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Prevalence and Determinants of Contraceptive Use among Married Women of Reproductive Age in Somaliland

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Abstract

Background: The practice of contraception remains unpopular in Somaliland often attributed to cultural barriers, and misconceptions associated with practice of contraception, all of which discourage women from accessing reproductive health services. This study aimed to assess the prevalence and associated factors with the practice of contraception among married women of reproductive age in Somaliland.

Methods: The data consists of 2304 married women; only 169 (7.3%) of these women were practicing contraception of any kind. The data source for the analysis was the 2020 SLDHS data, which is secondary. A multilevel binary logistic regression model with random intercept and fixed slope models was used in the current investigation.

Results: Among the respondents in the study area, only 7.3% of them practiced contraception of any kind. Among the predictor variables, urban residence, husband's support, and secondary education and above, wealth, skilled/manual occupations, awareness of methods, completion of family, women who had access to mass media, and those women visited by FP workers significantly encourage the practice of contraception in the study area. On the other hand, lack of husband's support (AOR=0.8684, p-value<0.01), lower education (AOR=0.8390, p-value<0.01), women who had no access to mass media (AOR=0.7845, p-value=0.0451) and women not visited by the FP worker (AOR=0.3970, p-value=0.04162) were associated with the less practice of contraception and having a desire of more children in the study area.

Conclusion: The strong patriarchal culture is one of the factors in which husbands do not play a major role in contraceptive choices because of the presence of women empowerment to use the long-term contraception method. Close communication between husband and wife and the socialization of LARC by health workers is expected to increase its use is another methods used to reduce the influence of husbands on contraception use. For those individuals who can't get access of mass media, family planning campaigns play significant role in implementing contraception.

Keywords: Contraception • Multilevel logistic regression • Married women • Practice of contraception

Abbreviations: SLHDS: Somaliland Health and Demographics Survey; UNFPA: United Nation Population Fund, Programmers and Activities; PESS: Population Estimation Somaliland Survey; FP: Family Planning, IUC: Intrauterine Contraception, AOR: Adjusted Odds Ratio

Introduction

Contraception is a universally known fundamental procedure for reducing maternal and child mortality, especially in developing nations where the majority of all maternal and child mortality (about 98%) happens [1,2]. Contraception directly reduces the number of maternal deaths by lowering the risk of unplanned pregnancies and unsafe abortion, delaying first pregnancy among young women who are at a higher risk of death from childbearing. Contraception also plays a great role in reducing closely spaced pregnancies that improve prenatal outcomes and child survival [3]. More importantly, reducing pregnancies in older higher parity women has more impact on maternal mortality rates.

Globally, about 295 000 women died from pregnancy and childbirth-related complications in 2017, and it was reported that Somaliland was one of the 15 countries considered to be very high alert or a fragile state (WHO, 2019). The 2020 Somaliland Health and Demographic Survey (SLDHS) found that the Maternal Mortality Ratio (MMR) has fallen to 396 deaths per 100,000 live births from 418 in 2014 [4].

The ethnicity of the Somaliland people is Somali and their religion is Islam [5]. The population of Somaliland was 3.5 million in 2014 and has been projected to be 4.2 million in 2020 using a growth rate of 2.9%, with the bulk of the population living in urban centers [6]. In Somaliland, as in many other developing countries, vital registration systems are inadequate for obtaining accurate and reliable health-related data. Fortunately, Somaliland launched its first Health and Demographic Survey (SLHDS 2020), which provides information on housing and household characteristics, health, marriage, fertility, birth spacing, and other vital sectors, including maternal mortality [7,8]. According to Somaliland Health and Demographic Survey 2020, the Total Fertility Rate (TFR) is 5.7 children per woman and, it is reported that 94% of interviewed women wish to have six or more children. This further indicates that Somaliland is among the countries with the highest total fertility rates in the world [9,10].

Contraceptive use among married women of reproductive age in sub-Saharan Africa increased from 13 % in 1990 to 29 % in 2019 [11]. However, Somaliland is among the countries with the lowest contraceptive prevalence rate [12]. A recent study, conducted in one of the regions in Somaliland, found that the practice of contraception was unpopular due to cultural barriers, and misconceptions associated with the practice of contraception [13]. Among the

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7% of women who practiced contraception in Somaliland, 1% of them reported that they used a modern method, and an unmet need for family planning is 30% [14]. Somaliland is the second highest fertility rate in the world (6.2 births per woman), which exceeds the fertility rate in sub-Saharan Africa (4.8 births per woman) and the world (2.4 births per woman) [15].

