenomenological research differs from other modes of qualitative inquiry because it attempts to understand the essence of a phenomenon from the perspectives of informants who have experienced it (Christensen, Johnson, and Turner 2011; Teguihanon and Cuaton 2020). The focus, then, of this research is not on the couple-informants themselves or the world they inhabit but on the meaning or essence of the interrelationship between the two (Merriam and Tisdell 2015). This method allowed us to gain insights into the impacts of the typhoon based on the informants' own experiences, beliefs, and understanding and how they interpret their social world, particularly their experiences related to reproductive and sexual health during and after Yolanda. Finally, we decided to engage couples in a joint reflection in teasing out nuances in the interview data material (Bjørnholt and Farstad 2014). This method further provided our couple-informants more control over the common story they are a part of. It minimized problems related to anonymity and consent among interviewees, as both are present and what is being said is shared in a "public" setting (Bjørnholt and Farstad 2014).

We conducted this study in Tacloban City, the regional capital of Eastern Visayas, and gathered primary and secondary data from October 2016 to October 2018. We, the authors, were survivors of Typhoon Yolanda ourselves. We are residents of Tacloban City working in the academe and with research interests in SRH and

post-disaster studies. We used theoretical sampling to identify key informants and selected the sample based on available information and its relevance to the purpose of the research (Groenewald 2004). The purpose of theoretical sampling is to collect data from informants, places, and situations that will maximize opportunities to develop concepts in terms of their properties and dimensions, uncover variations, and identify relationships between concepts (Corbin and Strauss 2015). In other words, we chose couple-informants who have had experiences relating to the phenomenon we wanted to investigate (Kruger and Stones 1981). Our inclusion criteria were as follows: couples should be Typhoon Yolanda survivors, and the wife should be pregnant or have recently delivered babies at the time of data gathering.

We focused on two relocation sites in Tacloban North, namely, the GMA Kapuso Village and the North Hill Arbours Village in Barangay 106, Sto. Niño, Tacloban City (see Figure 1). The resettled residents in these communities came from two different barangays (Barangays Magallanes and San Jose), which Typhoon Yolanda destroyed. They live in Tacloban North, the location's generic name of the 31 Yolanda resettlement sites. The relocation sites in Tacloban North are home to an estimated 20,000 households or around 40 percent of the 50,547 total households in Tacloban City (Philippine Statistics Authority 2015).

The two villages selected for the current study have an estimated 2,485 households. We chose North Hill Arbours village because it was the biggest government-constructed housing site in Tacloban North. On the other hand, we also included the GMA Kapuso village because it was the first privately funded and constructed housing site where Yolanda survivors relocated. With the help of the Homeowners' Association officers, we directly approached potential informants and invited them to participate in the study. These informants also helped identify other potential informants in their networks.

We secured verbal consent from a total of 20 couple-informants who voluntarily participated in this study. From each village, we selected ten couples with ages ranging from 18–30 years. The female informants were all unemployed; most were high school or college undergraduates, while some still lived with their parents. The male informants were fisherfolks, meat vendors, *pedicabs* or motorcycle drivers, and other informal workers. We used a guide questionnaire to ask them about their experiences during and after Typhoon Yolanda concerning their (a) sex life and their (b) personal and c) institutional availability, access, and control to reproductive healthcare products and services in the relocation sites. To triangulate the primary data, we interviewed three barangay officials, three Tacloban City local government officials, three obstetrician-gynecologists in the regional hospital, and four homeowners' association officers (two from each village).

