RESEARCH ARTICLE

FERTILITY DESIRE AND ASSOCIATED FACTORS AMONG HIV/AIDS WOMEN WITH ANTIRETROVIRAL THERAPY IN YOGYAKARTA, INDONESIA

Dwi Kartika Rukmi, M.Kep.,Sp.Kep.MB[1*]**; Ike Wuri Winahyu Sari,** M.Kep[1] and **Afi Lutfiyati,** M.Kep[1]

[1] Nursing Department, Jenderal Achmad Yani Yogyakarta University

Abstract

Women living with HIV/AIDS (WLHA) in Indonesia face a lot of stigma in their communities, even in healthcare settings. Because of this, their desire to have biological children is suppressed. However, some positive changes to the desire to have children may be apparent with the introduction of antiretroviral therapy (ART). Fertility desires may also have implications for unprotected sexual intercourse. To date, there is limited knowledge about the fertility desires of WLHA receiving HIV care in Yogyakarta, Indonesia. Hence, the present study explores the extent of this fertility desire and its associated factors among WLHA in Yogyakarta, Indonesia. Using a cross-sectional quantitative research design, 303 WLHA who are receiving ART, were obtained via convenience sampling in five districts in Yogyakarta between March and August 2019. WLHA with a hysterectomy and permanent contraception were excluded. Data were collected using a questionnaire and analyzed using descriptives, chi-square, and logistic regression. Just over half of the WLHA (50.8%) wanted to have at least one biological child without gender preferences. Bivariate correlations showed that younger age, formal employment, and not having a living biological child correlated with greater fertility desire ($p<.05$). A logistic regression further indicated that age (35 years or younger)($p<.001$; AOR: 3.33; 95% CI: 2.00 to 5.53) and being childless ($p<.001$; AOR:.13; 95%CI:.52 to .33) were the most influential factors associated with the fertility desire among WLHA in Yogyakarta. We found that the WLHA, who were receiving ART in Yogyakarta, wanted to have their biological children. Since fertility concerns are an integral part of HIV patients' care, health workers can help the groups of WLHA who desire to have biological children make the right reproductive decisions by letting them know the benefits and risks of childbirth and measures to prevent HIV from spreading.

Keywords: *HIV, women, ART, fertility desire*

Introduction

The fertility desire and HIV/AIDS have a complex relationship. The complex connection occurs because the natural relationship between fertility desire and HIV/AIDS is a cause and effect relationship, in which HIV/AIDS affects the fertility desire and its output. The fertility desire itself could lead to an increase in the risk and spread of HIV/AIDS.

Before the era of antiretroviral therapy (ART), the desire of women living with HIV/AIDS (WLHA) to have biological children, as a means to continue their lineage, experienced a decrease because of stigmatization and pressure (Berhan & Berhan, 2013). The influence of the desire for the progeny of those women was the result of both negative and positive effects of HIV/AIDS, which can be varied, not only at the individual level but also at a broader level –'(Ramos De Souza, Do Amaral, Alves Guimarães, Rezza, & Brunini, 2017).

The fertility desire was pictured as hampering the physiological conditions and various things related to the fertility desire of the WLHA, namely the possibility of a miscarriage, premature birth, co-infection with other sexually transmitted diseases, menstrual dysfunction, weight loss that led to amenorrhea, a minimal sexual

* Corresponding author email: kartikarukmi@gmail.com; phone: +62-81286140099

relationship because of chronic illness, and the loss of one's partner at a young age. Nearly all of these points were directed towards decreasing fertility (Fabiani, Nattabi, Ayella, Ogwang, & Declich, 2006). This eventually led to the existing environment, so the regulations became more focused on the risk that might occur because of virus transmission, whether vertically or horizontally, rather than on those women's desire to have children –'(Ramos De Souza et al., 2017).

After the ART era, which was introduced in 1996 and allowed greater access to antiretroviral therapy, giving birth was considered more often by WLHA. This happened because the fear of HIV/AIDS's effects on fertility, including the transmission of HIV from mother to child and the concern about the possibility of having a shorter life span, decreased (Berhan & Berhan, 2013; Finocchario-Kessler et al., 2010).

