Women empowerment for abortion and family planning decision making among marginalised women in Nepal: a mixed method study

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Abstract

Background
Women empowerment is multidimensional. Women’s education, employment, income, reproductive healthcare decision making, household level decision making and social status are vital for women empowerment. Nepal is committed to achieving women empowerment and gender equality, which directly affects the reproductive health issues. This can only be achieved by addressing the issues of the poor and marginalised communities. In this context, we aimed to find the association of women empowerment with abortion and family planning decision making among marginalised women in Nepal.

Methods
A mixed-method study was conducted at selected municipalities of Morang district of Nepal from February 2017 to March 2018. Cross sectional study was conducted among 316 married marginalised women of reproductive age (15–49 years) and key informants interview was conducted among 15 representative healthcare providers and local leaders. From key informants, data were analysed using the thematic framework method. Findings obtained from two separate analyses were drawn together and meta inferences were made.

Results
Women empowered above average were 50.6%. Current use of modern contraceptives were more among below average empowerment groups (p 0.041, OR 0.593 C.I. 0.36–0.98). We could not find any statistical significant differences among women empowerment with abortion knowledge (p 0.549); family planning knowledge (p 0.495) and women’s’ decision for future use of modern contraceptives (p 0.977). Most of key informants reported that unsafe abortion was into practice.

Conclusions
Women empowerment has no direct role for family planning and abortion decision making at marginalised communities of Morang district of Nepal. There was direct influence of different organisations for seeking healthcare services on abortion and family planning despite having women empowerment.

Plain English Summary
Sustainable Development Goal (SDG-5) addresses women and girls with equal access to education,
healthcare, decent works, and their representation in political and economic decision-making processes that fuel sustainable economies and benefit societies and humanity. Women's empowerment, abortion and family planning are inter related. Easy access to contraceptive devices help reduce unsafe abortion, unintended pregnancy, reduce maternal and child health morbidity and mortality. Nepal is committed to achieving women empowerment and gender equality; fifth goal of SDG. To achieve this, there needs to be equitable involvement of all women in reproductive health service. Hence, we conducted our study among marginalised married women of reproductive age group in a district of Nepal. Our objective was to find the association of women empowerment with abortion and family planning decision making. First, we collected data on women empowerment measures, knowledge and practices on abortion and family planning methods from the marginalised women and concurrently from the same locality, we conducted key informants interview to explore further. We found that women empowerment has no significant association on abortion and family planning decision making among marginalised women. Illegal practices of abortion was reported from key informants. Current use of contraceptives devices were more in women who were below average women empowerment than above average women empowerment. Our result concluded that availability and easy access to healthcare facilities support from different governmental and non-governmental organisations and transportation facility can influence the abortion and family planning decisions even if women are empowered or not.

Background

Women's empowerment is determined by women's sense of self-worth, their right to determine choices; right to have access to opportunities and resources; right to have power to control their own lives within and outside the home; and their ability to influence the direction of social change[1][2]. Nepal became the signatory of International Conference on Population and Development (ICPD) in Cairo, Egypt in 1994, which emphasized women empowerment and reproductive rights issues. Since then, it has been a key part in Millennium Development Goal 3 (MDGs) and now on Sustainable Development Goal 5 (SDG) [3]. SDG 5 addresses women and girls with equal access to education, healthcare, decent works, and their representation in political and economic decision-making.
processes that fuel sustainable economies and benefit societies and humanity [4]. Nepal Demographic and Health Survey (NDHS) measures women empowerment in terms of employment, earnings, control over earnings, and magnitude of earnings relative to those of partners, participation in household decision-making and attitudes towards wife beating [5]. According to 2011 Nepal census, Dalit constitutes 13.6 percent of the total population [6]. Dalit by virtue of caste based discrimination and untouchability, are most backward in social, economic, educational, political and religious fields, and are deprived of human dignity and social justice [7]. Dalit women need to be included in order to achieve the country’s commitments to global family planning goals and to reach a modern contraceptive prevalence rate of 52% by 2020, the target set by the National Health Sector Strategy 2016–2021 [8]. Evidence shows that improvement in the welfare of women and closing inequality gaps can improve maternal and child health reduce mortality and contribute to socio economic development [9]. Nepal is committed to achieving women empowerment and gender equality as per SDG 5 of the United Nation [10]. This goal can be achieved by addressing the issues of the poor and marginalised community. Women's empowerment, abortion and family planning are inter related. Empowering women help exercise free choices, right to control fertility, right to take an autonomous decision on healthcare seeking behaviour, mobility, reproductive rights, ownership of assets, participation in social group and increase awareness [11][12]. However, there is a significant barrier on knowledge on abortion laws and access to safe abortion practices. Safe abortion practices and family planning methods are powerful tools to monitor women’s status within the community. Easy access to contraceptive devices help reduce unsafe abortion, unintended pregnancy, reduce maternal and child health morbidity and mortality. Women would be able to take full advantage of the broader life opportunities as they move beyond their roles of wives and mothers [11]. In order to have this type of decision-making power, women empowerment is an essential precondition [11][13]. Factors of woman empowerment contributing to abortion and family planning decision making is of paramount importance to reduce morbidity and mortality related to unsafe abortion and to increase access to family planning services. In this context, we aimed to find the association of women empowerment with abortion and family planning decision making among marginalised women in
Nepal.