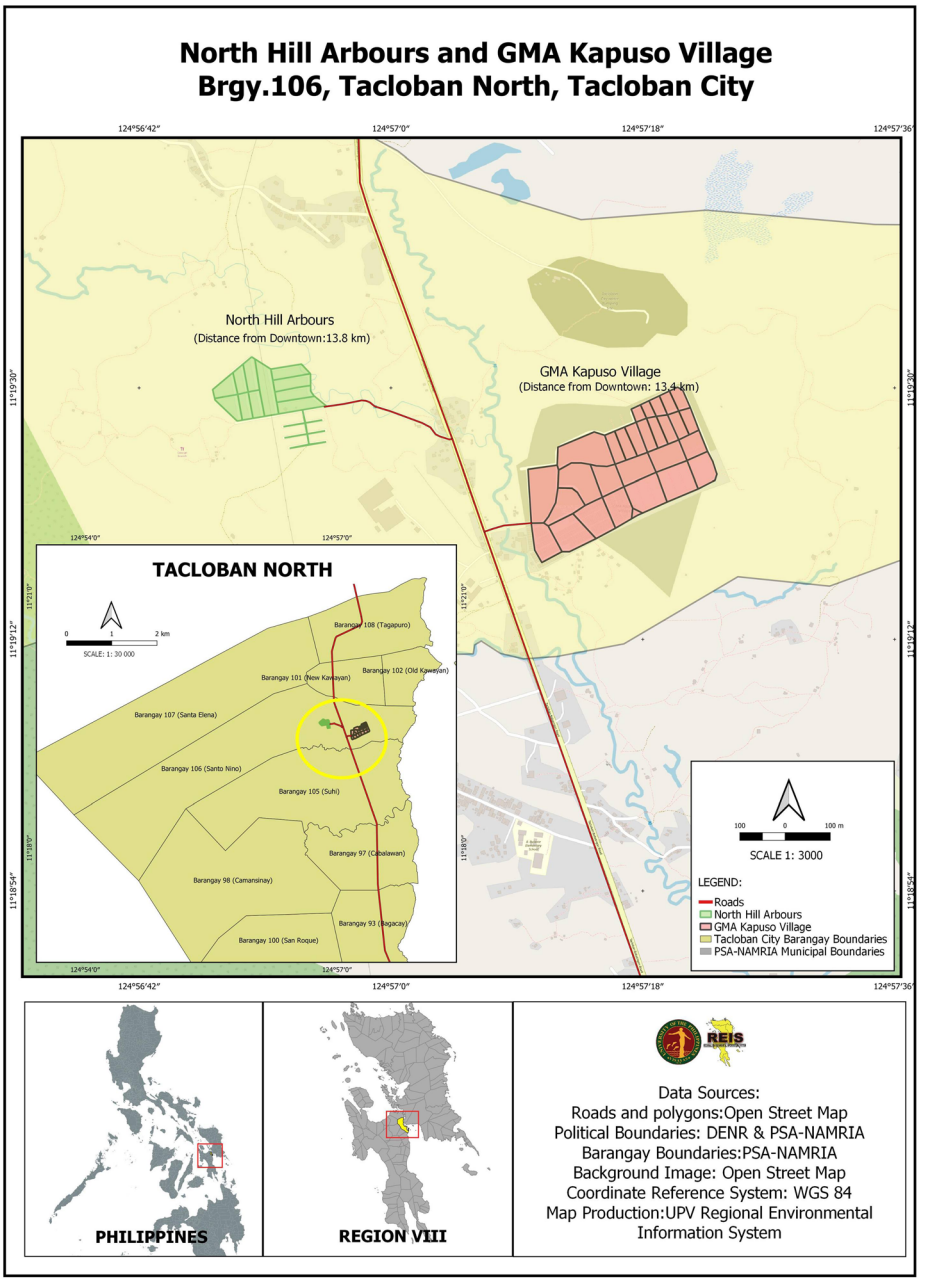


Figure 1. Study sites at the North Hill Arbours and GMA Kapuso villages in Barangay 106, Tacloban North, Tacloban City, Leyte, Philippines.

We hired a research assistant who helped us in the 30-minute interviews. We also noted our informants' non-verbal reactions and observed behaviors and reconciled them with other field notes and recorded data. We transcribed the audiotaped data and translated the transcripts from *Waray-Waray*, the local dialect, into English.

We checked the transcripts several times against the voice recordings to ensure data accuracy. The initial notes were also summarized to identify critical points to determine thematic discussions and their interrelationships to provide nuance to this study. We excluded the names of informants and their children and families to protect their privacy.

## Fertility statuses in Tacloban City pre- and post-Yolanda

The literature on disasters suggests sudden fertility increase following disasters, as in Hurricane Hugo in South Carolina, USA (Cohan and Cole 2002) and the Indian Ocean Tsunami in Indonesia (Nobles et al. 2015). However, the data obtained in the current paper suggest that such is not the case in Tacloban City after Typhoon Yolanda. The historical fertility trend shown in Figure 2 indicates that there is a consistently increasing pattern of live births in the city from 1990–2012. After Yolanda (2014–2019), the fertility trend indicates no evidence of a "fertility spike."