Longer life expectancy and the rate of mother to child HIV transmission (MTCT), which only accounts for 1 to 2% of cases as a result of the ART, increased the fertility desire in the WLHA (Behboodi-Moghadam, Nikbakht-Nasrabadi, Ebadi, EsmaelzadehSaeieh, & Mohraz, 2015; Finocchario-Kessler et al., 2010).

Several studies showed variations in terms of the description and matters related to the fertility desire in WLHA. Research in Canada showed that the fertility desire in WLHA increased from 26% to 69%, and the intention to get pregnant in the future increased from 29% to 58% as compared to a previous study. This increase was due to several variables: the participants' younger age, their African ethnicity, living in Toronto, and a lower number of lifetime births (Loutfy et al., 2009). Mmbaga et al. found that the fertility desire of People living with HIV/AIDS (PLHA) in Tanzania was approximately 37.1%, and this was associated with living and having sex with a partner, a good perceived health status, CD4 count $\geqslant$ 200 cells, and HIV disclosure for both sexes (Mmbaga, Leyna, Ezekiel, & Kakoko, 2013). Meanwhile, Melaku et al. found a 45.5% fertility desire in WLHA in the Tigray Region of Ethiopia, which was associated with age, the serology status known by the partner/husband, and the present number of children as the related factors (Melaku, Zeleke, Kinsman, & Abraha, 2014).

Previous research in Semarang, Indonesia, found that only 25.8% of WLHA had the fertility desire. The rest did not want to be pregnant because of the fear of transmitting HIV to their babies through pregnancy and childbirth. This fertility desire was associated with CD4 counts, ARV access, and the women's attitude towards fertility desire ' (Pratiwi, Shaluhiyah, & Suryoputro, 2019). Yogyakarta placed 13th among the cities in Indonesia with the most number of HIV/AIDS infected cases (Kemenkes RI, 2014). At the end of 2018, the number of WLHA reached 1,133 from 3,993 total cases. Research into the fertility desire in Indonesia has seldom been undertaken because of the high levels of stigma experienced by the WLHA from society and even from healthcare providers. A similar study has never been done in Yogyakarta. This study intended to determine the relationship between fertility desire and factors related to the WLHA receiving ART in Yogyakarta, Indonesia.

METHOD

Descriptive-analytic research with a cross-sectional approach was conducted with 303 WLHA who received ART in Yogyakarta, Indonesia. The study was undertaken in five districts (Sleman, Bantul, Kota, Gunung Kidul, and Kulon Progo) from March to August 2019.

The sample comprised of WLHA who regularly visited either their sub-districts' health centers or hospitals and had joined the Victory Plus Foundation. Victory Plus is a foundation that engages in and gives direct support to people who are affected by HIV and AIDS. Victory Plus supports almost all of the PLHA who have undergone HIV testing and are receiving ART in Yogyakarta through its programs such as empowering peer-support groups, assisting PLHA at home or in hospital, generating income, and providing HIV socialization programs.

The sample was obtained using convenience sampling when the WLHA visited their sub-district health centers or hospitals. The inclusion criteria included WLHA aged $\geqslant$ 15 to 55 years old, receiving ART, who lived in Yogyakarta, and were independent in their daily activities. The exclusion criteria were WLHA who could no longer have children due to having a hysterectomy and/or had a form of permanent contraception (tubectomy).

Data were obtained through the distribution of questionnaires. The questionnaire was adopted, constructed, and adjusted based on the previous research by Melaku et al. (2014); and Krashin et al. (2018). The 22-item questionnaire consisted of one question for the participant's name/initials, six socio-demographic questions, two questions related to their history of reproduction, eight questions related to HIV/AIDS, three questions related to their fertility desire, and two open-ended questions related to the reason for wanting or not wanting to have children.

The main output about their fertility desire was derived from their answer to the central question about their fertility desire: 'Would you like to have children soon or in the future?' The answer given was either: 'yes,' 'no,' or 'unsure'. Those who gave 'unsure' as their answer but wrote down why they wanted children and how many they wanted to have were grouped into the 'yes' answer.

Univariate data analysis of the sample's characteristics was conducted using descriptive and frequency analysis. Chi-square ($p<.05$) was used to analyze the bivariate data. Later, for the

multivariate data analysis, the logistic regression model was employed to calculate the adjusted and unadjusted odds ratios of the significant predictors of the fertility desire of the WLHA.