Methods

A concurrent mixed-method (QUAN + qual) design was used to collect information from 11 municipalities of Morang district of Nepal from Feb 2017 to March 2018. For cross sectional study, 316 married marginalised women of reproductive age (15-49 years) and for key informants interviews, 15 healthcare providers and local leaders of same communities were taken. Multistage sampling method was used to select participants from Morang district, which has 17 municipalities. In first stage, 18 marginalised communities from 11 municipalities were included based on recommendation of the District Public Health Office, Morang. In the second stage, households were selected. First household was selected from one corner of the community and then each alternate household were selected. If the participants were not available, then an adjacent household was taken. In the third stage, one participant from a selected household available at the time of data collection, meeting the eligibility criteria was taken. In case of more than one eligible participant in a household, the youngest eligible participant was selected. For key informants, representatives key persons such as local leaders, female community health volunteers, health post in charges, primary health center auxiliary nurse midwives were selected purposively. The total time taken for each key informant interview was 25- 30 minutes. The interview conduct and reporting adheres to the Consolidated Criteria for Reporting Qualitative Research (COREQ).[14]

The independent variable was women empowerment. Generally, proxy indicators are commonly used to measure empowerment due to its multifaceted nature [15]. As there is not a standard tool to measure women empowerment, consensus was made to measure women empowerment in terms of women's biodemographic and reproductive health measures. Women empowerment score was calculated based on fifteen different variables which includes education, occupation, socioeconomic status, age at marriage, child mortality of participant, intended pregnancy, desire for future pregnancy, sex preference, ideal number of children, contraception use decision making, able to refuse sexual intercourse, ask husband to use condom during intercourse, general healthcare decision making, decision over use of income and involvement in any social group (mothers group/saving
group/women group). Maximum score for each variable was given 1 and the possible highest score was 15. The median score of all the variables of women empowerment was calculated to be 7.5. Accordingly, it was categorised into two groups after statistical consultations. Women empowerment was considered above average if the score was more than or equal to 7.5 (median value) and below average if it was below the median value. Dependent variables were abortion knowledge, abortion practice, family planning knowledge and family planning practice. The two variables (knowledge on fertile period and knowledge on abortion law: scored 1 for each right response) were used to calculate abortion knowledge where median value for abortion knowledge was 1. Above or equal to median value was considered as having abortion knowledge and below it was considered having no abortion knowledge. The single variable was used to assess the abortion practice. It was scored 1 for good practice and 0 if not. The family planning knowledge was calculated asking patients about their knowledge on modern contraceptives methods: female sterilisation, male sterilisation, intrauterine contraceptive devices (IUCD), depo-provera, implant, oral contraceptive pills (OCPs) and male condom. Participants responding yes were scored 1 for each method; of which the total score came to be 7 and 0 for wrong response. The median score for family planning knowledge was 6. Participants scoring above and equal to median value were considered having knowledge of family planning and below having no knowledge. For practices of family planning methods two variables: currently practicing any modern contraceptive methods and thinking of using contraception in the near future were used separately. The good practice was scored one and bad practice scored 0 in each variable.

Data analysis

Quantitative: We performed univariate analysis to find the sociodemographic characteristics. For bivariate analysis, chi square test was used to find the association between dependent and independent variables. Odds ratio and confidence interval were calculated and p value less than 0.05 at 95% confidence interval was considered as statistically significant.

Key informants interviews

Consensus on selecting 15 key informants was made when saturation point was received at 12th key
informant. Thematic approach was used to analyse the data. The audiotaped interviews were transcribed verbatim independently by two investigators (HKC and SP). The investigators (HKC and SP) reread through the transcripts several times to familiarise themselves with the data. The text was then divided into meaningful units, such as phrases and quotes, and the meaningful units were then condensed. The condensed meaningful units were then abstracted and labelled with codes independently and checked for agreement. Then the codes were compared based on similarities and differences and categorized. The categories were further discussed by all the investigators for identification, formulation and finalisation of themes and subthemes related to women empowerment, abortion and family planning knowledge and practices. The findings obtained from two separate analyses were drawn together to form meta inferences.

Results

Table 1: Baseline characteristics of participants (n=316)

The baseline characteristics of participants is listed in table 1. Majority (40.2%) belonged to 20-24 years with Mean±SD of 25.68 ± 6.38 years. Almost 73% were dalit, 38.3% had informal education and 88.6% were housemaker. Most (67.1%) of them belonged to nuclear family. Almost 95% had ever given birth: 39.3% had ≥ 3 children, 5.1% had stillbirth, 2.6% twin pregnancy and 67.7% were multigravida. During data collection, 9.2% were pregnant.

Table 2: Women empowerment variables

Fifteen women empowerment variables are included in table 2. We found that 76.9% were literate, 88.6% housemaker, 62.7% upper lower socioeconomic status and 82.6% had early marriage history (12-19 years). With regards to fertility preferences: 91.4% had history of intended pregnancy, 33.1% desire for future pregnancy, 12% had history of under 5 mortality, 30.1% wish to have 2 children irrespective of sex of children delivered. In reproductive healthcare decision making: 83.7% couples decide jointly on selecting contraception, 61.1% women were able to refuse sexual intercourse with their husbands, half (50.8%) women could ask their husband to use condoms during intercourse. Most couples (88.9%) had joint decisions on general healthcare seeking behaviours and 90.5% couples jointly decided on using income. More than half (51.6%) did not belong to any social group.

Table 3: Knowledge and practice on abortion and family planning
We found only 27.8% had knowledge on fertile period and 2.5% had knowledge on legal provision of abortion. Almost 14% had history of abortion; among them 1 participant did not receive post abortion care and family planning services. Seventy-seven percent had knowledge on modern contraceptive methods. Nearly two-third (63.84%) women were currently using contraception, in which majority (41.6%) were depo-provera users, 39.3% women had sterilisation and 47.4% were thinking to use it in the near future (table 3).

