

**Trend and Determinants of Knowledge and Practice of Birth
Registration in Nepal: Evidence from
Nepal Multiple Indicator Cluster Survey**

**Research Brief Prepared by
Dr. Sharad Kumar Sharma
Undersecretary (Statistics)**



Government of Nepal

Office of the Prime Minister and Council of Ministers

Result Management Division

Statistics Section

2078 Poush



Research Brief

Trend and Determinants of Knowledge and Practice of Birth Registration in Nepal: Evidence from Multiple Indicator Cluster Survey

Civil registration is the fundamental means of providing legal identity, and a basic human right that enables access to services including health and education. Hard to reach and marginalized groups of the population are believed to be at higher risk of not having birth registered and likely to be in the vicious circle of marginalization. Nepal has made a notable progress on birth registration. However, there is lot more to do to meet the Sustainable Development Goal (SDG) of attaining universal coverage. It is also not clear about factors contributing to the practice of birth registration in Nepal. Using data on Multiple Indicator Cluster Survey (NMICS) 2014 and 2019 and multilevel modelling approach, we examined trend and determinants of birth registration as well as knowledge about how to register birth in Nepal. We also provided key policy recommendations to improve the status of birth registration in Nepal.

Key findings:

1. Birth registration coverage of child under five-year age increased from 58% in 2014 to 77% in 2019 and knowledge about process of birth registration among mother/caregiver of the child whose birth was not registered increased from 86% in 2014 to 90% in 2019.
2. Twenty-nine percent of the variation in birth registration and 45 percent of the variation in knowledge about process of birth registration was attributed to cluster.
3. Odds of birth registration of a child under age five-year was 32% higher in 2019 compared to that in 2014. However, there was no significant difference in knowledge about process of birth registration between 2014 and 2019.
4. The odds of birth registration of a child under age five year was increased with age of child, but there was no significant difference in knowledge about process of birth registration.
5. Mother /Caregiver's level of education was positively associated with the odds of birth registration coverage as well as the odds of knowledge about process of birth registration.
6. Mother's/Caregiver's who have exposure to radio at-least once a week were more likely to register birth of their child and more likely to know how to register birth.
7. Birth registration coverage as well as knowledge about process of birth registration increased by household economic status measured by wealth quintile.
8. Ethnicity has been found as significant predictor for birth registration.
9. Key finding9. Karnali Province has higher odds of birth registration than Province1, Province2, and Bagmati Province have significantly lower odds of birth registration than Province1. Similarly, Province2 and Sudurpaschim Provinces have significantly higher odds of knowledge about process of birth registration than in Province1.

Background

Civil registration is defined as “universal, continuous, permanent and compulsory recording of vital events provided through decree of regulation in accordance with the legal requirement of each country”. As shown in Figure1, a series of policy and programmatic developments have been conducted

to establish civil registration system in Nepal. Currently over 6239 local registrars are deployed in 217 municipalities for civil registration. Birth registration in Nepal is compulsory and every birth has to be registered within 35 days of delivery. But, birth registration coverage in Nepal was only about 77% in 2019, which is somewhere in the middle among the countries in SAARC region (Figure2). Over the thirteen years from 2006 to 2019, Nepal has made a significant progress on birth registration coverage, by increasing it from 35% in 2006 to 77% in 2019. However, adequate empirical studies identifying factors hindering the birth registration process to meet SDG target (Figure3) in Nepal are not well explored.

This paper examines trend and association of individual, household, cluster, district and other geographic factors in relation to birth registration and knowledge about process of birth registration in Nepal using Nepal Multiple Indicator Cluster Survey (NMICS) 2014 and 2019. Understanding individual, household and contextual disparity in knowledge and practice of BR is an essential step towards monitoring progress of ensuring universal birth registration to achieve SDG target in Nepal.

