

JOURNAL OF HEALTH PROMOTION

Official Publication of Health Education Association of Nepal (HEAN)

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Health Education Association of Nepal (HEAN) is a non-profit making professional organization of Nepal. It was established in 1991 AD. It has more than one hundred active members comprising distinguished members, life members and general members so far.

Improvement of Health status of the people through health education and policy advocacy for creating supportive environment is the motto of the Association. It aims at promoting health of the people by empowering them in informed decision-making. It also intends to facilitate in the professional development of health educators all over the country.

HEAN is bound to organize and conduct different programmes on health promotion and health education such as school health programme, comprehensive sexuality education, environment and community health, mental health, communicable and non-communicable diseases, nutrition and consumer health and many other health issues and concerns.

Any citizen having Bachelor Degree of education in health or any other health and behavior sciences willing to contribute in the improvement of health education profession may be the member of the association.

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Editorial

Health Education Association of Nepal (HEAN), a non-profit professional association, is pleased to publish the peer-reviewed journal 'Journal of Health Promotion' (JHP) 8th volume through print and online version via <https://www.nepjol.info/index.php/jhp>. In consonance with the aims of HEAN, it has been publishing JHP, a professional journal, since 2005. HEAN is a common platform for every health education professionals for expressing academic exercise including discussion and sharing issues and challenges and innovation of school health, reproductive health, environmental health, professional preparation, curriculum, pedagogy, and so on. Thus, JHP opens an avenue for health education professionals in Nepal as well as from abroad.

The current issue of the JHP embraces 14 articles covering diversified issues in health promotion. Padam Prasad Simkhada and his friends have written a guest article discussing the role of health promotion during the COVID-19 pandemic, preventive measures to control further spread of COVID-19, and responses taken by the government. Likewise, Bhagwan Aryal has presented awareness of body weight and status of body mass index and hypertension in Nepalese school teachers.

In this current issue, four articles are associated with the field of sexual promiscuity and misbehaviour that hinder women's empowerment and social development. Among them, the first article by Kalpana Gyawali explores perpetrators and commonplaces of sexual harassment against adolescent school girls. The second article written by Sushil Sharma, based on a review of all published articles up to 2018 from the Hinari database, sheds light on growing risky practices of sexual behaviour among children in the absence of parental guidance. Similarly, the third article, written by Yadu Ram Upreti and his friends throw light on premarital sexual behaviours among secondary school adolescents. The fourth article written by Bhagawati Sharma reports the causes and types of intimate partner violence against women.

Furthermore, five articles are related to reproductive health. Amongst them, an article written by Belpatara Nath Yogi examines the factors associated with early marriage in rural Mid-Western Nepal. Similarly, Madhavi Gautam Ghimire analyses multiple issues during menstrual hygiene management while Sudha Ghimire has reported common problems faced by girls during menstruation and ways for managing menstrual hygiene. Likewise, Shanti Prasad Khanal examines multi-level barriers to the utilization of youth-friendly reproductive health services whereas Bhu Dev Jha explores the knowledge and use of emergency contraceptive pills among Bachelor's level female students.

Moreover, Milan Acharya and her friend pay attention to teachers' and parents' perceptions of the eating behaviour of primary school students. Mohan Kumar Sharma analyses the dominant causes and health status of street children, and Yoko Oda Thapa and her friends examine the effect of a pilot programme using a capability approach to prevent lifestyle-related diseases.

The articles of the current issue of the journal contribute to enhance an understanding of overwhelming health issues and challenges and their management and need for inquiry in several aspects of health promotion using different approaches. We expect the present issue will be helpful for health education professionals, students and scholars to enhance understanding of health promotion and health education. We always welcome genuine and creative comments from the readers to make this journal an academic and scholarly platform.

This journal has been published with the generous efforts and contributions of the authors and outstanding peer reviewers and editors from Nepal and abroad. Finally, the editorial board is grateful to the contributors.

Editorial Board

JHP

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The Role of Health Promotion during the COVID-19 Pandemic

Guest Article

**Padam Simkhada¹, Preeti Mahato², Pasang Tamang¹,
Edwin van Teijlingen², and Prakash Shahi³**

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Introduction

In early August 2020, there were nearly 18 million confirmed cases of Coronavirus Disease (COVID-19), including 686,145 deaths globally; very rapid growth in prevalence since the first case was reported to the World Health Organization in December 2019 (WHO, 2020). In a desperate attempt to contain the further spread of the virus, governments across the world have taken public health interventions that are unprecedented. To prevent the further spread of COVID-19 infection, many countries have taken strict measures such as the complete lockdown of a country restricting the movement of people in public, forcing people to stay at home except for emergencies and certain essential jobs. At the same time countries are also trying to scale up their testing capacity and expand their contact tracing system while scientists around the world are in a race to develop a vaccine against the virus as well as drugs to alleviate its symptoms.

Role of Health Promotion

During this time of COVID-19 pandemic crisis, health promotion becomes more important than ever to support the health and well-being of people in our communities. We agree with Van den Broucke (2020) that the real heroes in the fight against COVID-19 are: “virologists, epidemiologists, doctors and nurses, and even if many of the actions taken serve a preventative purpose, their focus is on the prevention of disease, not on promoting health.” Health promotion activities aimed at improving access to better information and services plays a vital role in giving people more control over their health and well-being. Health promotion can make an essential contribution to fighting a global pandemic such as COVID-19. In modern societies, new public health approaches are needed that are adapted to local situations and needs.