Table 4: Association of women empowerment with abortion and family planning
| Women empowerment | Abortion Knowledge | Post abortion care and family planning counseling received | Family Planning knowledge | Current use of contraceptives |
|-------------------|-------------------|----------------------------------------------------------|---------------------------|-----------------------------|
|                   | Yes | No | Yes | No | Yes | No | Yes | No |
| Above average     | 49  | 111 | 26  | 1  | 121 | 39 | 80  |     |
|                   | (30.6%)  | (69.4%) | (96.3%) | (3.7%) | (75.6%) | (24.4%) | (58%) |     |
| Below average     | 43  | 113 | 16  | 0  | 123 | 33 | 93  |     |
|                   | (27.6%)  | (72.4%) | (100%) | (0%) | (78.8%) | (21.2%) | (69.9%) |     |
| OR (CI)           | 1.16 (0.713-1.886) | NA<sup>a</sup> | 0.832 (0.49-1.41) | 0.59 (0.36-0.98) |
| P value           | 0.549 | NA<sup>a</sup> | 0.495 | 0.04 |

<sup>a</sup> Not applicable; <sup>b</sup>P value <0.05 considered statistical significant

Current use of modern contraceptives were more among below average women empowerment groups (p 0.041, OR 0.593 C.I. 0.36-0.98). We could not find any statistical significant differences among women empowerment with abortion knowledge (p 0.549); family planning knowledge (p 0.495) and women’s decision for future use of modern contraceptives. (p 0.977) (Table 4).

Key informant interviews

Characteristics of participants

Key informant interviews were conducted with 15 key persons of the same community where eight were healthcare providers and seven were local leaders. The mean age of participants was 44.67 years with standard deviation of 13.38 years ranging from 26 years to 62 years. Majority of them were male (60%) and all were literate.

Present status of marginalised women

Majority of the informants said illiteracy, poverty and domestic violence are the major issues of marginalised women. They are completely dependent on their husband and had to tolerate any types of physical or emotional violence.

*The status of women specially marginalised women in our society is very poor. The main reason is lack of education and poverty. Our ward is under municipality but the status of the society is worse than the VDC because the population and the area coverage of our ward is bigger and we have access to only one health post here.* (Local leader, Male)
The present status of marginalised women is poor day by day, Ammm.... Loan support from NGOs, INGOS, co-operative limited did somehow help in earlier days but recently all the families are being affected by the poor socioeconomic status and inability to pay loans offered by the banks. (Local leader, Male)

Abortion knowledge and practice
One informant reported, abortion is common among 20-35 years female in their locality. Sometimes abortion is practiced illegally after sex determination even at 3-4 months of pregnancy. One health worker often stated that unmarried teenagers, factory workers even seek to health posts with complication of induced illegal abortion. Causes of abortion was unwanted pregnancy, unmet family planning and default of depo provera. As stated by healthcare providers, DPHO, IPAS has been constantly supporting abortion services in some primary health centers (PHC) and they often do have medical abortion and urinary pregnancy test services available.

“Abortion is practiced with some native techniques or with use of herbals at home by some females and come to health centers with complication like bleeding, infection or incomplete expulsion.” (Healthcare Provider, Female)

“Nowadays extra marital sexual practices have landed up with many abortion cases.” (Healthcare Provider, Male)

Many attempt to take medicines at home from nearby clinics to avoid disclosure. While many did not visit local health centers due to stigma and fear of unacceptance in society. (Healthcare Provider, Female)

“Some practiced abortion after sex determination illegally.” (Healthcare Provider, Female)

One of the Muslim local leader stated that their society do not consider abortion as a good practice even though the people have some knowledge in it.

We do not consider abortion as good things in our society. If anyone had induced abortion in 2 or 3 months of pregnancy, our society views them as a social stigma. However, people are a little aware and are positive regarding abortion nowadays, but abortion practice is uncommon in our society. (Local leader, Male)
Family planning knowledge and practice
Many informants said that people’s awareness on family planning methods is improving and provision of family planning services has been provided by primary healthcare centers, female community health volunteers (FCHVs), mobile camps, NGOs, INGOs, Marie stopes and Zonal hospitals. However, people demand for all types of free of cost family planning services in their nearby primary healthcare centers.

We have copper-T, male condom, injection, one is electric operation and one is hand operation. Some are using these methods and some not. We still have a lack of public awareness on these methods. Most (80%) seek services from primary healthcare centers and 20% goes to Koshi Zonal Hospital. (Local leader, Female)

“People demand for free of cost availability of modern family planning services in health centers” (Healthcare Provider, Male)

“Mobile camp on permanent sterilization is organised sometimes in community health centers but very often they have to take service from Marie stopes.” (HCP, Female)

Cafeteria choice for family planning was not into practice. Female users were more than male users. Many couples practiced natural methods like lactational amenorrhea, withdrawal and emergency contraception. They preferred to take temporary methods, especially depo-provera.