This research passed the ethical feasibility test from Jenderal Achmad Yani University, Yogyakarta. It was granted a research permit by Jenderal Achmad Yani University and the Victory Plus Foundation. The funding for obtaining the data for this research followed the regulations applied by those institutions.

RESULT

Characteristics of the WLHA in Yogyakarta.

303 people who matched the eligibility criteria and gave complete answers formed our sample. This research found that most of the sample were of reproductive age (15 to 49 years old = 95.7%), 100% of the sample lived in Yogyakarta and 94.7% of them identified themselves as Javanese. In accordance with the major religion in Indonesia, 90.1% of the sample were Muslims (Table 1).

Table 1. *The Characteristics and Fertility Desire of Women with HIV / AIDS in Yogyakarta, Indonesia*

Characteristics (n=303)	f	%	Characteristics (n=303)	f	%
Age			**Length of HIV Diagnosis**		
● 15-49 years	290	95.7	● < 1 year	26	8.6
● ≥ 50 - 55 years	13	4.3	● ≥ 1 year	277	91.4
Ethnicity			**Length of ART**		
● Javanese	287	94.7	● < 1 year	38	12.5
● Sundanese	8	2.6	● ≥ 1 year	265	87.5
● Madurese	4	1.3			
● Buginese	4	1.3			
Religion			**Adherence to ART**		
● Islam	273	90.1	● No	41	13.5
● Christian	21	6.9	● Yes	262	86.5
● Catholic	9	3.0			
Education			**Current Health Perceptions**		
● Illiterate	9	3.0	● Worse	15	5.0
● Elementary	42	13.9	● Unchanged	64	21.1
● Junior High School	89	29.4	● Improved	224	73.9
● Senior High School	141	46.5			
● Academic/University	22	7.3			
Occupation			**Fertility Desire**		
● Housewives	194	64	● No	149	49.2
● Civil Servants	3	1.0	● Yes	154	50.8
● Private Sector	87	28.7			
● Professional	3	1.0			
● Other	16	5.3			
Marriage			**Desired Number of Children (n = 154)**		
● Never Married	33	10 .9	● 1	79	51.3
● Widowed / Separated	111	36.6	● 2	65	42.2
● Married	156	51.5	● 3	9	5.8
● Others	3	1.0	● 4	1	0.6
Number of living children			**Gender Preference (n = 154)**		
● None	56	18.5	● Male	28	18.2
● 1 Child	98	32.3	● Female	36	23.4
● 2 Children	104	34.3	● Gender does not matter	90	58.4
● > 2 Children	45	14.9			
Number of HIV Children			**Reasons to Have FD (n = 154)**		
● None	267	88,1	● Need caretaker in old age	13	8.4
● 1 Child	32	10.6	● Want to increase descendants	28	18.2
● 2 Children	4	1.3	● Want to live like normal people	4	2.6
Disclosed to Others			● Want to increase happiness	7	4.5
● No	170	56.1	● Want to have healthy children	7	4.5
● Yes	133	43.9	● Want to have a daughter	5	3.2
			● Want to have a son	2	1.3
			● The desire of the husband	2	1.3
			● Want to have descendants	86	55.8
Disclosed to Sexual Partners			**Reasons for Not Having FD (n = 149)**		
● No	102	33.7	● Caring is complicated	3	2.0
● Yes	201	66.3	● Unable to care for children	9	6.0
Types of Sexual Partner			● Trauma of having an HIV child	3	2.0
● Casual	78	25.7	● Fear children will be infected	10	6.7
● Steady	225	74.3	● Not having a partner	3	2.0
			● Already feel old	34	22.8
			● Already have children	87	58.4

Education in Indonesia is divided into three levels: primary, middle, and higher education. Education up to junior high school is recognized as primary education, senior high school is categorized as intermediate/middle, while academy or university level is categorized as higher education. Most of the samples in this study have a middle educational background. Those in the sample with a senior high school background accounted for 46.5% of the sample; most of them were housewives (64%) (Table 1).

Almost half (48.5%) of the sample stated that they were not currently in a marital relationship, however, 74.3% reported that they had a steady partner (Table 1). A steady partner was perceived as a partner who had continuous sexual contact with a member of the sample, within the last six months. There were 81.5% WLHA who had biological living children and 11.9% had biological living children with HIV (Table 1).