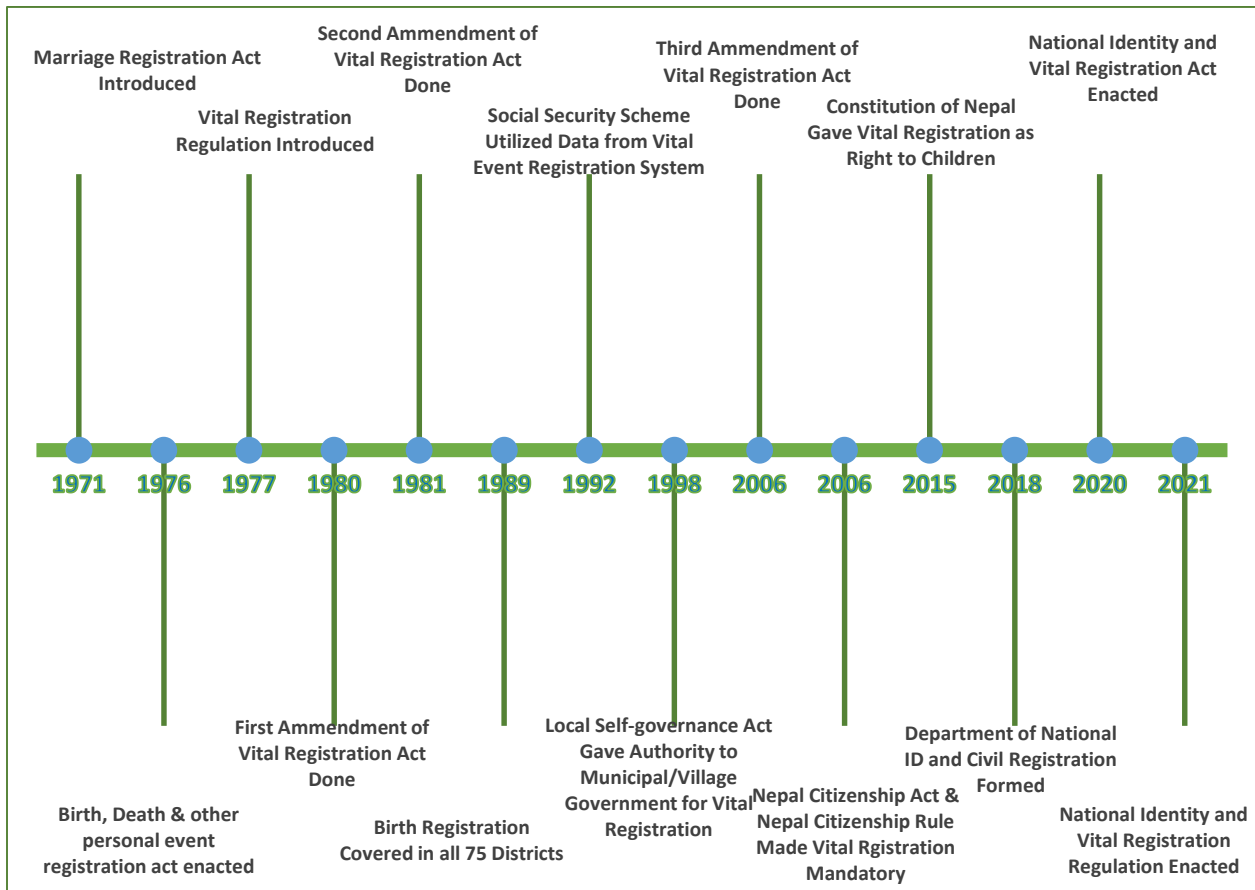


Figure 1. Milestone Chart of Birth Registration System Development in Nepal

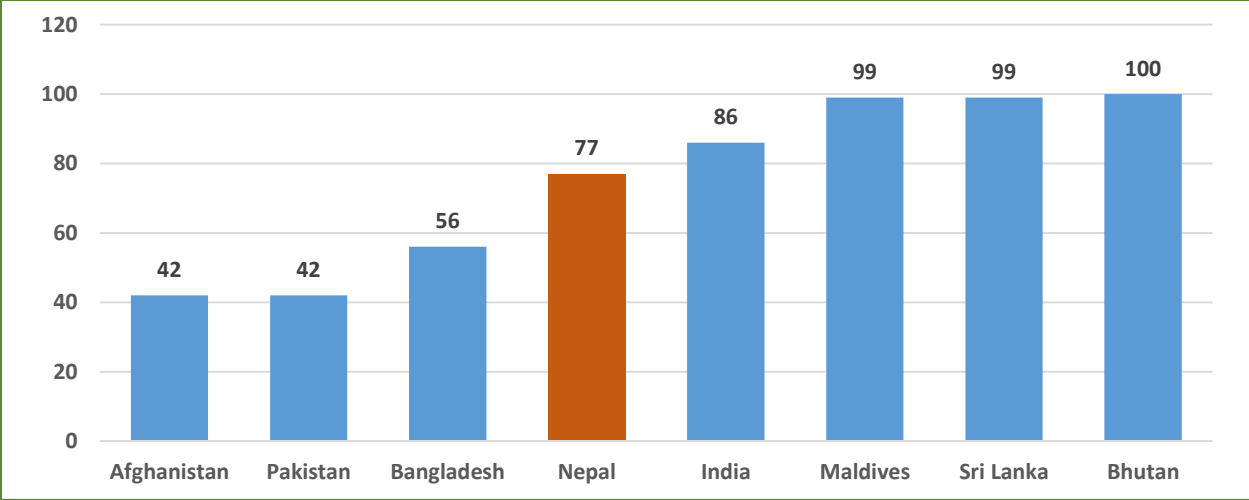


Figure 2. Birth Registration Coverage (%) of SAARC Countries in 2020

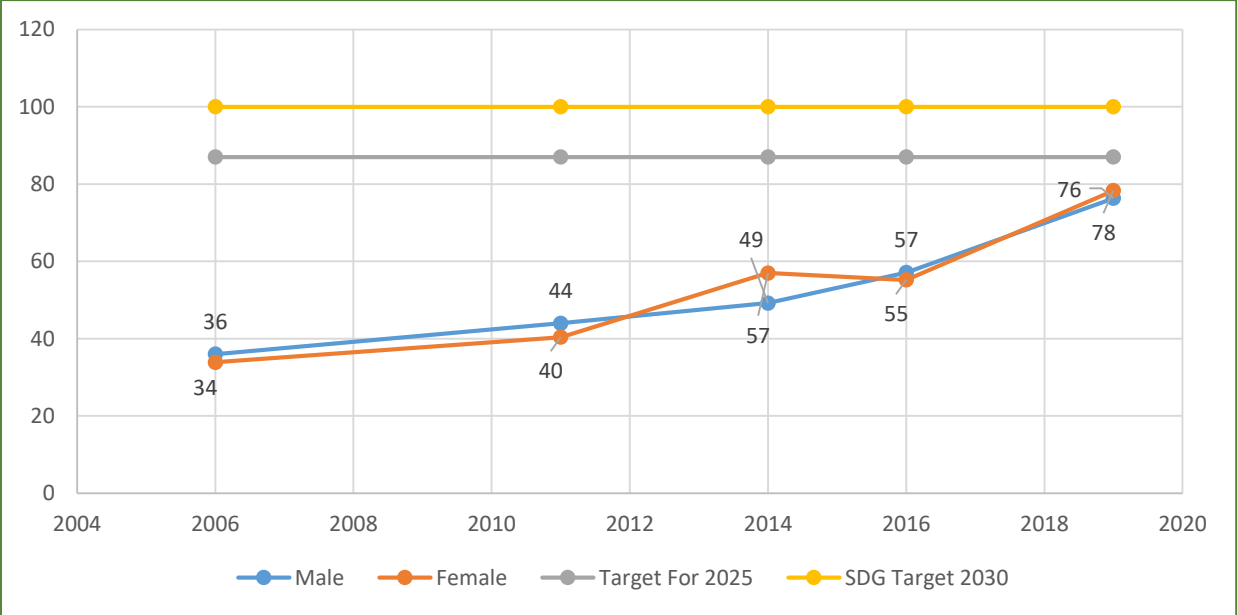


Figure 3. Trend of Birth Registration Coverage (%) and SDG Target in Nepal

Methodology

Multiple Indicator Cluster Survey 2014 and 2019 data were used for the analysis. Frequency distribution, cross tabulation and random intercept multilevel logistic regression model were run to explore the determining predictors of knowledge and practice of birth registration. A total sample of 512 EAs and 12,800 households were selected for the survey in 2019 and 13,000 households in 520 sample EAs were selected for the survey in 2014. Both survey data were pooled together and the analysis was conducted from pooled data. The primary outcome variable is a binary with a value 1 “if the birth of the child has been registered” and 0 otherwise. Another outcome variable used in this analysis is caregiver’s knowledge about how to register the birth, which was also binary outcome variable. The explanatory variables and description are presented in Table1.