Females use more family planning methods than male. (Local leader, Male)

“Many people use family planning only after 2-3 children.” (Healthcare Provider, Female Community Health Volunteer)

“The client’s mind set is already fixed on using depo-provera, they don’t want to hear about any other methods.” (Healthcare Provider, Male)

“Even elderly females prefer using depo knowingly and unknowingly.” (Healthcare Provider, Female Community Health Volunteer)

“Yes, many newly married male come to me and ask for advice on natural methods. They were not
satisfied with family planning devices thinking of its side effects and decrease in sexual pleasure.” (Healthcare Provider, Female)

Most clients asked us - Why don't you have provision of distributing emergency contraception pills in your health center? We demand for these services.” (Healthcare Provider, Male)

Discussion
This study employed the relationship of women empowerment with abortion and family planning decision making among marginalised women in a district of eastern part of Nepal. Though Nepal is continuously striving to improve women’s status within the society, there remains a disparity and inequality among ethnically, socially, politically, economically and geographically disadvantaged groups. In our study, we defined marginalised women as those women who are socially, economically, politically and by ethnicity deprived. Majority of marginalised women belongs to terai dalit and terai madhesi. It is very essential to cover all spectrums of women in order to improve women’s’ status within the country. Hence, an effort has been made to study the association of women empowerment among marginalised women in abortion and family planning knowledge and practices quantitatively and key informants interviews were taken from same communities to support quantitative findings. Generally, proxy indicators are commonly used to measure empowerment due to its multifaceted nature [15]. We measured women empowerment in terms of different factors i.e. education, occupation, socio-economic status, marital age, fertility choices, reproductive healthcare decision making, general healthcare decision making, decision for income use, and involvements of the women in social groups. Our study found that more than three fourth (76.9%) are literate women, but only 11.4% are working, nearly two third (62.7%) with upper lower socioeconomic status followed by lower middle socio-economic status (37.3%) and every four in five women with early marital history (12–19 years). In contrast to our findings, further analysis of the report NDHS 2011, identified terai/madhesi dalit and muslim community having highest illiteracy rate (83% and 76%, respectively) compared to brahmin chhetri (27.3%), a geographical variation among terai/madhesi dalit women (83%) versus hill dalit women (43%) [17]. The differences may be due to improvement in the literacy
rate over the time as the government has given priority over improvement in girls' education, especially those of poorer communities. Findings from our study was similar to where majority of terai/madhesi, muslim, and terai/madhesi dalit women were unemployed (48.6%, 57% and 19.3% respectively). The report also supports our findings, which states dalit to be the poorest community as compared to other ethnic groups [17]. The proportion of women employed has decreased from 83% in 2006, 77% in 2011 to 68% in 2016 [18]. From key informant’s interviews, in our study, it was found that poverty, illiteracy, unemployment and dependence on husbands were common issues among marginalised women. Improvement in women’s education, occupation and income will give higher opportunities to women, increase access to financial resources and autonomous decision making over their life issues to whom and when to get married, when and where to have children. Being employed and having a cash income are important contributors to improvement in maternal and child health. Hence, these factors have been included as a measure of women empowerment. Despite variation in defining women’s empowerment; evidence suggests that there is a two way relationship between women’s empowerment and fertility i.e. that lower fertility leads to higher women’s empowerment and vice versa [19, 20]. NDHS measures fertility preferences in terms of intended pregnancy, desired for future pregnancy, ideal number of children and actual children [18]. In references to those terms, we defined fertility preferences as those women who have their own decision-making in fertility preferences related variables. Women with history of intended pregnancy, desired for future pregnancy, under five mortality, no sex preferences, and two ideal number of children were included as domain of fertility preferences in women empowerment. More than four in five women (91.4%) had intended pregnancy, 12% had history of under 5 mortality, a greater percent (33.1%) of women desire for future pregnancy, 30.1% have 2 ideal number of children and 33.1% does not have sex preferences. According to NDHS 2016, the mean ideal number of children is 2.2 among currently married women, 10% of currently married women want to have another child soon, 14% want to wait at least 2 years, 81% of births were wanted at the time of conception, 12% were mistimed, and 7% were unwanted. Total fertility rate (TFR) is 2.3 children per woman [18]. The mean ideal number of children is highest in province 2 (2.5), terai region (2.3) and TFR is highest in province 6 (2.8).
choices is linked with reduced rate of unintended pregnancy, unsafe abortion and women’s’ decision on use of family planning devices. Unintended pregnancy, couple influences over fertility choices, child mortality, sex preferences and families and society’s domination over ideal number of children increases the total fertility rate [21][22][23]. Women’s autonomy in decision making over consensual sexual relations, contraception use and access to sexual and reproductive health services is key to their empowerment and the full exercise of their reproductive rights [24]. A woman’s ability to say “no” to her husband/partner if she does not want to have sexual intercourse, decisions being made “mainly by the partner”, as opposed to decision being made “by the husband or wife alone on contraceptives use is well aligned with the concept of sexual autonomy and women’s empowerment [24]. Hence, we included women’s ability to reproductive healthcare decision making as a measure of women empowerment. In this study, more than four out of five (83.7%) couples decided jointly on using contraception, three fifth (61.1%) women were able to refuse sexual intercourse with their husbands, but in Province 1 it was 92.8% [18] and terai women being the least (85.4%) compared to hills and mountain women (95.5% and 91.4%) respectively; half (50.8%) women were able to ask their husband to use condoms during intercourse compared to province 1 (86.1%) and terai women were least(73.4%) compared to mountain and hill (79.6 and 88.3%) [18]. In contrast to our findings, one-fifth women could not refuse their partners’ request for sexual intercourse while one out of four could not demand the use of condoms by their partners [25].