Since there is no vaccine available against COVID-19, the infection has been circulating rapidly within the population. Hence, the only measure that we can adapt at the moment is to prevent its further spread within the communities. Some of the preventive measures such as social distancing, frequent hand washing, wearing face masks and avoiding direct contact with sick people or suspected Covid-19 cases could reduce the risk of COVID-19 infection (Tamang et al., 2020). However, translating these measures into daily practice is a big challenge (Lee &

Chuh, 2010). Hence, appropriate and timely health prevention messages could act as a catalyst in preventing the spread of COVID-19 infection whilst health promotion will allow people to gain or regain over their health and well-being.

As a discipline within public health and a field of professional practice, health promotion can contribute to addressing the COVID-19 threat at different levels, some of which are discussed here.

Improving Preventing Behaviour

Since COVID-19 is a new disease, the only measures that can help to prevent the further spread of disease is the containment of the virus. At the beginning of the COVID-19 outbreak, health authorities issued warnings and recommendations through different platforms such as television, infographics in social media such as Facebook, Twitter and Instagram. This was often followed by imposing legal restrictions on the movement of people, which has resulted in some degree of success in containing the virus (Van den Broucke. 2020). However, changing people's behaviour as well as their perception takes time. A significant number of people didn't follow the restrictions because they believed that they are at low or no risks, or simply underestimated the seriousness of the problem. Hence, changing people's behaviour requires encouraging people to adopt preventive behaviours in their day to day practice by presenting them with a clear rationale.

We also need to remember that there are likely to be unintended consequences of preventative measures. For example, as Mahato and colleagues (2020) pointed out interventions such as social distancing, (self-)isolation and quarantine can itself result in increased isolation of vulnerable people who are in an abusive home, and hence decreased-levels of well-being.

Everybody has a key role to play in the prevention of COVID-19, but health promotion looks at the bigger picture to ensure people's well-being is not negatively affected by general COVID-19 preventative measures. So, the health promotion messages and information should be designed in a way that is understandable to the general public but the interventions should also be appropriate and acceptable to the relevant subgroups in the population.

Empowering the Organisation and Community

One of the important ways to empower community during public health emergencies, such as flooding, an earthquake or the COVID-19 pandemic, is to effectively engage in risk communication. Working with national authorities and organisations such as the WHO, the public can be educated about this disease using multiple communication techniques such as social media, mass media (radio, TV, billboards) and stakeholder and community engagement (WHO Africa 2020). Providing clear guidance on risk, prevention and awareness of symptoms to the communities in partnership with local organisations and community-based programming is the key (Alton Mackey 2020). Empowering communities means educating people and encouraging them to change their behaviour for their own benefit but also that of others, in order to minimise the spread of COVID-19, but also to provide the resources and opportunities to make such changes.

Health Education, Health literacy

Many organisations around the world have emphasised on health education and information sharing on COVID-19 in different ways. For example, the WHO, one of the key actors during this COVID-19 pandemic, is providing information to the public, health sector and governments on prevention and control practices. Similarly, in local context, United States Centers for Disease Control (US CDC) and Health Education England have been disseminating health education materials including educational videos, e-learning resources and webinars on their websites (Gray et al., 2020; NHS Health Education England 2020). Studies have proposed that personalised health education intervention to the public provides a greater degree of lifestyle change thus decreasing serious course of infection (ClinicalTrials.gov 2020). Similarly, video-based entertainment educational approach has been proposed to educate schoolchildren, with an engaging and informative story line, emphasising correct hand washing procedures and the social distancing measures (Gray et al., 2020).

Dealing with Mis/disinformation

As the virus keeps on spreading so does the risk of misinformation and false information which the WHO described as an 'infodemic'. When there is a lot of false or inaccurate information about the virus, its origin and effects as well as about the action of authorities to tackle the pandemic, it is difficult for many people to find reliable sources of information and guidance they might need to interpret the information provided. Whether the misinformation is profit or politically motivated, it is important to protect the general public from false information regarding COVID-19. The scientist can help in their own ways by calling out fake stories and engaging with the public. Besides by countering misinformation about COVID-19 by scientists, they can help policymakers avoid introducing harmful policies, improve public understanding of the pandemic and save lives (Fleming 2020). Since social media can become a gateway for the spread of misinformation some of the ways to fight misinformation are by sharing correct information, providing links to correct information, and sharing information only from credible sources such as WHO or US CDC (Campbell 2020).

Conclusion

As governments around the world struggle to use a range of prevention strategies, from imposing lockdowns to scaling up testing and contact tracing, one effective way to support the health and well-being of the general public is through health promotion. Community education and risk communication carried out by organisations at different levels and engagement of locals in order to understand the risk and seriousness of COVID-19 is what health promotion can offer. The main aim thus is to encourage behaviour change among the general people that will help them adapt helpful behaviours in this long fight against COVID-19.