Table 1. Explanatory variables used in modelling the status and knowledge on process of BR

Selected variables	Description
Survey year	Year of NMICS conducted
Individual-level variables	
Age of child	Reported age of child (in months) at the time of survey, grouped as: 0-11 (Ref.), 12-23, 24-35, 36-47, 48-59
Sex of child	Sex of child, grouped as: male (Ref.), female
Mother's/caregiver's education	Highest level of education attained by mother/caregiver, grouped as: None (Ref.), Basic (Grade 1-8), Secondary (Grade 9-12), Higher
Exposure to newspaper	Mother's/caregiver read newspaper at least once a week, grouped as: No (Ref.), Yes
Exposure to radio	Mothers/caregivers listen to radio at least once a week, grouped as: No (Ref.), Yes
Exposure to television	Mothers/caregivers watch television at least once a week, grouped as: No (Ref.), Yes
Household-level variables	
Ethnicity of household head	Self-reported ethnicity of head of household, grouped as: Brahmin/Kshetri (Ref.), Terai/Madhesi other caste, Dalit, Newar, Janjati, Muslim, other
Household wealth quintile	Index based on household amenities, assets and durables derived by factor analysis used for computation of wealth index, grouped as: poorest (Ref.), second, middle, fourth, richest
Community-level variables	
Place of residence	Women's/caregiver's current place of residence, grouped as: urban (Ref.), rural
Percent of mother/caregiver with primary or higher education in cluster	Percent of mother/caregiver with primary or higher education in cluster kept as it is in interval scale
District-level variable	
Infant mortality rate in districts/provinces	District level infant mortality rate kept in interval scale Province of residence, grouped as: Province1 (Ref.), Province2, Bagmati, Gandaki, Lumbini, Karnali and Sudurpaschim

Sustainable development goal target and challenges for birth registration

Nepal has SDG target of universal birth registration coverage by 2030, but a series of challenges remain. These include insufficient legal frameworks, complex and cumbersome processes for registration, underdeveloped coordination and quality assurance mechanisms, and insufficient financial and human resources. Other obstacles for further progress of birth registration coverage include, lack of knowledge of how to register birth among mothers or caregivers of unregistered children and fee associated with birth registration and transportation cost. Some policy recommendations to improve the status of birth registration based on finding of this analysis are provided.

Key finding1. Birth registration coverage of child under five-year age increased from 58% in 2014 to 77% in 2019 and knowledge about process of birth registration among mother/caregiver of the child

whose birth was not registered increased from 86% in 2014 to 90% in 2019. The change in birth registration coverage and knowledge about how to register birth varies by age of child, household economic status, ethnicity and province.