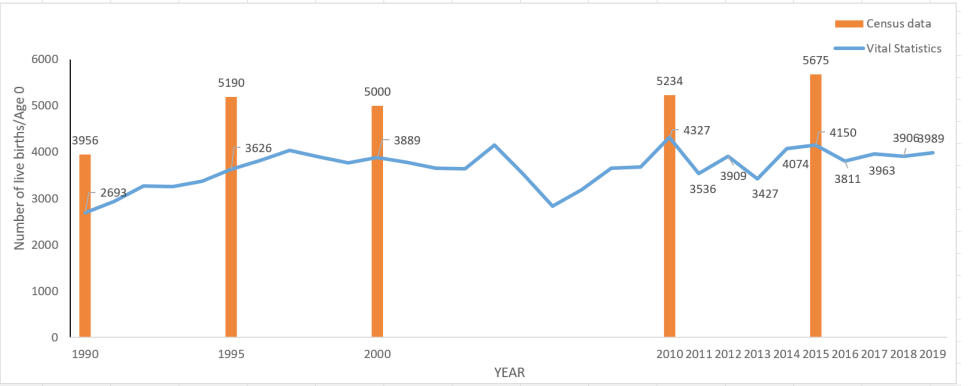


Figure 2. Vital Registry Data and Population Census on Births in Tacloban City from 1990-2019.
Source: Philippines Statistic Authority (1990–2019).

This paper uses the term "fertility spike" to refer to peculiar and irregular fertility increase a few years after a disaster. Moreover, there is an apparent underreporting of live births in the Vital Registry data, which is evident when validated with the official population census. The underreporting of childbirth may be due to poor data management and a weak civil registration and vital statistics system (Mikkelsen et al. 2015). Given the increasing historical fertility trend before Typhoon Yolanda and the increasing fertility trend several years after this disaster, using both data from the vital registry and population census, we argue that there is no straightforward evidence of a sudden increase in births after the typhoon in Tacloban City.

The highest number of births in the vital registry after Typhoon Yolanda in 2015 was a total of 4,150—a more petite figure compared to the highest number of births before the typhoon, which was at 4,327 in 2010. While there was a

short-term percentage increase in births in the first two years after the typhoon, as shown in Table 1, this represented a minimal 18.8 percent annual increase in 2014 and 1.8 percent in 2015. This percentage increase in births from 2013 to 2014 (18.8 percent) is just slightly higher compared to the highest annual increase in births pre-Yolanda, which was at 17.3 percent from 2009–2010. In addition, after 2015, the number of births did not follow a consistent pattern and, instead, exhibited alternating declining and increasing patterns: –8.1 percent in 2016, 3.9 percent in 2017, –1.4 percent in 2018, and 2.1 percent in 2019.

**Table 1. Annual percentage change of births in Tacloban City from 1990–2019 based on the PSA Vital Registry Data**

| Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|
| No. of live births | 2693 | 2939 | 3275 | 3257 | 3379 | 3626 | 3824 | 4037 | 3902 | 3766 |
| Annual change in percentage | | 9.13 | 11.43 | -0.55 | 3.75 | 7.31 | 5.46 | 5.57 | -3.34 | -3.49 |
| | **2000** | **2001** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** | **2008** | **2009** |
| | 3889 | 3790 | 3650 | 3638 | 4159 | 3531 | 2833 | 3200 | 3657 | 3686 |
| | 3.27 | -2.55 | -3.69 | -0.33 | 14.32 | -15.10 | -19.77 | 12.95 | 14.28 | 0.79 |
| | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** |
| | 4327 | 3536 | 3909 | 3427 | 4074 | 4150 | 3811 | 3963 | 3906 | 3989 |
| | 17.39 | -18.28 | 10.55 | -12.33 | 18.88 | 1.87 | -8.17 | 3.99 | -1.44 | 2.12 |

Source: Philippines Statistic Authority (1990–2019).

## Sexual activities in temporary bunkhouses (2014–2015)

Typhoon Yolanda severely damaged the communities of informal settlers in the low-lying coastal areas of Tacloban City (Maly et al. forthcoming). Thus, the Tacloban Recovery and Rehabilitation Plan (TRSDG) (2014) focused on providing new houses in resettlement areas in the northern part of the city for over 14,000 households from these coastal communities or barangays. In the ongoing relocation process, couples experienced multiple stages of temporary and permanent housing and changing conditions in the resettlement areas in Tacloban North. This section explores and discusses couples' sexual and intimate activities in temporary housing units from 2014–2015 and their permanent resettlement houses from 2016 onwards. This discussion aims to provide a perspective on the conditions faced by survivor couples brought about by the impacts of a disaster.