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Awareness of Weight and Situation of Body Mass Index and Hypertension in Nepalese Teachers

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Abstract

Teachers are the role models to their students in terms of health and wellbeing, in particularly the nutritional status and physical outlook. These present opportunities to students for observational learning. However, many teachers face health complications which are not even perceived as a threat by them to their career and life. This study was conducted to determine the awareness of weight and current status of body mass index and hypertension among the Nepalese school teachers. It also examined the association between the BMI and hypertension. Randomly selected secondary level teachers in the Bagamati province of Nepal were the respondents. A cross-sectional descriptive research was conducted. Self-administered questionnaires were used to collect data. Age-wise relationship was found with BMI and hypertension. More the age, higher was the BMI category and so was the blood pressure. Risky situation of BMI and hypertension among senior teachers could create a threat to the teachers' wellbeing and a setting for poor observational learning to the students. Teachers need to focus on improving their lifestyle and activities to better their conditions and present healthy role modeling.

Keywords: Body mass index, hypertension, Nepalese teacher, role model, weight.

Introduction

Reaching and maintaining a healthy weight is important for overall health and it can help a person prevent and control many diseases and conditions (National Heart, Lung, and Blood Institute, 2005). Every person need to know what weight they should bear to be healthy. Usually weight is calculated to be appropriate on the basis of height of people. A simple tool to measure fatness or leanness in adults is body mass index (BMI). BMI is a measure of body fat based on height and weight (weight in kg/ height in meters²) that applies to both adult men and women. A study from the University of Bristol supports body mass index (BMI) as a useful tool for assessing obesity and health (University of Bristol, 2018). According to Centre for Disease Control and Prevention (CDC) (2020), BMI is a reliable indicator of body fatness for most people. BMI does not measure body fat directly, but BMI correlates to the direct measures of body fat, such as underwater weighing and dual-energy x-ray absorptiometry (DXA) tests. BMI can be considered an alternative for direct measures of body fat. Furthermore, BMI is an economical and easy-to-perform method of screening for weight categories that may lead to health problems.

Similarly, many of the people in Nepal today suffer from hypertension, a condition of raised blood pressure. It should be regularly monitored specially as per the rising age. According to Aryal et al. (2014), there is a serious problem of hypertension in Nepal as follows:

Around 42.7% of the study population had never had their blood pressure measured. The prevalence of raised blood pressure or hypertension (SBP \geq 140 and/or DBP \geq 90), excluding those on medication, was 23.4% (men 28.7%, women 18.5%) and this figure rose to 25.7% (men 31.1%, women 20.6%) when those currently using medication were included.

It is also a concern of this study to identify the situation of the hypertension among the teachers because it is believed that teachers with normal blood pressure tend to be role models to their students. It is important for all subject teachers, indiscriminate of being health education teachers or members of the school health team, to present themselves physically fit to support and encourage healthy eating habits among students and maintain a proper weight. Even a small change in actions by the teachers can make a positive impact on students' wellness.

Nepalese education system purposes to produce healthy citizens because, in general, healthy citizens can only contribute to the national development. This is possible when healthy teachers teach. However, it is commonly perceived as a poorer nutritional status of teachers, presenting themselves as a plump or lean.

Students are always interested in getting deeper into teachers' deeds to know them. One of their areas of interest can be health-related aspects which may, later on, develop into healthy attitudes and the right change in behavior if they perceive their teacher as a healthy role model in terms of nutritional status. School teachers are the role models of those students who are in touch with them for around 6 to 8 hours every day. Students observe their teachers' health status every day and are directly influenced. The measure of body fat; fatness, leanness or normal body of a teacher is visible to the students which creates observational learning of body imaging. Unfortunately, many school teachers present poor role modeling in terms of nutritional health status and behaviors.

Objectives of the Study

The objective of this study was to determine the awareness of Nepalese school teachers regarding their own weight and current status of body mass index and hypertension among them. It also examined the association between the BMI and hypertension among the teachers. The researcher's perspective was to identify the nutritional status and physical outlook so that suggestions could be made in terms of creation of observational learning to the students for health promotion.

Methods

This is a cross-sectional study conducted among the Nepalese teachers in Bagmati province in Nepal. Survey questionnaire was used to collect data. Bagmati Province was selected for its wide coverage of schools (29.68% of total schools of Nepal) and teachers (31.47% of total teachers and 41.67% of Secondary level teachers of Nepal) (Department of Education, 2009).

Moreover, there was also the highest rate of literacy in this region in Nepal. Likewise, there exist schools with different conditions in terms of their infrastructures, physical facilities, number of students and teachers. As for the selection of the districts, this region was further classified into the three geographical regions (clusters) namely Mountain, Hill and Terai. It is likely that the difference also lies by geographical region in context of teachers' health status. From each cluster, one sample district each was randomly selected. The total number of teachers in these districts were 1611 (Department of Education, 2009). So a sample size of 310 (adjusted to 344) was obtained appropriate keeping the the confidence interval (5), confidence level (95%), and the total population of teachers (1611) using the online sample size calculator of www.raosoft.com/samplesize.html. The formula used in calculation was as follows: $n = \frac{z^2 \cdot p \cdot q \cdot N}{[e^2 \cdot (N - 1) + z^2 \cdot p \cdot q]}$. The sample size of the schools (46) was calculated on a proportionate basis being based on the sample size of teachers allocating 6-8 teachers per school.

Where,

n = size of sample

z = the value of the standard variate at a given confidence level and to be worked out from table showing area under Normal Curve (here, 1.96 at 95% confidence level)

p = sample proportion (here, its value is taken as 0.5 in case 'n' will be the maximum and the sample will yield at least the desired precision.