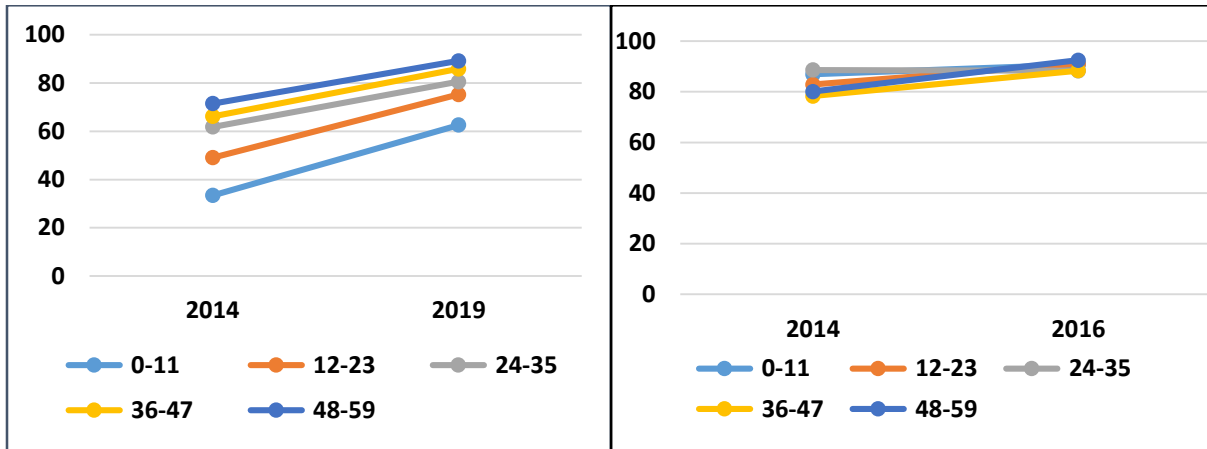


Figure 4. Change of BR coverage by age of child

Figure 5. Change of knowledge by age of child

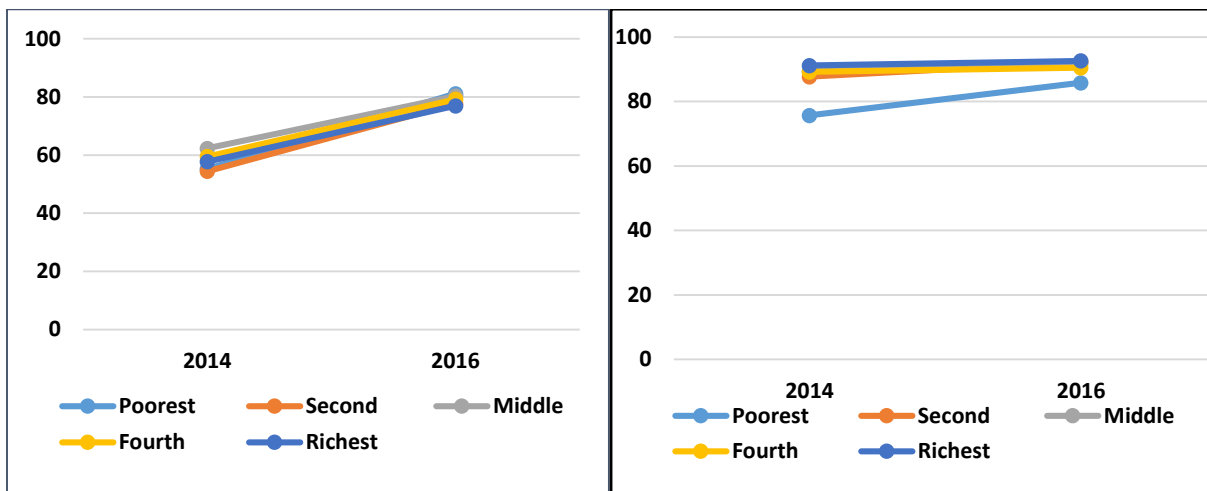


Figure 6. Change of BR coverage by household wealth

Figure 7. Change of Knowledge by household wealth

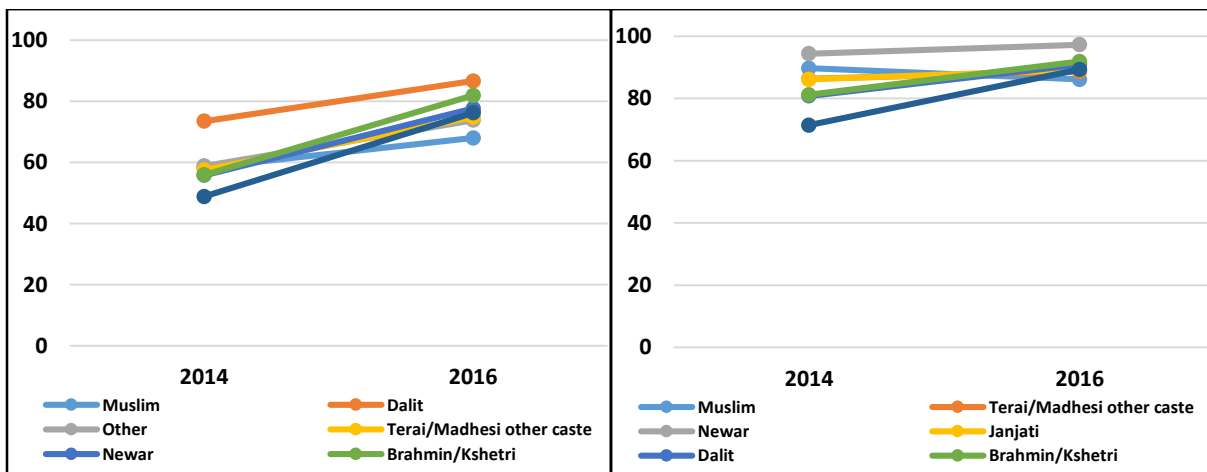


Figure 8. Change of BR coverage by ethnicity

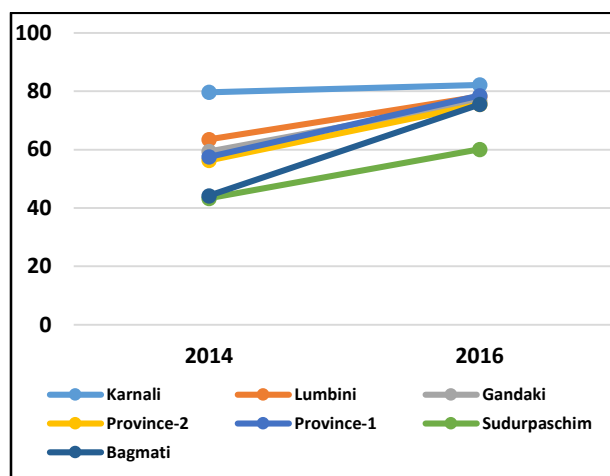


Figure 9. Change of Knowledge by ethnicity

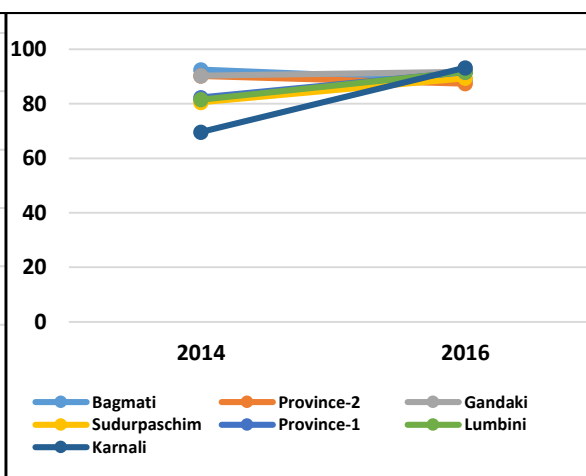


Figure 10. Change of BR coverage by province

Figure 11. Change of Knowledge by province

Key finding2. Twenty-nine percent of the variation in birth registration and 45 percent of the variation in knowledge about process of birth registration was attributed to cluster. About 32% of the cluster-level variation in birth registration was explained by the survey year and all the covariates included in adjusted model explained 35% of the cluster-level variation in birth registration

Table2. Parameter coefficients for the multilevel model (random intercept only model, without covariates) for BR coverage and knowledge about how to register birth (among children whose birth was not registered)

Random effects	BR coverage			
	Model1 (Null)	Model2	Model3	Model4
Community (PSU) random variance (SE)	1.34 (0.10)	0.91 (0.07)	1.04 (0.09)	0.87 (0.08)
Community (PSU) ICC (%)	29%	22%	24%	21%
% of community-level variance explained	-	32.1%	22.4%	35.1%
Random effects	Know how to register birth (among birth unregistered children)			
	Model1 (Null)	Model2	Model3	Model4
Community (PSU) random variance (SE)	2.74 (0.42)	2.65 (0.41)	2.40 (0.40)	2.30 (0.39)
Community (PSU) ICC (%)	45%	45%	42%	41%
% of community-level variance explained	-	3.3%	12.4%	16.1%

Note: Model1 (Null model) did not include any covariates. Model2 adjusted for survey year, Model3 additionally included individual and household, Model4 additionally included community, district and province. The % of community-level variance explained was estimated as, %variance explained= (community-level random variance in null model – community-level random variance in given model)/community-level random variance in null model.

Key finding3. The odds of birth registration of a child under age five year was 32% higher in 2019 compared to that in 2014. But there was no significant difference in knowledge about process of birth registration between 2014 and 2019

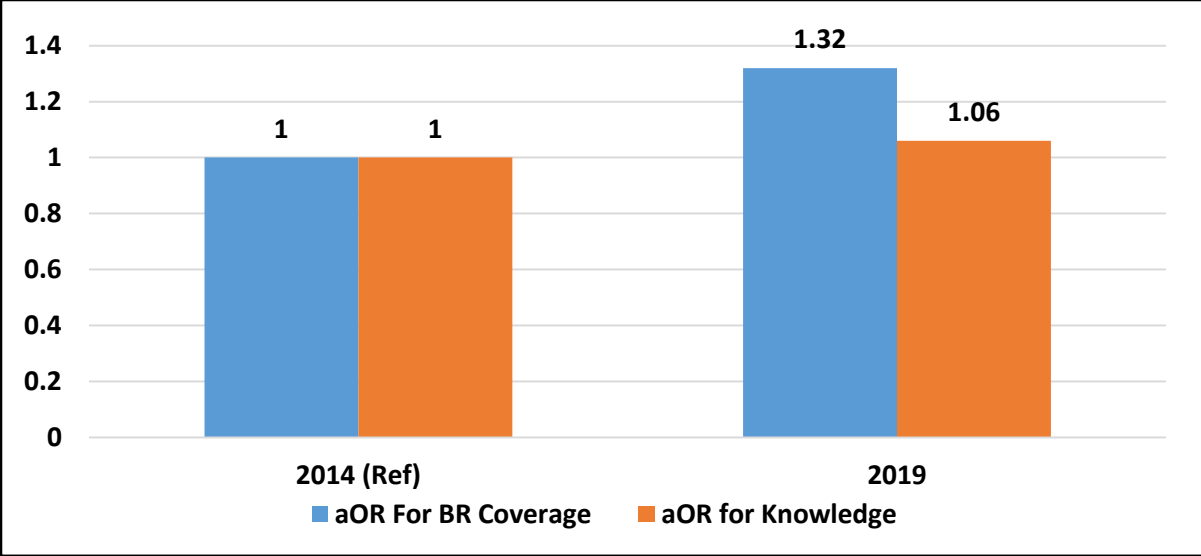


Figure 12. Relationship of survey year with birth registration coverage and knowledge about how to register birth