Women who make their own decision regarding seeking healthcare for themselves are considered empowered to exercise their reproductive rights [24], So we included women’s response to general healthcare seeking behaviour as a measure of women empowerment. In Nepal, decision-making in most aspects of life has been men’s domain, one-fourth of women (26%) make their own decisions on healthcare, but a greater percentage (35%) do not participate in decisions in Nepal [17]: but our findings gave a satisfying result that more than four fifth couples (88.9%) jointly made decisions about general healthcare seeking behaviours and most couples (90.5%) jointly decided on using income. Exception to our findings, a national survey reported majority of Terai/Madhesi and Muslim women, did not participate in decisions about their own healthcare; where nearly all caste, ethnic,
and religious groups decisions on women’s healthcare are made by women themselves or jointly with their partners [17]. More than half (51.6%) did not belong to any social group in our study. Evidence suggests that women’s involvement in social groups, women’s mobilization and interaction with others help them to communicate their issues with their friends. Friends and communities can be the source of information on various reproductive health issues like access to family planning methods [17], abortions knowledge and practices. Hence, women’s involvement in social groups has been kept as an affirmative response to women empowerment.

Our study found that there was almost similar outcome on above average women empowered vs below average women empowered (50.6% Vs 49.4% respectively). Knowledge on abortion was more among above average empowered women compared to those who were below averaged but there was no statistical significant association. Only 29.1% women had knowledge on abortion laws in our study. Most of key informants reported that induced illegal abortion was quite common among teenagers and factory workers and they often present in health post with post abortion complications; though 13.6% reported abortion history. The contradictory findings in our study may be because abortion practice is linked with issues of morality and stigma. A national survey of Nepal stated that only two-fifths of women aged 15–49 years had knowledge on abortion law; every one in four women had experienced post-abortion complications: but no abortion complications was reported from terai dalit/ madhesi and muslim [17]. Even after the legislation of abortion in Nepal since 2002, unsafe abortion remains the third highest (7%) direct cause of maternal death in Nepal [18]. Studies suggest that patriarchal system, low literacy rates, social and cultural norms, limited sexual reproductive health and rights (SRHR) autonomy and knowledge, poor socio-economic status, geographic isolation as well as abortion stigma as the reason for lack of knowledge and unsafe practice in Nepal [26] [27] [28].

We found that the majority of the participants had knowledge on family planning methods. NDHS 2016 has also similar findings that reported knowledge on contraceptive methods is nearly universal in Nepal. Contraceptive prevalence rate for modern methods since 2006 to 2016 is stagnant (53%) despite improvement from 1996. Seventy-seven percent of women aged 15–49 years intend to use
family planning in the future [18]; which is highest from our study (47.4%). More than three fifth (63.4%) women were current using modern methods of contraception in our study, but NDHS report suggested that women from terai region were the least users (43.1%) compared to hills and mountain (42.4% and 42.6% respectively) majority were depo provera (41.6%) followed by female sterilization (39.3%) users in our study. Use of any method of modern contraception and female sterilization in province 1 was 40% and 10% respectively [18]. From healthcare providers, we found that cafeteria choice for family planning was not into practice and females were consumers of family planning methods. In this study, increment in female sterilization is due to the mobile camps organised by various non-government organisations and government organisations, practice of early age marriage and influence form their society. Similar to our findings, female sterilization was most common among women living in Terai [29]. Studies reported that caste based discrimination and continuing social exclusion resulted in not visiting health facilities by ethinical minorities to avoid potential discrimination and poor quality care [30][31][32]. In contrast to our study, increased use of family planning was found with increased education and higher economic status [32]. In another study from Nepal, currently not working, poor, muslim and janajati ethnicity and women who have no autonomy in household decision were non-users of family planning method [33]. Another study reported that various women factors like higher education, good socioeconomic status, involvement in household decision making, autonomy on their health seeking behaviour, participation in fertility choices, participation in income generating activities, access to information and country’s socio-cultural and health system context are more likely to decide and use contraceptive methods [34][35][36]. We did not find any significant difference between women empowerment with knowledge and practice of family planning methods. In contrary, we found below averaged empowered women currently practicing family planning methods than women of above average. Similar to our finding, a DHS report from Sub Saharan Africa found that women empowerment was less important in determining contraceptive use; attaining higher education was not much important in choosing method effectiveness and a country-specific norms and institutions may restrict women in their decision-making capacities, as evidenced from the report of Kenya [37]. Possible explanation for this may be
because there was not a major difference between below average women empowered versus above averaged women empowered, the societal influences, geographical feasibility (terai region) for easy transportation, prime focused of various governmental and non governmental organization on reproductive health programmes, accessibility of safe abortion and family planning methods, nearby health centers, mobile camps and practising sterilization because of their early age reproduction and fulfilment of desired children. Many issues of family planning and abortion are couple decision. Failure to include the husband's perspective limits this study's findings.

Conclusions
Our study concluded that Women empowerment has no direct role for family planning and abortion decision making at marginalised communities of Morang district of Nepal. There was direct influence of different organisations for seeking healthcare services on abortion and family planning despite having women empowerment.

Recommendations
Further study in a larger context, husband and community women involvement in the research group is recommended. Abortion is still linked with stigma and social isolation hence priority must be given on improvement of knowledge on abortion law and safe abortion practices by local governments.