$q = 1 - p$ (here, 0.5)

N = size of population (here 1611)

e = acceptable error (here, 0.05 at confidence interval 5, since the estimate should be within 5% of true value)

The self-administered survey questionnaire used for the teachers was the main tool of data collection. The tool was pre-tested for content validity and reliability in Kathmandu. Quantitative analyses were done including averages, chi-square test and cross-tabulations. Interpretations were made in an analytic and interpretative way.

Appropriate measures were used to inform the teachers about the aims of the research, the advantages expected from it, and any possible hazards or inconveniences. In addition, the tool was made inclusive and appropriate in terms of language, precision and dealing. Tribhuvan University professors in the related field assessed the tool for face validity. Respect was paid to the respondents of their rights to participate or not to participate in the research process. Males and females were paid equal respect. Verbal consent was taken before administration of the tools. Privacy of the respondents was maintained and they were assured of the confidentiality of the data and anonymity of the persons involved.

Results

Awareness on Weight

Bodyweight is the most common and simple anthropometric measure used for assessment of current nutritional status (Roy & Saha, 2013). Awareness on one's own weight is necessary to

keep the body weight in normal range. The teachers were asked about their weight condition. Teacher's understanding of their own weight was found as follows:

Table 1. Teachers' perception towards condition of their own weight

| | | Perception on the condition of weight | | | | | | | |
|-------------------------|-----------------|---------------------------------------|------|-----------------------|------|---------------------------|------|------------|------|
| | | Underweight | | Overweight (Obese) | | About the right weight | | Don't know | |
| | | N | % | N | % | N | % | N | % |
| District | Rasuwa | 1 | 6.3 | 1 | 6.3 | 13 | 81.3 | 1 | 6.3 |
| | Chitwan | 9 | 7.1 | 27 | 21.4 | 83 | 65.9 | 7 | 5.6 |
| | Bhaktapur | 17 | 8.6 | 38 | 19.2 | 134 | 67.7 | 9 | 4.5 |
| Sex | Male | 18 | 7.3 | 48 | 19.4 | 169 | 68.4 | 12 | 4.9 |
| | Female | 9 | 9.7 | 18 | 19.4 | 61 | 65.6 | 5 | 5.4 |
| Age group | Less than 24 | 5 | 10.4 | 0 | 0.0 | 40 | 83.3 | 3 | 6.3 |
| | 25 to 29 | 12 | 13.2 | 8 | 8.8 | 71 | 78.0 | 0 | 0.0 |
| | 30 to 34 | 3 | 4.3 | 23 | 32.9 | 36 | 51.4 | 8 | 11.4 |
| | 35 to 39 | 2 | 3.7 | 10 | 18.5 | 41 | 75.9 | 1 | 1.9 |
| | 40 to 44 | 2 | 5.7 | 15 | 42.9 | 14 | 40.0 | 4 | 11.4 |
| | 45 to 49 | 0 | 0.0 | 4 | 19.0 | 17 | 81.0 | 0 | 0.0 |
| | 50 and more | 3 | 14.3 | 6 | 28.6 | 11 | 52.4 | 1 | 4.8 |
| Teaching subject | Health Related | 1 | 2.6 | 11 | 28.2 | 27 | 69.2 | 0 | 0.0 |
| | Natural Science | 8 | 7.3 | 17 | 15.6 | 79 | 72.5 | 5 | 4.6 |
| | Social Science | 4 | 8.0 | 12 | 24.0 | 29 | 58.0 | 5 | 10.0 |
| | Language | 10 | 10.0 | 14 | 14.0 | 70 | 70.0 | 6 | 6.0 |
| | Other | 4 | 9.5 | 12 | 28.6 | 25 | 59.5 | 1 | 2.4 |
| Type of school | Community | 7 | 11.7 | 13 | 21.7 | 35 | 58.3 | 5 | 8.3 |
| | Institutional | 20 | 7.1 | 53 | 18.9 | 195 | 69.6 | 12 | 4.3 |
| | Total | 27 | 7.9 | 66 | 19.4 | 230 | 67.6 | 17 | 5.0 |

In totality, 67.6 percent teachers felt that they were about the right weight but 7.9 percent found themselves underweight and 19.4 percent overweight. A total of 5 percent were unaware of their weight condition. Moreover, 81.3 percent teachers in Rasuwa felt themselves being at the right weight, which was found to be less than 68 percent in the other two districts.

Similarly, 83.3 percent teachers of the age group less than 24 and 81 percent teachers of age group between 45 and 49 said they were at the right weight. Mostly, the teachers of age group between 40 and 44 said they were obese (42.9%) which was followed by the teachers of 30 to 34 (32.9%) and 50 above (28.6%).

While looking at this subjectwise, more than 70 percent of Natural Science and language teachers said they were at the right weight. However, 28.2 percent of health-related teachers and 28.6 percent other teachers were obese. This is a serious issue that a large number of health-related teachers themselves were obese.