Key finding4. The odds of birth registration of a child under age five year was increased with age of child, but there was no significant difference in knowledge about process of birth registration

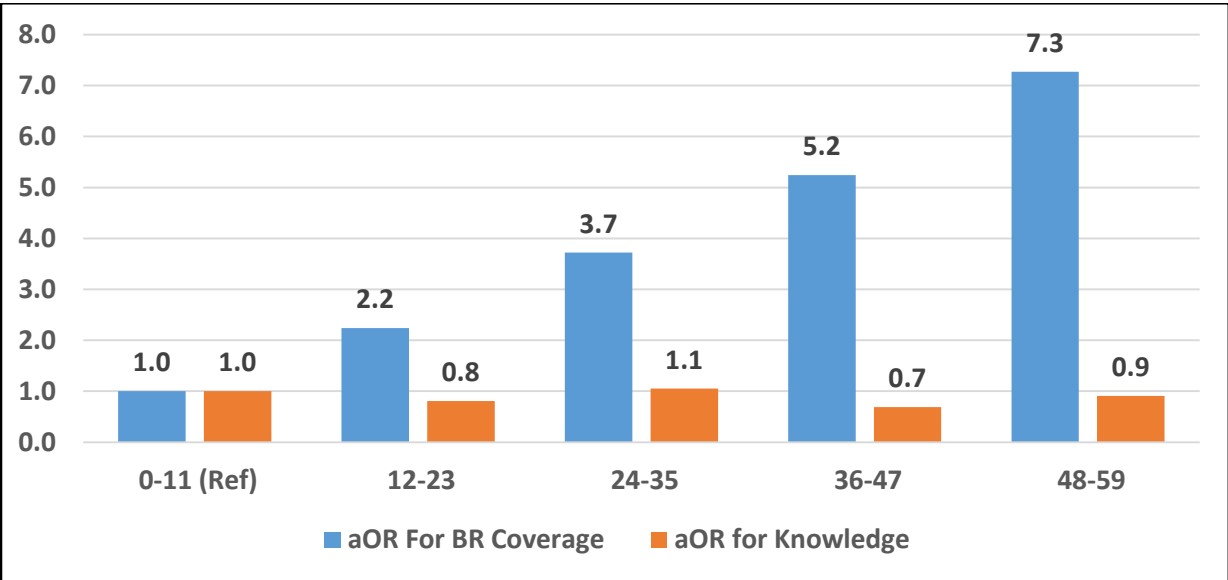


Figure13. Relationship of age of children (in month) with birth registration coverage and knowledge about how to register birth

Evidences show that schools were found as an important facilitator for birth registration, because children’s birth are more likely to be registered at the near school going age. Our analysis indicated that:

- Probability of birth registration increased with age of children. Children aged between 1-2 years were two times and children aged between 4-5 years were seven times more likely to have their birth registered as compared to those aged below one year.

- But from legal and right perspective, it is important for a child to have its birth registered within the first year of life.
- Initiation for an incentive and regulation mechanism including integration of birth registration with reproductive, maternal, neonatal, child and other health care can help to improve birth registration within the first year of life

Key finding5. Mother /Caregiver’s level of education was positively associated with the odds of birth registration coverage as well as the odds of knowledge about process of birth registration

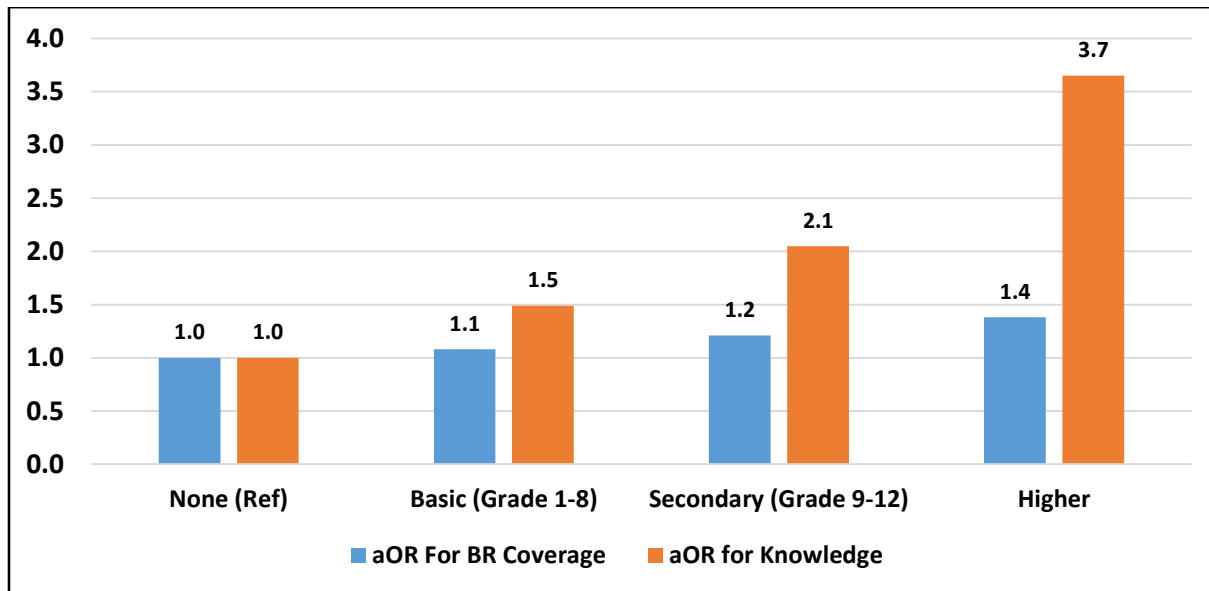


Figure14. Relationship of mother /caregiver’s education with birth registration coverage and knowledge about how to register birth

Mother’s autonomy was found to be significant predictors for birth registration in global literature. Educated mothers are more autonomous for uptake of own health care as well as birth registration of their children as they may not have to wait for husband’s or other family member’s permission for such services. They are also more likely to know the availability of service and have better bargaining power within and outside household. Our analysis also indicated that:

- Odds of birth registration of a child were 21% and 38% higher among mother/caregiver with secondary and higher level of education respectively compared to those who are illiterate.
- Likelihood of mother’s/caregiver’s knowledge on how to register birth were 1.5 times, 2.1 times and 3.7 times higher among those who had basic, secondary and higher-level of education respectively compared to those who had no formal education

Public awareness campaign in local language, together with other social networking activities can be critical action to increase awareness and practice of birth registration among less educated people.