Those who chose to disclose their HIV/AIDS status to their sexual partners numbered 201 (66.3%), and this is congruent with a previous study, which stated that the disclosure of their HIV status by the WLHA to their sexual partners in Yogyakarta was high (79.4%)"" (Rukmi & Darussalam, 2018). Meanwhile, 56.1% decided not to disclose their condition to anyone other than their sexual partners (Table 1).

All of the samples in this research received ART. The majority of the WLHA (91.4%), had been diagnosed with HIV for one year or more and 87.5% of them had been taking ARV for one year or more (Table 1).

Most of the sample adhered to ART (86.5%) and stated that they experienced an improvement in their health (73.9%). All of the sample's characteristics in this research can be observed in the following tables.

Table 2. *Bivariate Test of Fertility Desire in WLHA in Yogyakarta, Indonesia*

Characteristic (n=303)	COR (95%CI)	P-value
Age ≤ 35 years vs. > 35 years	0.243 (0.15-0.4)	**< 0.001***
Ethnicity Javanese vs. Non-Javanese	2.22 (0.76-6.54)	**0.141****
Religion Islam vs. Non-Islam	1.12 (0.53-2.38)	0.772
Education Attainment Basic vs. Advanced	1.43 (0.59-3.46)	0.421
Occupation Informal vs. Formal	2.34 (1.44-3.98)	**0.001***
Marital Status Married vs. Single	0.87 (0.55-1.36)	0.533
Biological Living Children Have vs. None	11.46 (4.74-27.73)	**<0.001***
Biological Children with HIV None vs. Have	0.66 (0.33-1.33)	**0.242****
Disclosed to Sexual Partner No vs. Yes	1.26 (0.78-2.02)	0.747
Disclosed to Non-Sexual Partner No vs. Yes	1.27 (0.80-1.99)	0.350
Type of Sexual Partner Steady vs. Casual	1.05 (0.63-1.75)	0.866
Length of HIV Diagnosed ≥ 1 year vs. < 1 year	1.14 (0.51-2.56)	0.308
The Period of Taking ART ≥ 1 year vs. < 1 year	1.23 (0.62-2.43)	0.558
Adherent to ART No vs. Yes	0.88 (0.45-1.67)	0.696
Current Health Perceptions Improved vs. Worse / Unchanged	0.99 (0.59-1.65)	0.968

***significant in < 0.05, ** significant in < 0.25**

Fertility Desire and Associated Factors

A description of the fertility desire of the WLHA in Yogyakarta is presented in Table 1. 25 of the sample gave an 'unsure' answer on the questionnaire sheet, but they also supplied the number of children they desired and the reason for their fertility desire. Therefore, those of the sample who answered 'unsure' were categorized into the 'yes' group. Final results showed 50.8% of the WLHA in Yogyakarta answered 'yes' to wanting to have children soon, or at some point in the future.

All of the sample's characteristics were then subjected to bivariate testing related to their fertility desire (95%CI; p<.05). The bivariate testing showed that age (p-value = <.001), occupation (p-value = .001), and the number of living children (p-value = <.001) were significantly related to the fertility desire of the WLHA in Yogyakarta (CI95%; p <.05) (Table 2).

For the multivariate test, the bivariate results with a p-value <.25, which were the age, ethnicity, occupation, number of biological living children, and number of biological living children with HIV, were subjected to logistic regression tests (Table 3). The logistic regression using the backward stepwise method showed that age 35 years or younger and with no

Table 3. *Multivariate Test of Fertility Desire*

VARIABLE (n=303)	Fertility Desire		AOR (95% CI)	P-value (95% CI)
	Yes (%)	No (%)		
Age • ≤ 35 years • > 35 years	103 (33.99) 100 (33.00)	49 (16.17) 51 (16.83)	3.33 (2.00-5.53)	**< 0.001***
Ethnicity • Javanese • Non-Javanese	143 (47.19) 11 (3.63)	144 (47.52) 5 (1.65)	0.59 (0.18-1.93)	0.381
Occupation • Informal • Formal	93 (30.69) 61 (20.13)	117 (38.61) 32 (10.56)	0.61 (0.34-1.09)	0.092
Biological Living Children • Yes • None	104 (34.32) 50 (16.50)	143 (47.19) 6 (1.98)	0.13 (0.52-0.33)	**< 0.001***
Biological Children with HIV • None • Yes	139 (45.87) 15 (4.95)	128 (42.24) 21 (6.93)	1.03 (0.49-2.18)	0.943

***Significant in < 0.05**

biological living children had the most significant relationship with the fertility desire in the WLHA receiving ART in Yogyakarta (95%CI; p<.05). Meanwhile, the other variables do not produce significant results in multivariate testing (Table 3).