In the first two years after Yolanda, survivors with destroyed houses moved to various emergency and temporary housing situations. These include tents and wooden bunkhouses near the city center and lightweight bamboo houses constructed by non-governmental organizations (NGOs) near future permanent

resettlement sites in Tacloban North (Iuchi and Maly 2017). During these transitions, informants shared immense changes in their livelihoods and social environments and private lives, particularly those related to their sexual activities. Couples who have been together even before the typhoon shared minimal to no sexual intercourse in the emergency and temporary housing units. On top of the compounding pressure to work and provide food for their family, couples did not have any privacy due to the limited space in emergency tent houses where families with over five children shared one tent per household. Those who were in bunkhouses (row or separate houses) said that it was also challenging to have sexual intercourse due to the thin walls separating one housing unit from another, adding that it was morally unacceptable to do it in such situations. As one pair of couple-informants shared:

> Talagsa nala kami mag-sex han 2014. Dire parehos han dati. An 2014 damo naman gud an trabahuon labi na nga makuri an amon kabutang. Pero kun nakakalugar ngan kun may oras, dida na kami nagbubuhat. Mga duha nala kada bulan, danay makaka-usa la.
>
> (We seldom had sex in 2014. Unlike before [Typhoon Yolanda]. In 2014, we had more work to focus on, and life was harder then. If we ever found time, then we had sex. We only did it twice, at most, in a month and sometimes only once.)

Another pair of couple-informants stated:

> Nakadto kami ha bunkhouse katapos han bagyo. Dire man pwede mag-sex kay mapaso ngan waray kwarto. Tapos an kabataan aada, dire man ito puydi. Waray privacy. Tak mayayakan, nag-undang anay an sex kay nag-Yolanda. Alang paman ada kamo ha evacuation center magbubuhat kamo hito damo't tawo. Makaarawod kaya.
>
> (We moved into one of the bunkhouses after Yolanda. Having sex there was not an option, as it was too warm inside the row houses, and there was no separate room for couples. Our children were also with us all the time, so having sexual intercourse was improper, as there was no privacy. I can say that there was a sudden stop in our sexual intercourse because of Typhoon Yolanda. It was inappropriate to do it [sex] in the evacuation centers [bunkhouses], where plenty of people were. It was embarrassing.)

Work stress and exhaustion was another factor in couples' minimal sexual intercourse. This factor, especially in a post-disaster setting, can negatively impact an individual by triggering overt psychological and physiological distress. Subsequently, work stress and exhaustion can make individuals more irritable, excessively anxious, unhappy, and depressed (Caltabiano, Byrne, and Sarafino

2008). In addition to its effects on the individuals experiencing it, it may also affect other people around the individual, including their partner (Edwards and Rothbard 2010). Job stress is more likely to elicit couple interactions marked with increased expressions of negative emotions leading to sexual dysfunction and decreased frequency of sexual activity (Haines, Marchand, and Harvey 2006). As shared by a pair of couple-informants:

> Nakakaduha nala kada bulan kami nagse-sex han 2014-2015. Stressed naman hit trabaho, kapoy na. Dire na ngan haros asihun. Mas iba na talaga kahuman han Yolanda. Dire na parehos hadto na aktibo pa.
>
> (We only had sex twice at most per month from 2014–2015. We were too stressed and exhausted from our work that we barely noticed each other sexually. There was a significant difference in our sexual lives after Typhoon Yolanda. We were not sexually active, unlike before Yolanda happened.)

All our 20 couple-informants agreed that men always initiated sex with their partners, as observed in the first two years after Yolanda. While some women said that their sexual libido decreased due to the stress they experienced, along with the increased household activities they managed after the typhoon, our male informants noted that sex was their way of coping. The female informants generally agreed with this observation. One male informant echoed the general statement of all male informants:

> Nabuhat mag-asawa kami agi tungod hit kakapoy, stress ngan problema ha trabaho pati hit amon kabutang yana.
>
> (We have sex with our partners to cope with the exhaustion, stress and problems from work, and difficult family living conditions.)