Key finding6. Mother’s/Caregiver’s who have exposure to radio at-least once a week were more likely to register birth of their child and more likely to know how to register birth

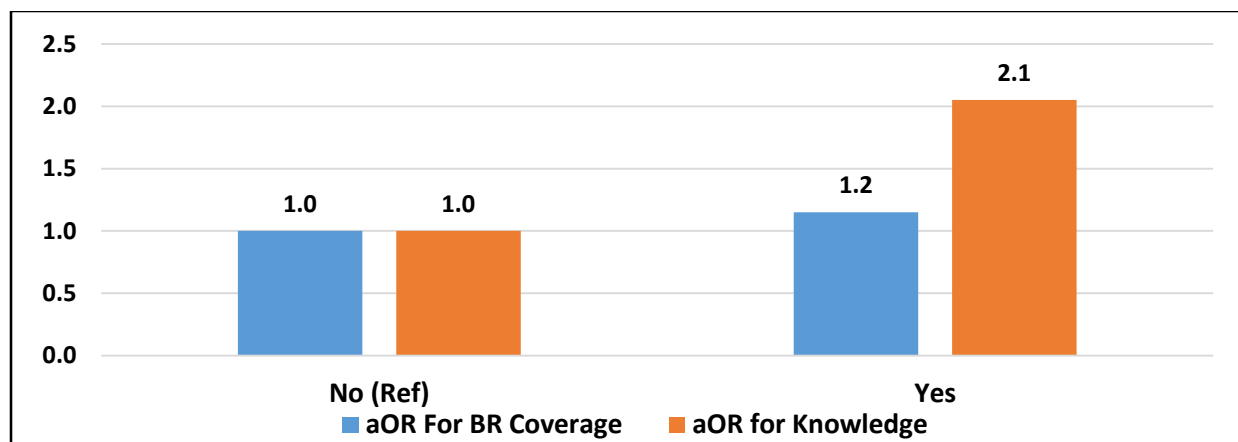


Figure15. Relationship of mother /caregiver's weekly exposure to radio with birth registration coverage and knowledge about how to register birth

Radio, television, newspaper, posters and billboards are common information, education and communication materials used to increase community awareness on knowledge and practice of birth registration. Our analysis indicated that:

- Mother's/caregiver's who have exposure of radio at-least once a week were 1.2 times more likely to register birth of their child and were 2.1 times more likely to know the process of birth registration.
- We did not find significant association of exposure to television and newspaper with birth registration coverage and knowledge about process of birth registration

Limited coverage of newspaper and television and wider access to radio could be the reason for the association. Television and newspaper may also be relatively expensive for poor households in rural areas. Therefore, effective utilization of radio and mobile phone technologies to sensitize the importance and process of birth registration would be cost effective intervention to improve birth registration coverage in Nepal.

Key finding7. Birth registration coverage as well as knowledge about process of birth registration increased by household economic status measured by wealth quintile.

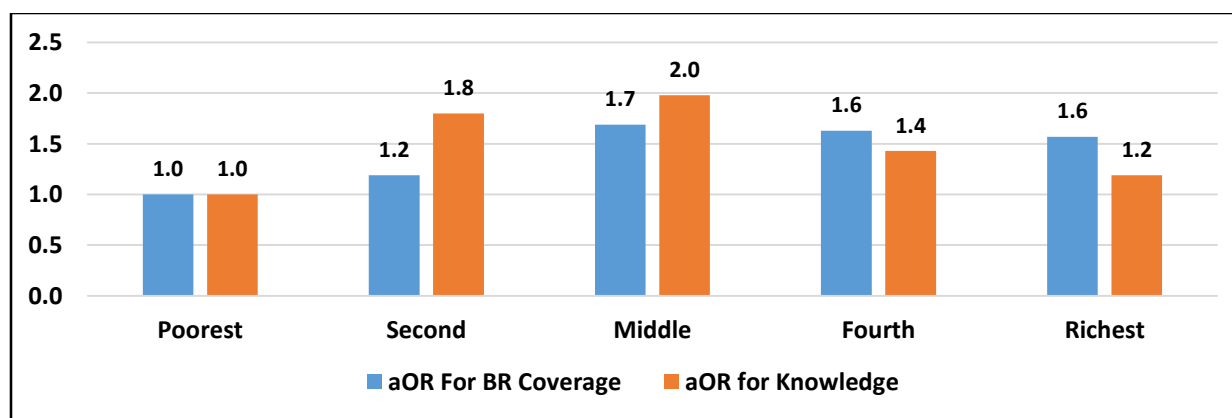


Figure16. Relationship of household wealth quintile with birth registration coverage and knowledge about how to register birth

Household economic status has been found as significant predictors for birth registration in global literature. We also found that:

- Odds of birth registration consistently higher among children living in wealthier household, with 57% higher odds of birth registration among children living in the richest household compared to the children living in the poorest households.
- The odds of knowing the process of birth registration also increased with household wealth quintile.

Travel and other costs associated with the process of registration may prevent the households in lower wealth quintile from birth registration of their children. As the access to food, clothing and shelter as the means of surviving is problem for many poor household in Nepal, any costs associated with birth registration can be burden for most of such households.

As birth registration is a human right, it should be free of charge and birth registration service should be brought closure to the population in all districts. Conditional cash transfer scheme can improve the adoption of birth registration among poor population in Nepal.

Key finding8. Ethnicity has been found as significant predictor for birth registration