References
1. Tshuma D, Kajala E. Empower Women - Five major components of women’s empowerment [Internet]. EmpowerWomen. [cited 2020 Apr 14]. Available from: https://www.empowerwomen.org/en/community/discussions/2016/11/five-major-components-of-womens-empowerment

2. Alsop R, Heinsohn N. Measuring Empowerment in Practice: Structuring Analysis and Framing Indicators [Internet]. Policy Research Working Papers. 2005. Available from: http://dx.doi.org/10.1596/1813-9450-3510

3. International Conference on Population and Development (ICPD) [Internet]. United Nations Population Fund. 1994 [cited 2020 Apr 12]. Available from: https://www.unfpa.org/events/international-conference-population-and-development-
4. Martin, Blazhevska V. United Nations: Gender equality and women’s empowerment [Internet]. United Nations Sustainable Development. [cited 2020 Apr 17]. Available from: https://www.un.org/sustainabledevelopment/gender-equality/

5. Ministry of Health, Nepal, New ERA, And ICF. Nepal Demographic and Health Survey [Internet]. Kathmandu, Nepal: Ministry of Health, Nepal; 2017 Nov [cited 2020 Apr 14]. Available from: https://www.dhsprogram.com/pubs/pdf/fr336/fr336.pdf

6. Government of Nepal National Planning Commission Secretariat Central Bureau of Statistics Ramshah Path, Kathmandu, Nepal. Population Monograph of Nepal Volume 1 Population dynamics [Internet]. 2014 [cited 2020 Apr 2]. Available from: https://nepal.unfpa.org/sites/default/files/pub-pdf/PopulationMonograph2014Volume1.pdf

7. Dalit Welfare Organization. Dalit Welfare Organisation - NGO, Nepal - Eliminating Caste Discrimination [Internet]. Dalit Welfare Organization (DWO). [cited 2020 Apr 14]. Available from: http://dwo.org.np/v1/dalit.php

8. Ministry of Health, Government of Nepal. Nepal Health Sector Strategy Plan 2016-2021 [Internet]. Ministry of Health, Government of Nepal; 2017 [cited 2020 Apr 13]. Available from: http://www.nhssp.org.np/NHSSP_Archives/health_policy/NHSS_implementation_plan_2016_2021_february2017.pdf

9. Fisher B, Naidoo R. The Geography of Gender Inequality. PLoS One. 2016 Mar 1;11(3):e0145778.

10. Derek Osborn Amy Cutter. Universal sustainable development goals understanding the transformational challenge for developed countries [Internet]. 2015 May [cited 2020 Apr 1]. Available from:
11. Biswas TK, Kabir M. Women’s Empowerment and Current use of Contraception in Bangladesh [Internet]. Vol. 12, Asia-Pacific Journal of Rural Development. 2002. p. 1–13. Available from: http://dx.doi.org/10.1177/1018529120020020201

12. Hameed W, Azmat SK, Ali M, Sheikh MI, Abbas G, Temmerman M, et al. Women’s Empowerment and Contraceptive Use: The Role of Independent versus Couples’ Decision-Making, from a Lower Middle Income Country Perspective [Internet]. Vol. 9, PLoS ONE. 2014. p. e104633. Available from: http://dx.doi.org/10.1371/journal.pone.0104633

13. Blanc AK. The Effect of Power in Sexual Relationships on Sexual and Reproductive Health: An Examination of the Evidence [Internet]. Vol. 32, Studies in Family Planning. 2001. p. 189–213. Available from: http://dx.doi.org/10.1111/j.1728-4465.2001.00189.x

14. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. Int J Qual Health Care. 2007 Dec;19(6):349–57.

15. Sebayang, Susy K., Ferry Efendi, and Erni Astutik. Women’s Empowerment and the Use of Antenatal Care Services in Southeast Asian Countries [Internet]. Rockville, Maryland, USA: ICF; 2017 Jul [cited 2020 Apr 12]. Report No.: DHS Working Paper No. 129. Available from: https://www.dhsprogram.com/pubs/pdf/WP129/WP129.pdf

16. Tulika Singh Sanju Sharma. Socio-economic status scales updated for 2017. International Journal of Research in Medical Sciences. 2017 Jul; 5 ( 7):3264–7.

17. Jhabindra Prasad Pandey, Megha Raj Dhakal, PhD, Sujan Karki, Pradeep Poudel, Meeta Sainju Pradhan. Maternal and Child Health in Nepal: The Effects of Caste, Ethnicity,
and Regional Identity Further Analysis of the 2011 Nepal Demographic and Health Survey [Internet]. Kathmandu, Nepal March 2013 [cited 2020 Apr 7]. Available from: https://www.dhsprogram.com/pubs/pdf/FA73/FA73.pdf

18. Ministry of Health Ramshah Path, Kathmandu Nepal New ERA Kathmandu, Nepal The DHS Program ICF Rockville, Maryland, USA. Nepal Demographic and Health Survey [Internet]. 2017 Nov [cited 2020 Apr 11]. Available from: https://www.dhsprogram.com/pubs/pdf/fr336/fr336.pdf

19. Atake E-H, Ali PG. Women’s empowerment and fertility preferences in high fertility countries in Sub-Saharan Africa. BMC Womens Health. 2019 Apr 5;19(1):1-14.

20. Phan LD. Women’s empowerment and fertility preferences in Southeast Asia. 2016 Mar 23 [cited 2020 Apr 11]; Available from: http://hdl.handle.net/2123/15251

21. Brunson J. Son Preference in the Context of Fertility Decline: Limits to New Constructions of Gender and Kinship in Nepal. Stud Fam Plann. 2010 Jun;41(2):89.

22. Elyse A. Jennings RSP. The Influence of Wives’ and Husbands’ Fertility Preferences on Progression to Third Parity Births in Nepal, 1997 to 2009. Popul Stud. 2016 Mar;70(1):115.