Considering the low practice of contraception among married women, it will be a significant challenge for Somaliland in achieving the original Millennium Development Goals (MDGs), especially in reducing child mortality and improving maternal health. Therefore, understanding the possible factors that influence the practice of contraception could inform interventions to improve contraception among married women. Hence, the current study aimed to assess the practice of contraception and predictors affecting the practice of contraception among married women of reproductive age in Somaliland. The result obtained in this study may be important for policy implications in improving the health status of both children and their mothers [16].

Materials and Methods

Sampling approach and technique

The study was conducted in Somaliland from January 2021 to June 2021. According to the Population Estimation Survey of Somaliland (PESS), its population was estimated at 3.6 million in 2014. Administratively, Somaliland is divided into regions, and zones into administrative units, woredas. Each woreda is further subdivided into the lowest administrative unit, Kebele. Furthermore, each kebele was subdivided into census Enumeration Areas (EAs) or clusters. The 2020 SLDHS sample was selected using a stratified, two-stage cluster sampling design (SLDHS, 2020). Each region was stratified into urban and rural areas, yielding 21 sampling strata. The sample included 192 clusters which are sampling units in the first stage, 82 in urban areas and 110 in rural areas. Then, a fixed number of 12 households per cluster were selected with an equal chance of selection criteria from the newly created household listing

The current study used secondary data collected by the national central statistics agency for different purposes. The agency collected a sample of 2304 married women of reproductive age in the selected enumeration areas, who satisfied the socio-demographic and cultural variables. Hence, the samples of women were taken from all six regions [17]. The data were entered into the system by data encoders (health staff with one day of training about the variables included under study). The predictor variables for this study are indicated in Table 1.

Data analysis and models used in current research

Data analysis was conducted using descriptive and inferential statistics. Odds ratios were calculated for each possible factor. For this analysis, a multilevel binary logistic regression with random intercept and fixed slope model was selected for the data analysis based on the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC). R-software was used for data analysis

Inclusion criterion: All women of reproductive age (15-49 years) were included in the current investigation for identifying predictors of practice of contraception.

Operational definitions

Support of husband: The role of men in increasing the acceptability and prevalence of the Family-Planning (FP) practice.

Access to mass media: Access to any information related to family planning using television, radio, newspaper, and internet

Easy access to family planning: It is the procedure where women can get the practice of contraception from any health institution nearby their area.

Wealth index of women: This describes the incomes of women that may be related to the affordability of women's practice of contraception. The wealth index is a composite measure of a household's cumulative living standard and it is calculated using easy-to-collect data on a household's ownership of selected assets. Each household asset for which information is collected is assigned a weight or factor score generated through principal components analysis. The resulting asset scores are standardized in relation to a standard normal distribution with a mean of zero and a standard deviation of one. These standardized scores are then used to create the breakpoints that define wealth quintiles into five wealth quintiles (Lowest, poor, Middle, wealthy and wealthiest). This is the standard measure for many Demographic and Health Survey (DHS) data in sub-Saharan countries. Hence, the wealth index of each woman included in this investigation was calculated based on the national averages.

Socio-demographics refer to a combination of social and demographic factors that define people in a specific group or population. In other words, when we talk about socio-demographics, we mean different social and demographic features help us know what members of a group have in common. Socio-demographics include age, education, religion, employment, marital status, income levels, migration background, race, and ethnicity.

Socio-cultural factors Variables include Socio-economic Status, race/ethnicity, gender and sex roles, immigration status and acculturation, poverty and deprivation, social networks and social support, and the psychosocial work environment, in addition to aggregate characteristics of the social environments such as the distribution of income, social cohesion, social capital, and collective efficacy.

Results

The demographic characteristics of the women are displayed in the first three columns of Table 1.