Table 2. Pearson chi-square tests

| | | Condition of weight |
|------------------|------------|----------------------------|
| Age group | Chi-square | 68.032 |
| | Df | 18 |
| | Sig. | 0.000 |
| Teaching subject | Chi-square | 15.206 |
| | Df | 12 |
| | Sig. | 0.230 |
| Type of school | Chi-square | 4.018 |
| | Df | 3 |
| | Sig. | 0.260 |

Awareness on the condition of weight was found significantly related to the age group of the teachers. It was also found significant with teaching subject and the type of school. However, no significant relationship was found between this and sex and district of the teachers.

Body Mass Index

BMI of teachers was found through self-expressed measurements. The following table 3 shows the overall situation of the BMI calculation of the teachers.

Table 3. Distribution of teachers on BMI categories

| BMI Categories | Frequency | Percent |
|-----------------------|------------------|----------------|
| Underweight | 40 | 11.6 |
| Normal weight | 222 | 64.5 |
| Overweight | 82 | 23.8 |
| Total | 344 | 100.0 |

Table 3 reveals a clear picture of the overall situation of BMI categories among the secondary level teachers in Nepal. According to it, 64.5 percent teachers in total were at a normal weight, but 23.8 percent teachers were at obese situations and 11.6 at underweight. This mal-nutritional situation was found to be slightly more than the teachers’ awareness on their own weight (as in table 1).

Furthermore, age-wise distribution of BMI categories was also calculated which is shown as follows:

Table 4. Age-wise distribution of BMI categories

| | | Categories of BMI | | |
|---------------------------------|--------------|--------------------------|---------------------|-------------------|
| | | Under Weight | Normal Range | Overweight |
| | | % | % | % |
| Age group of respondents | Less than 24 | 25.0 | 60.4 | 14.6 |
| | 25 to 29 | 13.8 | 73.4 | 12.8 |
| | 30 to 34 | 8.5 | 60.6 | 31.0 |
| | 35 to 39 | 1.9 | 70.4 | 27.8 |
| | 40 to 44 | 2.9 | 62.9 | 34.3 |
| | 45 to 49 | 0.0 | 57.1 | 42.9 |
| | 50 and more | 23.8 | 52.4 | 23.8 |

According to table 4, a total of 25 percent of teachers of less than 24 years and 23.8 percent of 50 years old or above were underweight. On the other hand, about 43 percent teachers of 45-49 years old were found to be obese. Obesity was found to be lower among lower age teachers, among less than 24 years and 25-29 years age groups.

Hypertension

The teachers were asked about their blood pressure. The findings revealed a similar result as in Aryal, et al. (2014).

Table 5. *Agewise situation of blood pressure*

| | | Blood pressure | | | | | | | |
|------------------|--------------|----------------|------|-------------------|------|--------------------|------|--------------------------------|-----|
| | | Normal | | Lower than normal | | Higher than normal | | Do not know / have not checked | |
| | | N | % | N | % | N | % | N | % |
| Age group | Less than 24 | 39 | 81.3 | 5 | 10.4 | 0 | 0.0 | 4 | 8.3 |
| | 25 to 29 | 73 | 77.7 | 15 | 16.0 | 3 | 3.2 | 3 | 3.2 |
| | 30 to 34 | 55 | 77.5 | 6 | 8.5 | 9 | 12.7 | 1 | 1.4 |
| | 35 to 39 | 42 | 77.8 | 2 | 3.7 | 5 | 9.3 | 5 | 9.3 |
| | 40 to 44 | 24 | 70.6 | 2 | 5.9 | 6 | 17.6 | 2 | 5.9 |
| | 45 to 49 | 12 | 57.1 | 0 | 0.0 | 9 | 42.9 | 0 | 0.0 |
| | 50 and more | 14 | 66.7 | 2 | 9.5 | 5 | 23.8 | 0 | 0.0 |
| | Total | 259 | 75.5 | 32 | 9.3 | 37 | 10.8 | 15 | 4.4 |

As per table 5, more than three fourth of the teachers in total had their blood pressure normal. However, 10.8 percent teachers' blood pressure was found to be higher than normal. Mostly the senior teachers had had high blood pressure (42.9% of 45-49 years old ones and 23.8% of 50 above teachers had high blood pressure).

Discussion

More than two third teachers perceived themselves at a right weight, and BMI of the teachers also actually shows that 64.5 percent teachers in total were at a normal weight and a total of 75 percent teachers had normal blood pressure. However, about a quarter or even more number of teachers were having issues of weight, BMI and hypertension in this study. National Heart, Lung, and Blood Institute (2005) explains that if a person is overweight or obese, they are at higher risk of developing serious health problems, including heart disease, high blood pressure, type 2 diabetes, gallstones, breathing problems, and certain cancers.

A study was conducted to find the association between BMI and health and health-related quality of life (HRQL) in Chinese adults. According to Zhu et al. (2015), the class I obese had better HRQL in both the physical and the mental domains than the normal weight, especially in the mental well-being, the class II obese mainly had an adverse association in the physical functioning activities, and the underweight had the lowest HRQL scores in both the physical and mental component summary. In this study too, a substantial number of both obese and underweight teachers was found which also indicates the possibility of Nepalese teachers with low HRQL.

Hypertension is a chronic disease where the level of pressure of blood is high, at which action is warranted. This is known as 'high blood pressure' which is a major risk factor for coronary heart disease, stroke, heart and kidney failure (Park, 2015). A systolic pressure around 120 mm of Hg and diastolic pressure around 80 mm of Hg is termed as normal blood pressure for a normal adult. Hypertension is said to be present if it is often at or above 140/90 mmHg. However, using any specific cut-off point is subjective.