DISCUSSION

This study showed that the WLHA who received ART in Yogyakarta had a higher fertility desire (50. 8 %). This result is higher than the results of researches conducted in Semarang (25.8%), the Dominican Republic (8.3%), Western Highland (34.02%), Tigray Region (45.5%), and Jimma Town (46. 8%) '"(Aska, Chompikul, & Keiwkarnka, 2011; Cernigliaro, Barrington, Perez, Donastorg, & Kerrigan, 2018; Melaku et al., 2014; Pratiwi et al., 2019; Shiferaw et al., 2019). However, this result is lower than the results obtained in Ontario (69%) and Addis Ababa (54. 6%)(Adilo & Wordofa, 2017; Loutfy et al., 2009).

Compared to previous similar studies in Indonesia, the fertility desire of the WLHA in Yogyakarta is higher than that of the WLHA in Semarang (50.8% vs. 25.8%). This result could be associated with where this study was conducted. The WLHA in this study were all part of a supporting foundation that implemented several programs to improve their well-being. With them all facing the same fate, the WLHA could improve their quality of life because they could open up, support each other, and provide information regarding the treatment and services they needed. With the improvement in their quality of life, there are opportunities for the WLHA to think about things related to their desires, including their fertility desire. In congruence, Zaidi et. al. stated that HIV-infected individuals, who live amongst friends and relatives, have good social support, access to psychosocial services, and who are financially secure, can improve their quality of life '(Zaidi et al., 2012).

Age and Fertility Desire

From the multivariate testing, it was found that age 35 years or younger (p-value = <.001; AOR: 3.33; 95%CI: 2.00 to 5.53) and had no living biological children (p-value = <.001; AOR:.13; 95%CI:.52 to .33) had the closest relation with the fertility desire in the WLHA in Yogyakarta. This study result is very close to Berhan & Berhan's meta-analysis outcome, which stated that age below 30 years old and do not have biological children were the most substantial factors related to fertility desire in PLHA (Berhan & Berhan, 2013).

In this study, age had a significant relationship with the fertility desire in the multivariate (p-value = <.001) and bivariate testing (p-value = <.001) (Table 2 & 3). WLHA who were aged 35 years or under, were known to have a fertility desire 3.3 times higher than those WLHA who were above 35 years old (Table 3). This result is very similar to that of the previous research, which stated that WLHA of a younger age had a significant relationship with the fertility desire –'"(Aska et al., 2011; Laursen et al., 2013; Ramos De Souza et al., 2017; Shiferaw et al., 2019).

Young age impacts the fertility desire of women infected with HIV to the same extent as it does those who are not infected (Kakaire, Osinde, & Kaye, 2010). This fact proved that the desire to reproduce exists in most young people, with no regard for their serology status –'(Ramos De Souza et al., 2017). Moreover, the desire to reproduce is a natural desire of young people, because the average age at which most people start building a nuclear family is when they are still young –'(Ramos De Souza et al., 2017).

Also, maternal death in Indonesia is caused by four 'overly' risk factors, namely: *overly young* (below 20 years old), *overly old* (above 35 years old), *overly short gap between childbirth* (the gap

between births is less than two years), and *overly in terms of numbers* (giving birth more than four times) (Kementerian Kesehatan Republik Indonesia, 2011). So, besides the influence of age, the high fertility desire in WLHA aged 35 years and under in this study could be from a multitude of factors that encourage childbirth at a safe childbearing age (Table.3).

Living Biological Children and the Fertility Desire

Aside from age, having biological living children also had a significant relationship with the fertility desire of the WLHA in Yogyakarta, in both the bivariate (p-value = <.001) and multivariate tests (p-value = <.001). This result is in line with an earlier study which stated that having a small number of children (do not have, or only have 1 to 2 children) is related to the fertility desire in WLHA (Cernigliaro et al., 2018; Krashin et al., 2018; McClellan, Patel, Kadzirange, Chipatod, & Katzenstein, 2010; Melaku et al., 2014; Shiferaw et al., 2019).