In comparison, one female informant shared the general observation of all our female informants regarding who initiated sex, especially during the first two years post-Yolanda:

> Bagan an lalaki gud talaga an may inaabat. Amo gud man biskan ha kadam-an didi ha amon nga iristorya na an lalaki an makusog gud talaga an ira panhunahuna ngan ha pagbuhat hit sex.
>
> (It is the men who have the urge [to have sexual intercourse]. Based on the general observations of women here in our community, our husbands have the general wanting or need to have sex.)

## Sexual activities in Tacloban North (2016–onwards)

Couples' sexual activities became more frequent from 2016 onwards once they transferred and adjusted to their living conditions in the permanent resettlement sites in Tacloban North. Our couple-informants who currently reside in permanent resettlement houses in the GMA Kapuso and North Hill Arbour Villages (see Photo 1) said that the bigger space and the option to build separate rooms or partitions inside their houses contributed to the increased frequency of their sexual activities. Many problems hound families' transition from temporary housing to permanent resettlement houses, such as having adequate basic facilities (e.g., clean water, proper toilets, electricity, and roads) and public services (e.g., health centers and schools). Nevertheless, people who moved into permanent resettlement houses perceived having a bigger space as a massive factor in improving their sex life by having a safe space where intimate couple activities can be done appropriately. However, with the transfer from temporary to permanent houses comes the general community observation that new couples emerged, mostly young ones. Thus, the population of pregnant women mainly consisted of youths.

Photo 1. Row houses in North Hill Arbours Village, Tacloban City, Philippines.
Photo taken by the authors in 2018.

As one informant shared:

> Aw, iba na pagtikang han 2016, labi na yana nga 2018. Baga regular na mag-sex kay medyo naka-adjust na. Importante may balay, may kwarto. It mga bag-o na tubo it damo na burod. Kitaa daw dinhi ha resettlement damo it mga babies nga it nanay mga teenagers hadto han Yolanda.

([Our] sex life improved starting in 2016, and more so in 2018. Couples regularly have sex because we have already adjusted to our situations here at the permanent resettlement site. However, we observed that most of the pregnant women here at the resettlement site are teenagers. You see a lot of babies here delivered by young mothers who were teenagers when Yolanda happened.)

## Insights on Post-Yolanda reproductive healthcare products and services

Based on the accounts of our couple-informants, post-Yolanda reproductive healthcare products were dismal, while services were absent. In the immediate aftermath of Typhoon Yolanda, couples' access to contraceptives was restricted due to the destruction of barangay health care units/rural health units, the permanent closure or late re-operation of destroyed local pharmacies, and the long travel to Yolanda-unaffected municipalities where RH products, particularly artificial contraceptives were purchasable. As stated by a pair of couple-informants:

> Waray anay ako pakagamit pills kahuman Yolanda kay washout man. Amo nagburod ak. Pero kahuman ko pag-anak, binalik ako paggamit. Napalit la ako ha botika.
>
> (I stopped using pills after Yolanda because the stores were washed out [destroyed]. I got pregnant because I stopped using contraceptive pills. However, I used it again after my baby's delivery. I usually buy at the drugstore.)

Interestingly, despite over 300 humanitarian and development organizations that responded in post-Yolanda emergency and rehabilitation stages, survivors failed to receive adequate RH products and services. The general thrusts of these humanitarian organizations and emergency responders were on livelihood, education, psychosocial support, and shelter—none had projects related to RH. One of our key informants who worked for a humanitarian organization said that:

> Waray kami reproductive health assistance, food package la ngan shelter.
>
> (We do not have reproductive health assistance, only shelter, and livelihood.)

A pair of couple-informants echoed the collective response of other informants:

> Mayda kami gin atenderan na livelihood training, an iba DRR orientation tikang han mga INGOs… pero waray parte reproductive health.
>
> (We attended some training on livelihood and DRR [Disaster Risk Reduction] orientation [seminars] from international non-government organizations, but none on anything related to reproductive health.)

Furthermore, the limited health infrastructure and services affected the distribution and access of artificial contraceptives and the safe delivery of babies, the regular prenatal and postnatal services for babies, and the post-partum services for mothers. While the local Suhi Health Care Center was built in October 2015, its range of services was limited, and it could not cope with the high demand for mothers from Tacloban North. In this case, the local health center would refer them to the Eastern Visayas Regional Medical Center (EVRMC).