Normally, when the aging starts among people, blood pressure will increase slightly. But the rate of occurring high blood pressure in senior teachers of Nepal was found to be in a critical condition. It seems to be related to BMI as per age too because BMI shows a tendency to increase as per age, so does the blood pressure.

As per the University of Bristol (2018), the effects of total fat, along with fat in the trunk, arms and legs, on 230 different traits relevant to metabolism and future heart disease risk, such as cholesterol and blood pressure were studied. These effects were compared with those seen when using BMI as a measure. Higher total fat at age 10 and 18 was found associated with damaging levels of cardio-metabolic traits such as higher blood pressure and adverse cholesterol and inflammatory profiles at age 18 (Bell et al. 2018). The results support abdominal fatness as a primary driver of cardio-metabolic dysfunction and BMI as a suitable tool for identifying its effects (Bell et al., *ibid*).

Maintaining a healthy weight as per height is important to reduce the chances of various health problems. However, it seems that a large number of Nepalese teachers are not aware of maintaining their weight as per height and hence susceptible to the increased risk for many diseases and health conditions, including the following: Hypertension, Dyslipidemia (for example, high LDL cholesterol, low HDL cholesterol, or high levels of triglycerides), Type 2 diabetes, Coronary heart disease, Stroke, Gallbladder disease, Osteoarthritis, Sleep apnea and respiratory problems, and some Cancers (endometrial, breast, and colon) (Centers for Disease Control and Prevention, 2011). It was found that a total of 35.5 percent teachers did not have normal BMI in this study. This study also revealed a possible problem of cardiovascular disease like blood pressure among the teachers due to improper BMI measures. These teachers will not be presenting themselves right role modeling in front of their students.

A role model is a person whose behavior, example and success are or can be imitated by others, especially by younger people. Sociologist Robert K. Merton who coined the phrase 'role model' (Calhoun, 2010), hypothesizes that individuals compare themselves with reference groups of people who occupy the social role to which the individual aspires (Holton, 2004). Merton emphasizes that rather than a person assuming one role and one status, they have a status set in the social structure that has attached to it, a whole set of expected behaviors (Holton, 2004).

Generally, role models are understood to be other persons who, either by exerting some influences or simply by being admirable in one or more ways, have an impact on another (Nauta & Kokaly, 2001 as cited in Schroeter, 2002). A role model can give a person an idea of how they would like to be. School teachers have already been where their students are going,

undergone what they will go through and are in a position to pass along lessons, not only regarding the subject matter but lessons on life (2U, Inc., 2020).

The theoretical underpinning for role models is the social learning theory. According to this theory, people learn behavior by observing it in others and repeat it if it appears beneficial to them (Schroeter, 2002). Albert Bandura, a social cognitive theorist, propounds that people can learn by observing the behavior of others. Aronson, Wilson and Akert (1997) say that children have never been good at listening to their elders, but they have always been successful to imitate them. Individuals can also learn by observing what happens to other people and just by being told something, as well as by direct experience.

In Bandura's model of observational learning, Santrock (2006) considers four processes: attention, retention, production and motivation. The first specific process 'attention' indicates to the qualities in a teacher to attract the students to his/her doing or saying. Before students can imitate a model's actions, they must be there to see or hear what the model is doing or saying. Although attention to the model is influenced by a number of qualities, students are always more likely to be rapt to high-status models. Santrock (2006) concludes that in most cases, teachers are high-status models for students.

The second specific process 'retention' is the ability of a student to code the information and keep it in memory so that it can be retrieved in order to reproduce a model's actions. That the student's retention will be improved when teachers give vivid, logical, and clear demonstrations besides just telling the students to do this or that. This is the situation where a large number of Nepalese teachers, particularly senior teachers failed in presenting vivid examples and clear demonstrations of health status in terms of maintaining body weight, BMI and hypertension.

Conclusions

Age factor seems to play role in determining the awareness on the condition of weight. Higher BMI was linked to higher blood pressure. More the age, higher was the BMI category and so was the blood pressure. Mostly the senior teachers do not bear a good health situation in these indicators. The study indicated to a situation of poor observational learning to the students by the teachers who did not bear normal BMI. As regards Bandura's model of observational learning, it was perceived that a large number of senior Nepalese teachers were drawing less attention and creating less retention among the students through body imaging. Poor body weight, higher BMI and hypertension among the senior teachers are negative indicators to be a role model teacher. Hence, the initial steps or the processes of observational learning become weakly absorbed among the students which contribute to the creation of poor role modeling in terms of body measurements by the teachers in Nepalese schools.

The implications of this study are directed on continual lifestyle improvement activities among the teachers irrespective of their age. Senior teachers must focus more on their health. Since teaching is a profession to present healthy role modeling each and every moment, poor lifestyle never leads to the healthy role modeling. Health promotion goes beyond health care. So, they should, instead of seeking medical aid only, develop their personal skills through

information sharing, educating for health and enhancing life skills. It is necessary to change their lifestyle to improve condition of weight, BMI and hypertension before it reaches to a disastrous end. Schools should support them to follow healthy lifestyle by involving them in some school based health promotion interventions like weight reduction, yoga, meditation, sports, health clubs, aerobics, etc. In addition, teachers can prepare teacher quality circles within schools to identify their problems, prioritize them, and seek solutions. This combined action will empower and enable them to learn and prepare themselves for all stages of life to cope with health hazards, illnesses and poor lifestyle at work and home. This increases the options available to the teachers to exercise more control over their own health and over their environments, and to make choices conducive to health.