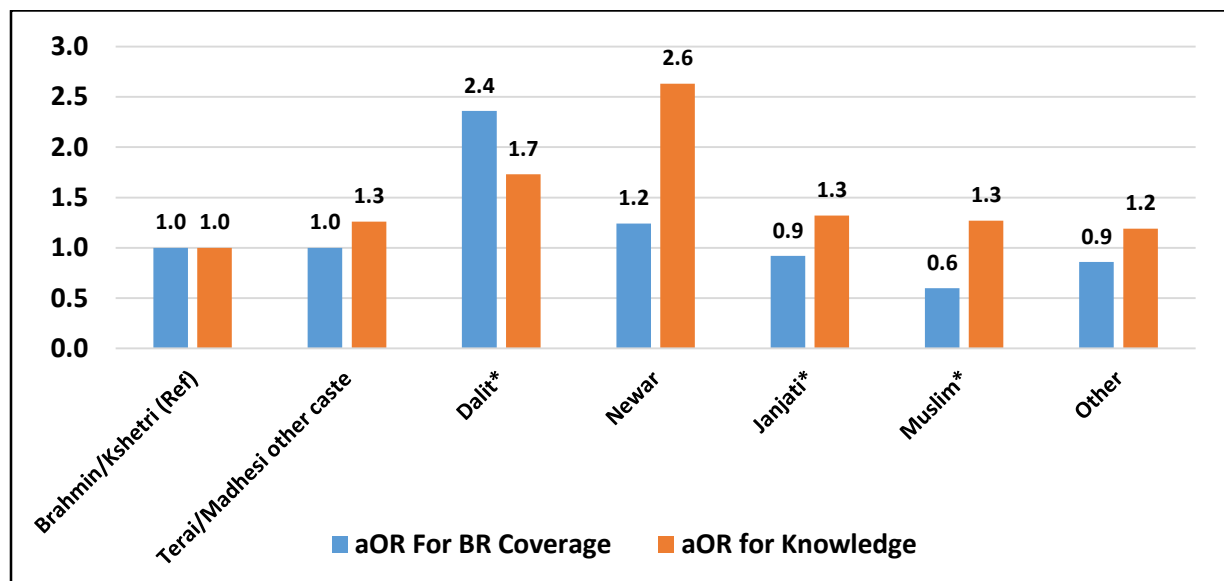


Figure17. Relationship of ethnicity with birth registration coverage and knowledge about how to register birth

Existing literature indicate that health care service utilization varies across ethnicity. Minority and disadvantaged ethnic groups are less likely to utilize maternal health service. In India, child belonging to schedule casts and tribes were less likely to have their birth registered compared to the forward cast groups. Our finding showed that:

- Dalit had 2.4 times higher odds of birth registration and Muslim had 0.6 times lower odds of birth registration compared to the Brahmin/Kshetri.

- Dalit mothers/caregivers also had 73% higher odds of knowing how to register birth than Brahmin/Kshetri

Our finding contradicts with the findings on association of ethnicity and birth registration in India. Odds of both the birth registration coverage and knowledge about birth registration was higher among Dalit than the Brahmin/Kshetries. Muslim’s mothers/caregivers were however, less likely to register birth of their children compared to Brahmin/Kshetries

Key finding9. Karnali Province has higher odds of birth registration than Province1 and Province2 and Bagmati Province have significantly lower odds of birth registration than Province1. Similarly, Province2 and Sudurpaschim Provinces have significantly higher odds of knowledge about process of birth registration than in Province1

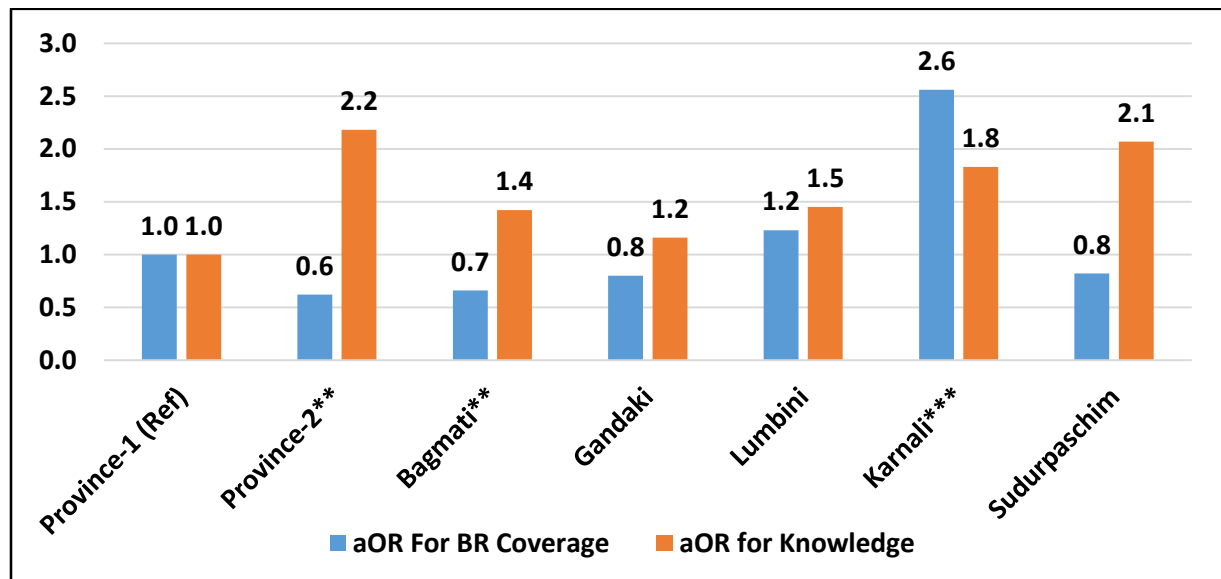


Figure18. Relationship of province with birth registration coverage and knowledge about how to register birth

Our analysis showed that probability of birth registration coverage was higher among mothers/caregivers living in Karnali Province compared to those living in Province1. Province2 and Bagmati Provinces have lower probability of registering childbirth than in Province1. Similarly, Province2 and Sudurpaschim Provinces have significantly higher odds of knowledge about process of birth registration compared to Province1.

This result contradicts with the evidence that poor provinces may have poor health infrastructure, poor service delivery leading to poor birth registration. However, similar finding was reported in some state of India, where, very high level of registration was recorded in areas that are far away from the capital, mainly because of focused registration campaign targeted in the poorer provinces. High birth registration coverage among Dalit and in Karnali Province may be due to the government’s policy to incentivize Dalit and hard to reach population for birth registration.

Conclusions:

Coverage of birth registration and knowledge about the process has increased substantially over the five-year period between 2014 and 2019. However, a lot needs to be done to decrease social and

geographical disparity in terms of birth registration to meet the SDG target of universal coverage. Our results show that 29 percent of the variation in birth registration in Nepal lies between community and higher-level differences and 71 percent of the variation in birth registration lies between time and individual level differences. Similarly, 45 percent variation in knowledge about process of birth registration (among those who have not registered birth of their children) lies between community and higher level differences and 55 percent of variation in knowledge about process of birth registration lies between time and individual level differences. Out of 13 variables included in final adjusted model, eight variables (survey year, age of child, mother's/caregiver's education, exposure to radio, ethnicity, household wealth, district-level infant mortality rate and province) were found to be significant predictors of birth registration and knowledge about process of birth registration.