Table 1 indicates that among different age groups, 9.7% of the women in the age group (15-24 years), 7.5% of them in the age group (25-39 years), and 3.6% of the participants in the age group above 39 years of age used any method. Similarly, about 15.4% of the urban, 2.2% of the nomads, and 1.5% of the rural participants used contraceptive methods. The highest concentration (12%) of practice of contraception was in the Awdal region and the least (4.4%) was located in the Sanaag region (Table 1). About 7.5% of the women were 25-39 years of age, and about 15.4% resided in urban areas. Table 1 indicates that about 1.7% of the women had no education, and about 98% of the poor women in the current investigation didn't practice contraception and wanted more children. About 66.3% of women with higher education and 48% of women with secondary education practiced contraceptive methods. About 13% of rich women and 6.1% of the women of middle-class economic status practiced contraception.

Regarding the occupation type, about 23.4% of the clerical employees practiced contraception. The lowest proportion of women who practice contraception was domestic and unskilled manual workers.

In the current investigation, about 23.8% of the women with no children practiced contraception, and about 61.5% of the women who were visited by FP workers for the last 12 months practiced contraception (Table 1).

Multilevel binary logistic regression with random intercept and fixed slope model

The result of the multilevel Binary logistic regression model with random intercept and the fixed slope is indicated in Table 2.

Table 2 shows the results of a multilevel logistic regression model with random intercept and fixed slope model was found to be the best fit for the data. The result in Table 2 indicates that practice of contraception had negatively associated with age of women, and sex preference of parents. On the other hand, the variable of the study was positively associated with support of a husband, wealth index, and an easy access to FP, knowledge of contraceptive methods, visits of women by the health worker, and women who thought they had enough children.

After controlling for other variables in the model, the odds that married

Table 1. Baseline characteristics of socio-economic and demographic factors.

Variables	Categories	Practice of Contraception			
		No		Yes	
		Count	%	Count	%
Age group of Married Women	15-24	464	90.3	50	9.7
	25-39	1295	92.5	105	7.5
	above 39	376	96.4	14	3.6
types of residence	Urban	783	84.6	143	15.4
	Rural	699	98.5	11	1.5
	Nomadic	653	97.8	15	2.2
Regions	Awdal	338	88	46	12
	Marodi jeh	354	92.2	30	7.8
	Sahil	354	92.2	30	7.8
	Togdheer	356	92.7	28	7.3
	Sool	366	95.3	18	4.7
	Sanaag	367	95.6	17	4.4
Women's Educational level	No Education	1750	98.3	31	1.7
	Primary	291	93.6	20	6.4
	Secondary and above	94	85.7	118	14.3
Wealth index	Poor	986	98.2	18	1.8
	Middle	232	93.9	15	6.1
	Rich	917	87.1	136	12.9
Occupation group of women	Professional/ managerial	147	78.2	41	21.8
	Clerical	98	76.6	30	23.4
	Sales and services	344	89.6	40	10.4
	Skilled manual	108	82.4	23	17.6
	Unskilled manual	370	97.9	8	2.1
	Domestic service	931	97.7	22	2.3
	Agriculture	137	96.5	5	3.5
Thought they had enough number of living children	No	1537	93.6	156	6.4
	Yes	598	97.8	13	2.2
Desire for more children	Yes	1648	96.6	69	3.4
	No	487	79.5	100	20.5
Knowledge of any contraceptive method	No	1692	98.2	8	1.8
	Yes	443	91.3	161	8.7
Access to any mass media	No	1477	97.2	19	2.8
	Yes	658	90.8	150	9.2
Visited by FP worker during the last 12 months	No	2115	93.9	32	6.1
	Yes	20	38.5	137	61.5
Easy access of FP in health Facility	Yes	996	93.41	110	6.589
	No	1139	91.46	59	8.54
Support of husband to use FP	Yes	831	60.5	125	39.5
	No	1304	97.7	44	2.3

women age 25-39 practice of contraception was 2.2% lower than young married women of age 15-24 (AOR=0.978, p-value=0.0043), while the odds of practice of contraception by married women of age above 39 years was 22.2% less than those women of age group, 15-24 years (AOR=0.7776, p-value=0.0156), given the other conditions constant.

The odds of practice of contraception by the rural married women of reproductive age was 14.1% less than urban married women of reproductive age, keeping the other variables constant (AOR=0.8594, p-value<0.01). Similarly, the odds of practice of contraception by those women who did not get support from husbands was 13.3% less than those women who got support for family planning, keeping the other variables constant (AOR=0.8674, p-value<0.01).