23. Yamada T. Causal Relationships between Infant Mortality and Fertility in Developedand Less Developed Countries [Internet]. 1984. Available from: http://dx.doi.org/10.3386/w1528

24. The Global Health Observatory [Internet]. World Health organisation. [cited 2020 Apr 11]. Available from: https://www.who.int/data/gho/indicator-metadata-registry/imr-details/4986

25. Darteh EKM, Doku DT, Esia-Donkoh K. Reproductive health decision making among Ghanaian women. Reprod Health. 2014 Mar 15;11(1):1-8.

26. Ajit Pradhan,Bal Krishna Suvedi,Sarah Barnett,Sharad Kumar Sharma,Mahesh
Puri, Pradeep Poudel, Shovana Rai Chitrakar, Naresh Pratap K.C., Louise Hulton. Nepal Maternal Mortality and Morbidity study 2008/2009 [Internet]. 2010 May [cited 2020 Apr 11]. Available from: http://nnfsp.gov.np/PublicationFiles/aaef7977-9196-44d5-b173-14bb1cce4683.pdf

27. Thapa S, Sharma SK, Khatiwada N. Women’s knowledge of abortion law and availability of services in Nepal [Internet]. Vol. 46, Journal of Biosocial Science. 2014. p. 266-77. Available from: http://dx.doi.org/10.1017/s0021932013000461

28. Puri M, Regmi S, Tamang A, Shrestha P. Road map to scaling-up: translating operations research study’s results into actions for expanding medical abortion services in rural health facilities in Nepal. Health Res Policy Syst. 2014 May 13;12(1):1-7.

29. Dahal GP, Padmadas SS, Hinde PRA. Fertility-limiting behavior and contraceptive choice among men in Nepal. Int Fam Plan Perspect. 2008 Mar;34(1):6-14.

30. Deborah Thomas, Dr. Stephen Bell, Kapil Dahal, Rachel Grellier, Chhaya Jha, Sitaram Prasai, Hom Nath Subedi. Voices from the Community: Access to Health Services A Rapid Participatory Ethnographic Evaluation and Research (PEER) Study, Nepal [Internet]. Government of Nepal (GoN), Population Division Ministry of Health and Population (MoHP), with support from Nepal Health Sector Support Programme (NHSSP); 2012 [cited 2020 Apr 11]. Available from: http://www.nhssp.org.np/NHSSP_Archives/gesi/PEER_study_2012.pdf

31. Sharma SK, Ghimire DR, Pratap N. Ethnic differentials of the impact of Family Planning Program on contraceptive use in Nepal [Internet]. Vol. 25, Demographic Research. 2011. p. 837-68. Available from: http://dx.doi.org/10.4054/demres.2011.25.27

32. Najafi-Sharjabad F, Zainiyah Syed Yahya S, Abdul Rahman H, Hanafiah Juni M, Abdul
Manaf R. Barriers of modern contraceptive practices among Asian women: a mini literature review. Glob J Health Sci. 2013 Jul 22;5(5):181–92.

33. Ramesh Adhikari, Devaraj Acharya, Chhabi Lal Ranabhat, Ranju KC. Factors Associated with Non-Use of Contraceptives among Married Women in Nepal. Journal of Health Promotion [Internet]. 2019 Sep 6 [cited 2020 Apr 12];7. Available from: https://www.nepjol.info/index.php/jhp/article/view/254

34. Corroon M, Speizer IS, Fotso J-C, Akiode A, Saad A, Calhoun L, et al. The Role of Gender Empowerment on Reproductive Health Outcomes in Urban Nigeria. Matern Child Health J. 2014 Jan;18(1):307.

35. Yaya S, Uthman OA, Ekholuenetale M, Bishwajit G. Women empowerment as an enabling factor of contraceptive use in sub-Saharan Africa: a multilevel analysis of cross-sectional surveys of 32 countries. Reprod Health. 2018 Dec 20;15(1):1–12.

36. Pratley P. Associations between quantitative measures of women’s empowerment and access to care and health status for mothers and their children: A systematic review of evidence from the developing world. Soc Sci Med. 2016 Nov; 169:119-31.

37. Larsson C, Stanfors M. Women’s Education, Empowerment, and Contraceptive Use in sub-Saharan Africa: Findings from Recent Demographic and Health Surveys. Etude Popul Afr. 2014 Aug 6; 28(0):1022–34.

Declarations

**Ethics approval and consent to participate:** Ethical clearance was obtained from the Institutional Review Committee (IRC) of B. P. Koirala Institute of Health Sciences, Nepal. Further permission of data collection was taken from the District Public Health Office of Morang district. Informed written consent was obtained from each participant and confidentiality was maintained. The interview of each participant was taken in a private room. Participants were informed that they have the right to withdraw from participation at any time of interview.

**Consent for publication:** Not applicable.
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Authors’ contributions
HKC contributed to designing concepts, preparing study protocol, literature search, data collections, data analysis, and manuscript preparation. MS and NP assisted HKC in designing study protocol, reviewing findings, finalising key informants results. PP helped in tools validation, literature search, finalising analysis of key informants. SBP assisted HKC in approaching the community, key informant interviews, data analysing and manuscript preparation. SRN contributed to statistical analysis. All authors contributed for final review of the manuscript.