Limitations:

This study has few limitations. Although the data used in the analysis were nationally representative surveys, the analysis used cross-sectional data collected at two times. Both the surveys included only a limited variables measuring birth registration, knowledge about the process of registration and the variables influencing them. Thus, the associations presented are not causal. Here, birth registration was measured using two questions- first question was, whether a child had a birth certificate. If the response was no, they were further asked if the birth had ever been registered. In both the questions, we cannot be certain that the birth had actually been registered, as all those who said that the birth of their children had been registered did not show the birth certificate. As the surveys included only the children who were inside the household at the time of survey, it is likely that the estimated birth coverage was under-estimated. The source of data for this study was also based on the self-report of mothers and might have introduced recall bias.

Policy Recommendations

- 1. Expand BR facilities to birthing centers and integrate it with maternal and newborn health care**
Birth registration is lower among early age of child. To address the issue of late registration, provision of integrating birth registration with maternal and newborn health service should be introduced. Local-level registrars should be proactive to coordinate with birthing centers, immunization centers, hospitals and other maternal and child health care facilities for the integration. The birth, which occurs at home, should be notified and reported to birth registration centers by mobilizing community health workers/volunteers. Unregistered home births should be identified at the time of immunization and referred for birth registration.
- 2. Implement policy of mandatory free education up to the secondary level**
Childbirth registration as well as mother's knowledge on registration process increased with education of mother/caregiver (through the awareness of importance of birth registration). Therefore, Government of Nepal should strictly implement the policy of free education to women at least up to secondary level to empower them to improve birth registration as well as maternal and child health service.
- 3. Implement nationwide mass media campaign on legal provision and importance of BR in local language**

Exposure to radio was significant predictor of birth registration and knowledge about process of birth registration. Therefore, public awareness campaign including information on importance and process of birth registration should be conducted widely through national as well as local level radio stations. The information shared during the mass media campaign should be in the national as well as local language.

4. Implement targeted interventions on BR among Jangati, Muslim and other minority groups

There has been a significant ethnic and geographical variation in birth registration and related knowledge. People living in Province 2 and Bagmati Province are relatively less likely to register birth. Reason for this ethno-geographical difference in birth registration could be due to the poor literacy rate among ethnic minorities, particularly among Janjati and Muslims. Thus, community based strategy targeting people living in Province 2 and Bagmati Province and in the areas dominated by Janjati and Muslims should be developed and executed.

5. Expand the conditional cash transfer program introduced for maternal health care to BR

The poorest households were significantly less likely to register birth of their children and know the process of birth registration. Thus, birth registration promotion activities should be prioritized in the poorest communities. The conditional cash transfer program implemented for increasing antenatal care, and institutional delivery should be extended to birth registration.

6. Include BR in health information and establish BR monitoring system in collaboration with MoHP and DONICR to ensure BR as right to children

Access to health and birth registration service is the rights of children and the government has responsibility to guarantee these rights. Therefore, including birth registration in health information system and establishing birth registration monitoring system in collaboration with Ministry of Health and Population (MoHP) and Department of Civil Registration and National Identity (DoCRNI) will help to track the birth registration progress and reduce inequality in the access to birth registration among different groups.

7. Amend existing BR laws to remove current barriers associated with fee and requirement of BR from permanent place of residence, need of parent's citizenship certificate, finger print and signature

Requirement for father's citizenship, passport and other supporting documents for registering birth, denial for birth registration from places other than permanent residence and at the recommendation of close relatives are the barriers for birth registration. Therefore, some amendments in the existing birth registration laws and directives to ensure birth registration regardless of legal identity of the parents are required. Imposing penalty to the officials who cause delay or denial of birth registration, allowing birth registration from permanent as well as current place of residence, initiating and completing the process by close relatives, enacting provincial and local level laws for birth registration are other amendments suggested to maintain timely and accurate birth registration.

8. Enhance technical capacity of Local Level Government (LLG) with provision of dedicated trained staff for community mobilization

Provision of dedicated staff trained in birth registration process in local level government, mobilization of local bodies, school, media, health facilities and social mobilizers to create intensive publicity in community towards implementation of birth registration, expansion of community based birth registration centers and establishment of birth registration centers in health facilities will further improve and strengthen birth registration system in Nepal.

References:

Bhatia, A., Kim, R. and Subramanian, S.V. (2021). Birth registration in India: Are wealth inequities decreasing? *SSM - Population Health*, 13(2021), 100728. doi: 10.1016/j.ssmph.2021.100728.

Central Bureau of Statistics (CBS). (2015). Nepal Multiple Indicator Cluster Survey 2014, Survey Findings Report. Kathmandu, Nepal: Central Bureau of Statistics and UNICEF Nepal.

Central Bureau of Statistics (CBS). (2020). Nepal Multiple Indicator Cluster Survey 2019, Survey Findings Report. Kathmandu, Nepal: Central Bureau of Statistics and UNICEF Nepal.

Department of Civil Registration. (2015). Mini Survey on Situation of Vital Events Registration in Nepal. Babarmahal, Kathmandu, Nepal.

Gautam, B.R. (2016). Civil Registration and Vital Statistics: Policy and Practice in Nepal. DoCR, Kathmandu, Nepal.

Ministry of Health, New ERA and Macro International Inc. (2007). Nepal Demographic and Health Survey 2006. Kathmandu, Nepal: Ministry of Health, Nepal.

Ministry of Health, New ERA and Macro International Inc. (2012). Nepal Demographic and Health Survey 2011. Kathmandu, Nepal: Ministry of Health, Nepal.

Ministry of Health, New ERA, and ICF. (2017). Nepal Demographic and Health Survey 2016. Kathmandu, Nepal: Ministry of Health, Nepal.

Mohanty, I., and Gebremedhin, T.A. (2017). Maternal autonomy and birth registration in India: Who gets counted. *PLoS ONE* 13(3):e0194095. <https://doi.org/10.1371/journal.pone.0194095>.

Muzzi, M. (2010). UNICEF Good Practices in Integrating Birth Registration into Health System (2000-2009): Case Studies: Bangladesh, Brazil, The Ghana and India. UNICEF, Newyork, 2010.

National Planning Commission. (2021). Nepal Multidimensional Poverty Index: Analysis towards Action, 2021. NPC, Singhadurbar, Kathmandu, Nepal.

StataCorp. 2017. Stata Statistical Software: Release 15. College Station, TX: StataCorp LLC.

Stephenson, R., Baschieri, A., Clements, S., Hennink, M., and Madise, N. (2007). Contextual influences on modern contraceptive use in sub-saharan Africa. *American Journal of Public Health*, 97(7):1233-1240. Doi:10.2105/AJPH.2005.071522.

United Nations Children's Fund (UNICEF). (2005). The rights start to life: a statistical analysis of birth registration. New York, USA.

United Nations Department of Economics and Social Affairs (2014). Principles and Recommendations for Vital Statistics System. UN, New York.