Table 2. Parameter estimates of the multilevel logistic regression model with random intercept and fixed slope.

Variables	Estimate(β)	Std. Error	AOR= eβ	z value	Pr(>|z|)
Intercept	3.29088	0.70314	26.8665	4.68	0.000*
Age category (Ref.=15-25)					
25-39	-0.0222	0.26578	0.978045	-0.084	0.0043*
39 and above	-0.25153	0.46876	0.77761	-0.537	0.0156*
Residence area(Ref.= Urban)					
Rural	-0.15153	0.26876	0.8594	-0.237	0.000*
Support of husband to use FP (Ref.=Yes)					
No	-0.1423	0.16846	0.8674	-0.437	0.000*
Education (Ref.= Secondary and above)					
No Education	-0.1756	0.39738	0.839	-7.991	0.000*
Primary	-0.27554	0.39995	0.7592	-5.69	0.000*
Easy access of contraceptive methods in the health facilities (Ref.=Yes)					
No	-0.12354	0.19995	0.8838	-2.69	0.000*
Wealth index (Ref.=Poor)					
Middle	0.19944	0.40211	1.220719	0.496	0.2199
Rich	0.02472	0.44937	1.025028	0.055	0.03613*
Occupation (Ref.=Skilled manual)					
Agricultural	-0.98146	0.6285	0.374764	-1.562	0.11838
Domestic Service	-1.59023	0.4016	0.203879	-3.96	0.000*
Unskilled manual(labourers)	-1.58982	0.51048	0.203962	-3.114	0.000*
Influence of religion (Ref.=No)					
Yes	-0.27354	0.19995	0.7607	-2.19	0.000*
Known any contraceptive method (Ref.=Yes)					
No	-1.07395	0.45358	0.341656	-2.368	0.01790*
Desired for more children(Ref.=no)					
Yes	-1.48707	0.24536	0.226034	-6.061	0.000*
Exposure to mass media (Ref.=Yes)					
No	-0.24275	0.33412	0.784468	-0.727	0.0451*
Visited by FP worker in the last 12 months (Ref.=Yes)					
No	-0.9237	0.4534	0.397047	-2.037	0.04162*
Thought they had enough number of living children (Ref.=Yes)					
No	-1.27715	0.28808	0.278831	-4.433	0.000*
Sex preference (Ref.=yes)					
No	0.2352	0.6543	1.2652	5.4672	0.001*

AOR: Adjusted Odds Ratio, *Statistical significant variables

Education had a significant effect for practice of contraception among married women of reproductive age in Somaliland. Hence, the odds of practice of contraception by non-educated married women of reproductive age was 16.1% less than those married women whose level of education, secondary and above, keeping the other covariates constant (AOR=0.8390, p-value <0.01). Similarly, the odds of practice of contraception by primary educated married women of reproductive age was 24.1% less than those married women of reproductive age with at least a secondary education, keeping the other covariates constant (AOR=0.7592, p-value<0.01).

The odds of practice of contraception by married women of reproductive age who had no easy access of contraceptive methods in health institutions was 21.6% less than those who had easy access, keeping the other covariates constant (AOR=0.8838, p-value<0.01).

The odds of practice of contraception by married women of reproductive ages without knowledge of different types of contraceptive methods was 65.8% less than those women who had a piece of knowledge of different contraceptive methods, given the other conditions constant (AOR=0.3417, p-value=0.0179).

The desire for more children had significantly affected the variable of interest. The odds of practice of contraception by married women of reproductive age who had a desire for more children was 78.4% less than those women who had no desire for more children, keeping the other covariates constant (AOR=0.2260, p-value< 0.01). Similarly, the odds of practice of contraception by married women of reproductive ages who had no access of any mass media was 21.5% less than those women who had an access to mass media, given the other covariates constant (AOR=0.7845, p-value=0.0451)

The odds of practice of contraception methods by married women of reproductive ages visited by health workers was 60.3% less than those women who had been visited by health workers, given the other covariates constant (AOR=0.3970, p-value=0.0416).