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**Tables 1 And 2**  
Table 1: Baseline characteristics of participants (n=316)

| Characteristics | n (%) |
|-----------------|-------|
| Characteristics | n (%) |

24
| Age group (year) | Mean ± SD of 25.68 ± 6.38 years. |
|-----------------|---------------------------------|
| 15-19           | 35 (11.1)                       |
| 20-24           | 127 (40.2)                      |
| 25-29           | 69 (21.8)                       |
| 30-34           | 45 (14.2)                       |
| 35-39           | 20 (6.3)                        |
| 40-44           | 14 (4.4)                        |
| 45-49           | 6 (1.9)                         |
| Ethnicity       |                                 |
| Dalit           | 230 (72.8)                      |
| Janajati        | 42 (13.3)                       |
| Muslim          | 6 (1.9)                         |
| Madhesi         | 38 (12.0)                       |
| Education       |                                 |
| Primary         | 51 (16.1)                       |
| Lower Secondary | 29 (9.2)                        |
| Secondary       | 37 (11.7)                       |
| Higher Secondary| 5 (1.6)                         |
| Informal        | 121 (38.3)                      |
| Illiterate      | 73 (23.1)                       |
| Education (Head of Household) |             |
| Primary         | 61 (19.3)                       |
| Lower secondary | 44 (13.9)                       |
| Secondary       | 23 (7.3)                        |
| Higher secondary| 4 (1.3)                         |
| Informal        | 3 (0.9)                         |
| Illiterate      | 98 (31)                         |
| Occupation      |                                 |
| Category                          | Count (Percentage) |
|----------------------------------|--------------------|
| House maker                      | 280 (88.6)         |
| Daily Wedge                      | 23 (7.3)           |
| Shop/Tailor                      | 8 (2.5)            |
| Factory Worker                   | 5 (1.6)            |
| Family type                      |                    |
| Nuclear                          | 212 (67.1)         |
| Joint                            | 104 (32.9)         |
| Occupation (Head of Household)   |                    |
| Unskilled worker                 | 138 (43.7)         |
| Semi-skilled worker              | 116 (36.7)         |
| Skilled worker                   | 45 (14.2)          |
| Clerical, Shop-owner, Farmer     | 16 (5.1)           |
| Semi-Profession                  | 1 (0.3)            |
| Family Income Per Month (in Rs)  |                    |
| ≤2300                            | 1 (0.3)            |
| 2301 – 6850                      | 22 (7.0)           |
| 6851 – 11450                     | 56 (17.7)          |
| 11451 – 17150                    | 114 (36.1)         |
| 17151 – 22850                    | 79 (25.0)          |
| 22851 – 45750                    | 44 (13.9)          |
| Birth history (Yes)              |                    |
| 1                                | 300 (94.9)         |
| 2                                | 87 (29.0)          |
| ≥ 3                              | 95 (31.7)          |
| 118 (39.3)                       |                    |
| Still born history (n=300)       | 4 (1.3)            |
| Twin pregnancy history (n=300)   | 8 (2.6)            |
| Current pregnancy status         | 29 (9.2)           |
| Gravida and parity of participants|                    |
| Nulliparous                      | 3 (0.9)            |
| Primigravida                     | 77 (24.7)          |
| Characteristics                        | n (%)                   |
|---------------------------------------|-------------------------|
| **Multigravida**: >1 to 4 times pregnant | 214 (67.7)             |
| **Grandmultiparous**: ≥5 times pregnant | 20 (6.3)               |

*Multigravida: >1 to 4 times pregnant **Grand multiparous: ≥5 times pregnant

Table 2: Women empowerment variables

| Characteristics                        | n (%)                   |
|---------------------------------------|-------------------------|
| Education status (n=316)              |                         |
| Illiterate                            | 73 (23.1)               |
| Literate                              | 243 (76.9)              |
| Occupation (n=316)                    |                         |
| Housemaker                            | 280 (88.6)              |
| Other than housemaker                 | 36 (11.4)               |
| Socio-economic status* (n=316)        |                         |
| Upper lower                           | 198 (62.7)              |
| Lower middle                          | 118 (37.3)              |
| Age at marriage (n=316)               |                         |
| 12-19 years                           | 261 (82.6)              |
| 20-30 years                           | 55 (17.4)               |
| Fertility preferences                 |                         |
| Intended pregnancy history (n=313)a   | 286 (91.4)              |
| Desire for future pregnancy (n=287)b  | 95 (33.1)               |
| Child mortality history (n=300)       | 36 (12.0)               |
| No sex preferences of child (n=316)   | 95 (30.1)               |
| Ideal number of children i.e. 2 (n=316) | 95 (30.1)             |
| Reproductive healthcare decision making (n=312)** |             |
| Decision making on using contraception |                         |
| Couple                                | 261 (83.7)              |
| Single/In laws                        | 51 (16.3)               |
| Category                                                                 | Count (%)          |
|-------------------------------------------------------------------------|--------------------|
| Able to refuse undesired sexual intercourse                               | 190 (61.1)         |
| Able to ask husband to use condom during intercourse                     | 158 (50.8)         |
| General healthcare decision making (n=316)                              |                    |
| Couple                                                                  | 281 (88.9)         |
| Other than couple                                                       | 35 (11.1)          |
| Decision for income use (n=316)                                         |                    |
| Couple                                                                  | 286 (90.5)         |
| Other than couple                                                       | 30 (9.5)           |
| Involvement in social group (n=316)                                     |                    |
| Mothers/saving/women's group                                            | 153 (48.4)         |
| Doesn't belong to any group                                             | 163 (51.6)         |
| Women empowerment (n=316)                                                |                    |
| Above average                                                           | 160 (50.6)         |
| Below average                                                           | 156 (49.4)         |

\(^a^{Including at least one previous pregnancy history; }^{bCurrent pregnant status excluded; }^{* Modification of Kuppuswamy’s socioeconomic status scale in context to Nepal[16]}^{** single women and widow excluded)}

**Supplementary Files**
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