For most of Indonesian society, the perfect picture of a family consists of the father, mother, and children. Because of this image, having children offers status and prestige for married women. Hence, based on informal confirmation towards this ideal, most of the WLHA state that they decided to have children during their prime reproductive age; their health condition permitted them to do this because they had been receiving ART. This result is in line with the statement that the fertility desire increased along with the decrease of MTCT, an improvement in their health because of their HIV treatment, and the high number of young women with HIV who have never experienced pregnancy or childbirth before (Finocchario-Kessler et al., 2010).

Children play several essential roles in the completeness of a family. Also, women and community value children highly. Children have an emotional value for women because having children gives them a higher social status and gains them recognition from their community (Ayieko et al., 2017). The women assume that they are expected to give birth when they get married, to continue the lineage, or to replace family members who have died (Ayieko et al., 2017; Shiferaw et al., 2019).

In Indonesia, children are essential for married couples. Children are perceived as a symbol of the proof of male virility and a symbol of a woman's maternal quality (Hapsari & Septiani, 2015). Children also have an important meaning for the WLHA; they will feel proud when they have children because they will have carried out one of their main functions in a family, even though they had to face many risks '(Pratiwi et al., 2019).

This study's result strengthened the statements of previous studies. 50 out of the 56 (89.3%) WLHA who do not have biological children have the fertility desire, while only 42.1% who already have children stated that they still wanted to be fertile (Table 3). Hence, it concluded that the fertility desire in WLHA who already have children was only 0.13 times than that of the WLHA who do not have children.

The WLHA who have the fertility desire (n = 154) stated that they want to have at least one child (51.3%) or two children (42.2%) in the future (Table 1). They did not specify the gender of the child they wanted (58.3%), while the reason for having the fertility desire was because they wanted to have a descendant (55.8%). Meanwhile, those without fertility desire (n = 149) stated that their most significant reason was that they already have children (58.4%) (Table 1).

Other Factors of the Fertility Desire

Ethnicity was a variable in the multivariate test, but it did not have a significant relationship in the bivariate analysis (p-value =.141; 95%CI). Ethnicity related to the WLHA's fertility desire was in line with De Souza et al. (2017) and Loutfy et al. (2009). They stated that, in Brazil and Canada, more black people than white people with HIV/AIDS preferred to have offspring. This statement was supported by Barber and Gatny, who stated that black women were not interested in using contraception during sex and were more ready to accept the consequences such as pregnancy, compared to white people (Barber & Gatny, 2015).

Research on ethnicity's relationship to the fertility desire in WLHA in Indonesia is still scarce, so it is always challenging to explain. However, this connection might be seen from the Javanese people's perspective, since they still adhere to a patriarchal culture. Javanese men are considered to be their families' providers and protectors of life and its necessities in dealing with the world. As for women, there are several terms in Javanese culture about the women's duties, namely *manak* (bearing children), *macak* (dressing up), *masak* (cooking), which means that a wife or woman must be able to bear children, must be able to dress up for her husband and must be able to cook/process food for her husband/family members (Hermawati, 2007).

Yogyakarta is located on the island of Java. Most of the sample in this study were Javanese (94.7%), and half of them chose not to be fertile (50.1%) (Table 3). The multivariate test also showed an insignificant relationship between ethnicity and the fertility desire in this study (p = .381; AOR: .59; 95%CI: .18 to 1.93). As one of Indonesia's major cities and well known for its center for education, Yogyakarta has a heterogeneous population because migrants from outside and abroad study in this town. Heterogeneity, modern patterns of thought, and more varied relationships could be the reason why the Javanese WLHA in this study opted not to have children.

The occupation had a relationship with the fertility desire of the WLHA in Yogyakarta (p-value = .001) in the bivariate test (Table 2). However, it was not significant in the multivariate analysis (Table 3). This is in line with Aska et al. and Melaku et al., who found that occupation was related to the fertility desire in the bivariate test but not in a multivariate analysis.

Most of the WLHA in this study were housewives (64%) (Table 1). This is consistent with previous research that stated that WLHA

are mostly housewives (Padyana, Dinesha, Bhat, & Nawaz, 2013; Rahmalia et al., 2015).