A number of living children had a significant effect on the practice of

contraception. Hence, the odds of practice of contraception by married women of reproductive age who thought they had not enough children was 72.2% less than those women who thought they had enough living children (AOR=0.2788, p-value<0.01).

The odds of practice of contraception by married women of reproductive age who had no sex preference was 26.5% more than those women who had sex preference, keeping the other covariates constant (AOR=1.265, p-value=0.001).

Discussion

In the current study, important variables which significantly affect the practice of contraception by married women of reproductive age in Somaliland have been identified. These significant variables are discussed as follows;

Married women who resided in urban areas were more likely to practice contraception than those from nomadic and rural areas. The potential reason for this may be easy accessibility of family planning services in cities, the desire for more children in rural areas, and more outstanding education in urban areas [18]. This result is supported by one of the previous studies [19]. The potential reasons stated in the previous research are low practice of contraception practice by rural women is low support of rural women by their husbands, religious effect, and the less accessibility of FP by rural women.

The age of women had also a significant effect on the practice of contraception. In this study, as the age of women increased, the probability of practice of contraception decreased. The potential reason for this may be the fact that the high fertility rate at a young age and decreasing rate slowly as age increases [20]. To control the rate of fertility at a younger age, young women are forced to practice contraception, otherwise, they can have another extra child before the current one can be sufficiently breastfed and this leads the child to be exposed to different types of disease. This result is supported by one of the previous studies [14]. However, this result is contradicted by the result obtained from research conducted previously in Ethiopia [21,22]. Hence, this result needs further investigation to infer the effect of age on the practice of family planning.

This study also revealed the statistically significant association between practice of contraception and women's education level. Hence, this study revealed a significant positive association between knowledge of the family planning method and practice of contraception. Educated women could avoid the harmful effects of family planning methods by getting appropriate advice from a service provider, thereby increasing their consistent use. This finding is consistent with previously conducted research [12] in Uganda. One of the previous studies states that women who completed primary & secondary education practiced family planning more than uneducated women. The reason for this is stated as due to the fact that women who were able to read and write would think FP activities are useful to be economical, self-sufficient, and more likely to acquire greater confidence and personal control in marital relationships including the discussion of family size and practice of contraception [23,24].

Another important factor significantly affects the use of contraceptive methods is women's occupation or types of employment. Married women who were unskilled employees are less likely to use contraceptives compared to clerical employees. Similarly, married women who were housewives (domestic workers) are less likely to use contraceptives than women who worked as clerical employees. This result is in line with findings in Ghana and India [25]. One of the previous research conducted in the Philippines states that self-employed mothers significantly practice contraception more likely than mothers who do not work for pay or profit [26]. The study revealed that women who didn't know about different contraceptive methods are less likely to practice family planning compared to women with knowledge of alternative contraceptive methods. Knowledge and practice of family planning are strongly related to a higher level of education. In most of the studies, it is stated that education is the prime influencing factor and education affects the knowledge and behavioral patterns of the individuals on practice of contraception [21,27]. Hence, knowledgeable women about different types of contraceptive methods are more likely to practice contraception than women without knowledge of different types of contraceptive methods.

Access to different information related to the practice of contraception using mass media (TV, radio, internet, and newsletters) significantly affected the practice of contraception. Hence, those women who did not have access to media have a low practice of contraception as compared to those women who had easy access of mass media. A study of Somaliland immigrant women in Oslo supported this finding [28]. This finding is also consistent with research findings in Ethiopia [21] and Tanzania [29]. Most rural women lack easy access to mass media related to practice of contraception and this leads to the low practice of contraception [30]. Hence, the promotion of family planning using media, in countries with high birth rates has the potential to reduce poverty and hunger.

For those individuals who can't get access of mass media, family planning campaigns in the various part of the country encourages individuals to take action in implementing contraception. The family planning campaign can share the experience of those contraceptive users to other participants on the engaged in the campaign [31]. One of the previous studies states that a number of participants who were in the campaign showed that both males and females becoming more receptive to family planning [31].

The family planning campaign does indeed influence listeners or viewers not only to adopt a positive attitude towards contraception but also to adopt it. Although not every participant in campaign did something, more than half said they took one step or another after listening to or watching a family planning advertisement [31].