Based on the accounts of our physician informants (OB-gynecologists), they have observed that many pregnant mothers residing in Tacloban North belong to the young age group (17–22 years old). This observation reflects the comments from our couple-informants, who said that many pregnant women in resettlement sites are young mothers. One of our key informants, who was also a local health care provider in Tacloban North, shared the following:

> Nag-stop man ito an birthing center. Pagtindog yana han bag-o na Suhi Health Care Center han October 2015, baga hin di ak maaram kun increase ito basta damo an nangangadto na mga burod. Mayda gin-rerefer namon ngadi ha EVRMC ngan Tacloban City Hospital kay diri namon kaya. So far, an amon gin-refer, more than 100, bangin ngani mag 200 na.
>
> (The local birthing center stopped operating for a while [after Yolanda]. When the new Suhi Health Care Center was built last October 2015, many pregnant women came. There were women whom we referred to EVRMC and the Tacloban City Hospital because of overcapacity. So far, we have referred more than 100 [mothers] or even around 200.)

Meanwhile, one public OB-gynecologist from the regional hospital shared the following observation:

> It akon na-obserbahan tikang han 2016 ngada 2018, an mga pasyente na burod approximately less than 25 years old. Damo yana it mga medyo bata na nanganganak. Pero before hini na mga tuig, diri manggud kabataan an nag-aanak. An mga ginpanganak han 2017 and 2018 resulta han mga bag-o na nag asawa ngan batan-on nga mga nanay. Huna-hunaa, amo ini hira an mga teenager han pag Yolanda. Young population kasi kita dinhi.
>
> (I observed that, from 2016–2018, most pregnant patients belonged to the 25 and below age group. Before 2016, expectant mothers were not that young. The 2017 and 2018 births came from newly formed couples and young mothers who were teenagers before Yolanda. We have a young population here.)

Key informants from the Tacloban LGU also shared that the government institution only relied on limited contraceptive supplies from donors or the national government through the Department of Health (DOH). While the LGUs are mandated to allocate funding and provide RH products and services to their constituents, its implementation may be highly contested and politically distorted. Such is the case of Tacloban City, where the local chief executive's personal religious beliefs as a devout born-again Christian allegedly affect the proper and adequate financial allocation to support RH products and services. As one resettled female informant shared:

> Dinhi ha Tacloban mapalit ka gud kay waray libre na contraceptives (artificial). Maiha na ako nga naukoy dinhi ha Tacloban. Nahatag la it hira kun mayda supply ha DOH kay it LGU waray nira pondo para contraceptives.
>
> (Here in Tacloban, you have to buy them because [artificial] contraceptives are not for free. I have lived here for so long and have consistently observed that they only give contraceptives if there is a supply from the DOH [Department of Health] because the [Tacloban] LGU does not allocate funds for it.)

According to one key informant from the LGU:

> Waray man an siyudad manhatag contraceptives. Waray sugad hiton na bulig. Vitamins la para daw maging maupay it lawas.
>
> (The city government did not give contraceptives. No such help [RH-related] was given. Only vitamins to keep [the constituents] physically healthy.)

Another LGU informant shared the following insight:

> Born-Again Christian hi Mayor [Alfred Romualdez]. Dire ito hiya na-support hit mga contraceptives.
>
> (Mayor [Alfred Romualdez] is a born-again Christian. He does not support the use of contraceptives.)

In post-disaster settings, people expect government institutions to perform and deliver life-saving aid and programs to alleviate the suffering of affected communities, including problems related to SRH. Leach, Mearns, and Scoones (1999) emphasized the importance of institutions in mediating the vulnerability of disaster-affected communities. They argued that such institutions shape access to resources, thereby enabling people to obtain, transform, and exchange their "endowments" in ways that translate into contributions to human well-being. Agrawal (2008), in a report for the World Bank, highlighted institutions' influence

on vulnerability, particularly in how they structure impacts, mediate between collective and individual responses, and govern access to resources.

The overarching experiences, observations, and remarks from our key couple-informants and individual participants revealed that the provision of RH products and services in Tacloban City remains a challenge both in the pre- and post-disaster lives of members of vulnerable communities. Post-disaster life is complex; hence, humanitarian and government post-disaster interventions must be interdisciplinary and should include the active voices of the disempowered. However, in the case of Typhoon Yolanda, we argue that different actors and institutions have yet to learn from previous hazards to integrate RH products and services into existing pre-disaster development programs and post-disaster response activities in Tacloban.