Limitations of the Study

This research was carried out with the perceived answers of teachers which showed there are several problems in their health status. Results of this study indicated that there is a need to carry on a national survey of teachers' health condition even through medical examinations. This will result in more accurate conditions of the health of Nepalese teachers.

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Perpetrators and Common Places of Sexual Harassment Against Adolescent School Girls in Nepal

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ABSTRACT

The main aim of this study was to find out the vulnerable places of sexual harassment to the girl students and the persons involved in such unwanted behaviors. It was a mixed-methods study. Altogether 773 girl respondents were selected for obtaining quantitative data from Lalitpur and Rupendehi districts in Nepal. Similarly, 10 focus group discussions, 14 Key informant interviews, and eight In-depth interviews were conducted for collecting qualitative data. The result showed that male peers/ friends, teachers, neighbors/ relatives, and strangers were involved in sexual harassment. Frequency of verbal/gestural type of sexual harassment is higher from male peers and touching/pinching and sexual abuse/assault types of sexual harassment are more common from teachers and relatives. Sexual harassment frequently happens in public transport. In society, teachers deserve great respect and trust from parents and students. They have close access to girl students. However, such trust and closeness transformed into sexual harassment whereby accelerating sexual harassment. The higher incidence of sexual harassment at public transports might be due to the proximity and anonymity, which, in turn, results in high levels of sexual harassment and abuse with very little risk of social or legal consequences. The awareness program against sexual harassment and strong laws and order are essential and the judiciary process should be simple and victim-friendly that can reduce sexual harassment to girl students by various perpetrators at different domains in society.

Keywords: Sexual harassment, perpetrators, adolescent, schoolgirl, sexual offenders.

Introduction

Adolescence is the period of physical, psychological, and social maturity from childhood to adulthood. Generally, the term adolescents refer to those people between 10 and 19 years of age (WHO/UNEFA/ UNICEF, 1989). The health of adolescents is profoundly linked to their development since their physical psychological and social abilities help to determine their behaviors. The healthy development of adolescents is dependent upon several complex factors: their socio-economic circumstances and the environments in which they live, and grow the quality of a family, community, and peer relationships, available education opportunities. Among the different factors, sexual harassment on the adolescent is found to be responsible for the educational and mental health of adolescent girls (Timmerman, 2002). Sexual harassment from different people upon the girl students in different situations and environments may affect adolescents' daily life. Hence, the study is an attempt to find out the

different sexual offenders who involve in sexual harassment on adolescent girl students of Nepal along with the most common places where they have to victimize with such crime.

Sexual harassment is a complex and fluid phenomenon ranging from physical violence to sexually-suggestive gestures and whistling which cannot be easily detected like sexual abuse and violence. The Equal Employment Opportunity Commission [EEOC] has defined sexual harassment in its guidelines as unwelcome sexual advances, requests for sexual favors, and other verbal, non-verbal and physical conduct of a sexual nature when i) Submission to such conduct is made, either explicitly or implicitly a term or condition of an individual's employment ii) Submission to or rejection of such conduct by an individual is used as the basis for employment or academic decisions affecting such individual, and ii) Such conduct has the purpose or effect of unreasonably interfering with an individual's work performance or creating an intimidating, hostile, or offensive working environment (EEOC, 1990). The United States Merit Systems Protection Board (1987) has categorized sexual harassment into three categories concerning how severe these may be as less severe (unwelcomed sexual remarks, suggestive looks and gestures, and deliberate touching); moderately severe (pressure for dates, pressure for sexual favors, unwelcomed letters, and telephone calls) and most severe (actual or attempted rape or sexual assault). The global prevalence rates have been found ranging from 15% to 95%, with women in developing countries more likely to have been harassed (Fogarty, 2012; Geloski et al. 2017). According to UN Women (2016), 40% - 50% of the women in European Union countries experience unwanted sexual advances, physical contact, or other forms of sexual harassment at the workplace. The severe rate of sexual harassment on women has been reported ranging from 70% - 90% in Nepal from several perpetrators (Gautam et. al. 2019; Gyawali, 2010; Malla, 2005; Thapa & Rana, 1994). Along with working and professional woman, sexual harassment to the schoolgirls was also found severe throughout the world and it has been reported at the school level and was found in late elementary school, peaks in early adolescence, and tapers off in high school (Pepler et.al., 2006; Petersen & Hyde, 2009). The USA again revealed that 83% of girl students in the 8-11 grades were sexually harassed and 38 percent of them were sexually harassed by teachers or school employees in America (Hill & Silva, 2005). Witkowka (2005) reported a similar situation where 50% of a sample of 714 girls in grades 9 and 11 reported experience of some form of sexual harassment in schools in Sweden.

Similarly, sexual harassment of 27% of girl students has been reported in the Netherlands. The study of Plan International (2008) on African and Latin American nations also illustrated the severe occurrence of different types of sexual harassment on the girl students by teachers and other offenders at school and other areas.