Furthermore, the study showed that married women who had no desire for more children are more likely to practice contraception than married women who wanted more children. A study conducted in Kenya on Somaliland women refugees supported this finding [32]. Those women who need more children have short intervals between successive births and this leads to exposure to malnutrition or disease related to a balanced diet for children. This result is supported by previous research [33].

Support of a husband to practice contraception facilitates the practice of contraception in Somaliland. A similar result is obtained from research conducted previously [34,35]. One of the previous researches conducted in Bangladesh states that women in Bangladesh have a tendency to practice contraception only when they perceive that their husbands do not object. This study states that in many cases, those women who are non-users 'husband's opinion' as an excuse for being a non-user in the future. Even in a high-use country, women who were never users reported that the main reason was their husband's opposition. The previous study states that the strong patriarchal culture is one of the factors in which husbands do not play a major role in contraceptive choices because of the presence of women empowerment to use the long-term contraception method [36]. Close communication between husband and wife and the socialization of LARC by health workers is expected to increase its use is another methods used to reduce the influence of husbands on contraception use [36].

Those women who have a sex preference for their children may have extra and more children. The potential reason for this might be women who need male children may not be male during the performance because of a chance of their sex, the same is true for those women who need female children and continue to get their wishes. The same result is obtained from the previous study result [37].

Conclusion

This study concluded that only 7.3% of the respondents (married women) in the study area practiced contraception. The data in current investigation revealed that the most common practice of contraception heard, promoted, and available at health institutions to married women are Lactation, Amenorrhea (LAM) (73%), Pills (57%), Injections (52%), Implants (40%), male Condom (25.6%), Intrauterine contraception (IUC) (19%), withdrawal (18%), female

condom (12%), standard days method (12%), emergency contraction (8.7%) and other traditional methods (3%).

In this study, women's age, residence area, women's educational level, occupation of women, knowledge about different contraceptive methods and desire for more children were identified as significant predictors of women's practice of contraception. Similarly, the sex preference of parents and support of husbands to use contraceptive methods were significant variables affecting the practice of contraception. Hence, among the potential predictor variables, educated women, urban women, women with easy access of mass media, women who had knowledge of different types/alternative contraception, women who got support from their husband had positive association with the practice of contraception. On the other hand, illiterate women, rural women, women with more desire of having children, women who had sex preference had less practice of contraception. Hence, health related education should be given for those illiterate or rural women, who had desire for more number of children and for those who had sex preference. This can be done using health extension workers at churches, mosques and different events. This helps for health staff (for easy practice of instructions given by physicians) and policy makers (to practice one of the millennium development goals) and reducing child and maternal mortality in the study area.

Even though, it is not tested its significance in current investigation, strong patriarchal culture is one of the factors in which husbands do not play a major role in contraceptive choices because of the presence of women empowerment to use the long-term contraception method. Close communication between husband and wife is expected to increase its use and is another method used to reduce the influence of husbands on contraception use.

Implications of the Study

Identifying the determinant factors influencing the use of contraceptives would help policymakers to increase understanding of barriers to access, demand, and contraceptive use among the Somaliland community. Prioritizing actions and interventions for improving family planning services will also help the government to ensure that the legal and planned frameworks for family planning in Somaliland are important.

Limitation of current investigation

This study was not without limitations. One of the limitations of the study is the current study used secondary data and some important variables that give additional information are not included here. The other limitation was different types of contraception used by the participants were not specifically indicated in the secondary data. In addition, having the qualitative study may support the quantitative result. Including such data and conducted further investigation is recommended.

Declaration Section

Ethical consideration and consent to participation

Ethical approval was obtained from Bahir Dar University, Department of Statistics research committee. In this study, the authors used secondary data obtained from Somaliland Central Statistical Agency and all methods were carried out in accordance with relevant guidelines. Informed consent was obtained from all subjects and/or their legal guardian during data collection.

Authors Contributions

DMM and DBB designed, drafted, analyzed, and interpreted the results. DBB, AST and YAS participated in design the methodology, data analysis and critically read the manuscript, and gave constructive comments for the development of the manuscript. All authors have contributed to manuscript preparation.

Availability of Data and Materials

This data is a secondary data obtained from Somaliland Statistical Agency and can be obtained from the agency upon request or from the first author using email dekamustapha@gmail.com

Competing Interests

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Consent for Publication

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