## Conclusion

More than seven years after the onslaught of Typhoon Yolanda, this paper explored the effects of the disaster on the fertility of a selected group of Tacloban City residents and provided critical observations from various stakeholders on the impacts of the typhoon on couples' sexual activities and women's RH-related situations in permanent resettlement housing sites in Tacloban North. While the official government-released vital statistics and population census data presented in this paper reveal that there is no "fertility spike" or sudden increase of fertility—mainly live births—in the years after Typhoon Yolanda, we argue that close attention is needed to understand and provide programs to help vulnerable couples and women who resettled in Tacloban North attain holistic SRH experiences. Furthermore, we support other public health researchers and practitioners in advocating for greater attention to the reproductive needs of disaster survivors (Ellington et al. 2013; Martine and Guzman 2002; Nour 2011).

While short and exploratory, this paper makes an empirical contribution to several public health studies which reported that women faced increased difficulty in obtaining contraception post-disaster, as in the cases of women who survived the Indian Ocean Tsunami in Indonesia (Hapsari et al. 2009) and after Hurricanes Ike and Katrina in the US Gulf Coast (Hapsari et al. 2009; Kissinger et al. 2007; Leyser-Whalen, Rahman, and Berenson 2011). Women's RH may be negatively affected by highly hazardous events if their reproductive healthcare access and modern contraception are diminished (Ellington et al. 2013; Martine and Guzman 2002; Nour 2011). Reduced access to contraception and healthcare could result from the destruction of healthcare services or from increased difficulty in gaining access to services because of destroyed infrastructure, diminished economic resources, and low institutional and fiscal support.

## Recommendations

We encourage the LGU of Tacloban City, other municipal/ city and provincial government units of the country, and other relevant stakeholders from the national government and NGOs to prioritize SRH issues and needs in disaster preparedness plans and contingency plans for health. Particular attention should be given to Tacloban North residents, where birth deliveries show a steadily increasing pattern. If this situation continues, the rising number of residents in resettlement sites may affect the overall post-disaster recovery of the city. In turn, this would mean that more budget and resources for public and social services must be delivered and established for these resettled residents to endure future calamities and improve their overall welfare. Furthermore, local policymakers need to pay more attention to young women of reproductive age and design more finely grained policies and projects on SRH in the context of hazards and disasters.

Understanding and addressing the reasons or sources of SRH-related challenges, alongside other social, physical, psychological, and economic aspirations and needs of resettled residents in Tacloban North, will help enhance their resilience and improve their overall living standards. Special attention should be given to young men and women who are of reproductive age. They should also be recognized as equal actors and stakeholders in disaster recovery efforts and the achievement of better well-being among residents.

Furthermore, LGUs, such as the Tacloban City government, can build a robust post-disaster recovery plan by allocating more fiscal resources to SRH education and other services. Providing reproductive education to families, both long-term and newly formed, and young people of reproductive age is an investment to ensure long-term recovery and better development. When the community and relevant authorities and policymakers fully understand the demographic consequences of disasters, only then can SRH cease to be poorly understood/underestimated in intelligent decision-making in disaster preparedness systems and sustainable development.

We recommend that demographers and population scientists conduct related studies comparing the similarities and differences of fertility dynamics among towns impacted by Typhoon Haiyan in and beyond the region. These studies could inform the public and policymakers of super typhoon's general and specific demographic-related consequences and hopefully create policies and programs addressing these consequences. We also encourage other social science researchers in and beyond Eastern Visayas to expound on the narratives and analyses offered in this exploratory paper to better document and investigate the specific dynamics among and beyond the identified themes of couples' sexual experiences and women's RH in Typhoon Yolanda-affected communities. Other factors and conditions that could be further explored, articulated, and analyzed are the impacts of displacement, poverty, different hazards, and the influence of

Catholic religious leaders on the SRH dynamics of resettled residents in Tacloban North. Critical feminist researchers and scholars are also encouraged to advance theoretical insights on how we can interpret and critically assess references to SRH in relation to promoting women's rights and gender equality in disaster-stricken communities and the overall sustainable development planning of LGUS such as that in Tacloban.

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