In the bivariate and multivariate tests, the housewives and WLHA with other occupations (freelance laborers, female sex workers) were placed in one category, namely informal occupations, which covered 69.3% of the sample (Table 3). Of the WLHA with everyday work, 55.7% do not desire to be fertile. This result is somewhat different from the study conducted in Tigray, where most housewives have fertility desires (Melaku et al., 2014). The high number of WLHA with informal jobs and who chose not to have children could be influenced by economic instability. This is because housewives or informal workers will have a different paradigm than women who have jobs and independent incomes. Based on a previous study, employment does positively correlate with fertility (p-value = .007) (Rahman & Syakur, 2018). When one's work status is better, the level of welfare will increase and the person experiences less concern about high fertility. It could be the reason why the WLHA in this study prefer not to choose the fertility desire.

Having biological living children with HIV was included in the multivariate testing because it had a p-value < .25 (Table 2). The multivariate test further showed that having an HIV infected child did not affect the fertility desire of the WLHA in Yogyakarta (p = .943; AOR: 1.03; 95%CI: .49 to 2.18) (Table 3).

Most of the WLHA in this study did not have children with HIV (88.1%), and their fertility desire was slightly higher than those who did not want (52% vs. 48%) (Table.3). While for those who had children with HIV (11.9%), the ratio between those who had the fertility desire and those who did not was 41.7% and 58.3% (Table 3).

The insignificant relationship between having biological living children with HIV and the fertility desire in this study could be due to several factors that have been discussed, such as the young age of some of the sample and childlessness. Only 4 out of the 36 WLHA had two HIV infected children (Table 1), so, wanting to have a healthy child, increase their happiness with a new birth, or other reasons found in Table 1 could be why the WLHA with HIV infected children (15/36 or 41.7%) (Table 3) still wanted children in the future.

However, the percentage of WLHA with HIV infected children who chose not to want more children in this study was still greater (21/36 or 58.3%) than that of those who wanted more (Table 3). The reasons why the WLHA with HIV-infected children in this study did not desire to be fertile (n = 21) were as follows: *already had children* (n = 10) *although their child infected by HIV*, the trauma of having a child with HIV (n = 3), *already feeling old* (n = 3), *fear that the next baby will be also infected by HIV, as the previous one was* (n = 3), *and unable to take care of children* (n = 2) *because of financial instability*. Those reasons are understandable and in line with Ayieko et al., who examined the fertility desire qualitatively in women receiving ART in western Kenya. Ayieko et al. stated that women who have children infected with HIV tend not to have the fertility desire because having a child with HIV makes the mother feel discouraged and afraid that the child would become a heavy burden (Ayieko et al., 2017).

CONCLUSION/RECOMMENDATION

The high fertility desire of the WLHA receiving ART in Yogyakarta (50.8%) can be used as input for health workers regarding the need to include fertility issues as an integral part of HIV care. The assistance provided could be in the form of consultations and advocacy regarding the relevant information about pregnancy and childbirth to the WLHA, by considering several things such as the WLHA's age and the number of children the WLHA already have.

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ABOUT THE AUTHORS

Dwi Kartika Rukmi, is an assistant professor in Nursing Department in Jenderal Achmad Yani Yogyakarta University. She received her master and specialist degree in nursing from University of Indonesia. Currently, she is teaching medical surgical nursing and has research interest in HIV/AIDS and neuro-oncology nursing.

Ike Wuri Winahyu Sari is a lecturer at Universitas Jenderal Achmad Yani Yogyakarta. She took her bachelor's and master's degree in nursing at Universitas Diponegoro and Universitas Gadjah Mada, respectively. Her research interests revolve around palliative nursing and non-communicable diseases. More specifically, she delves her time on research topics concerning cancer, HIV/AIDS and diabetes.

Afi Lutfiyati, Ns., M.Kep obtained her bachelor's master's degree in nursing from Gadjah Mada University. She was an emergency nurse and a retired surgical casualty nurse from Ministry of Health, State of Kuwait. Currently, she is a lecturer in maternal and child health department of University of Jenderal Achmad Yani Yogyakarta-Faculty of Health, Nursing Study Program. Her research interests include woman reproductive health, family planning, and exclusive breastfeeding.

Acknowledgment

The researchers would like to thank the Indonesian Ministry of Research and Technology, address: Building 2 BPPT Lt19-20. Jl. MH. Thamrin No. 8 Jakarta 10340.