Few studies have been done in the Nepalese context on sexual harassment at school regarding sexual harassment of the girl students. Even there are few studies over the prevalence of sexual harassment on the girl students but the results have been found severe. Gautam et al. (2019) and Misra and Lamichane (2018) have studied sexual harassment on girl students in Kathmandu valley at public transport and have found around 80 % of the girls have been found sexually harassed at public transports. Thapalia et al. (2020) also reported that around 76% of the girl students in the Kathmandu valley (Tokha) had experienced some forms of sexual

harassment in their lives. In another study by Gyawali et. al. (2012), 85% of school-going adolescents were found to suffer from some kind of sexual harassment like sexual gazing; sexual gestures, and blaming relation with others, and 63% of girls who had been sexually harassed were found to be suffered from mental stress. Sexual harassment on the girl students has been reported at different places and areas from the victims' own homes to public places, school areas, public transport, and workplaces. Moreover, various types of persons have been found involved in sexual harassment which includes friends, teachers, co-workers, seniors, visitors, strangers, and family members (Gyawali et. al., 2012; Hill & Kearn, 2011; Hill & Silva, 2005; Hongkong Education Institute, 2013; Misra & Lamichane, 2018; Neupane & Chesney-Lind, 2013; Plan International 2008; Shrestha, 2012).

Education is vitally important in a young person's life to be aware of sex education. It provides them opportunities for personal, social, and academic development which is effective for their future employment and integration in society. School serves several functions, such as socialization, personality development of students, the transmission of cultural norms and values to the new generation in our society beyond transmitting academic knowledge and skills. The school setting is one of the first places that children learn to relate and interact with one another. Among the different hurdles to students, sexual harassment is becoming a huge problem across the world and adolescents have been found victimized with sexual harassment as they have very little tolerance capacity against it (Hill & Kearn, 2011; Management Systems International, [MSI] 2008; Plan International (2008). A student's experiences in school can have a major effect on his or her self-image and self-esteem and his or her development later in life. Mostly, the sexual harassment at workplaces and the sexual offender in that context have been studied well worldwide. But studies on adolescent sexual harassment in academic settings are very rare. In this context, this study is an attempt to explore the major offenders and places of sexual harassment on girls in the Nepalese context. Therefore, the outcomes of the study might be useful to identify the major sexual perpetrators. Hence, it will be useful to formulate the anti-harassment program and to implement different actions against agents of sexual harassment to minimize the occurrences and negative effects of sexual harassment on academic social and mental health aspects of girl students.

Methods

The pragmatic research design with the concurrent mixed-method (Cresswell, 2014) was used for this study. The sample size for quantitative data was 773 adolescent school girl students from both community and institutional schools from two districts (Lalitpur and Rupandehi). For this sample survey, the sample size for the quantitative study data has been calculated at a 95% confidence level with the 5% confidence interval.

The total 10 focus group discussions (FGDs) with girls students, 14 key informant interviews(KII) with the Principal, Vice-principal of school and parents of the girl students, and eight In-depth Interviews (IDI) with the severely sexually harassed girls those found during the focus group discussions, was conducted. The quantitative and qualitative data were triangulated on different themes. Ethical approval has been obtained from the Nepal Health Research Council (NHRC) to conduct the research and also written consent from the school and

guardians of the participants were received before data collection. The number of respondents for the qualitative study was finalized as per saturation (Zeller, 1993 cited in Morgan 1996). IBM SPSS 20 software was used for quantitative data analysis and the test of independence among variables was carried out using the chi-square test. For qualitative data, case interview and voices of FGDs have been transcribed. The thematic analysis approach was used for qualitative data analysis in the process of initialization, construction, rectification, and finalization (Vaismoradi et al., 2016). Findings of quantitative data have been triangulated with the findings of qualitative data as far as possible.

Results

Characteristics of the Sample Population

The result of the study is based on teenage girl students within the adolescent age group from different ethnicity, location, and school types. The background characteristics of the respondents have been illustrated in table 1. Nepal has a diverse caste system that plays a significant role in determining the social and economic status of its people. Respondents of this study were from different caste/ethnic backgrounds and were grouped into six caste groups (Bhandari & Sharma, 2012) which are Brahmin/ Chhetri/Thakuri, advanced Janjati (Newar, Gurung, Thakali), disadvantaged Janjati, Madeshis, Dalits, and Muslims / others. Among the different caste and ethnic groups, the higher percentage of respondents were from Brahman/ Chhetri and Thakuri Groups (44.5%) followed by disadvantaged Janajati (30.3%) and Advanced Janjatis (17.1 %). Likewise, 52 percent of the respondents were from Rupandehi district as the total number of adolescent girl students was higher at this district than the Lalitpur District. Among the different age groups, most of the girls were between the age of 13 to 15 and the girls aged 15 years old were the highest frequency (38.7 %) than other age groups (Table 1).

Table 1. *Background characteristics of the sample population.*

| Socio-demographic characters | | Number | Percentage |
|------------------------------|--------------------------|--------|------------|
| Caste and ethnicity | Brahman/ Chhetri/Thakuri | 344 | 44.5 |
| | Advanced Janajatis | 132 | 17.1 |
| | DisadvantardhedJanajatis | 234 | 30.3 |
| | Dalit | 31 | 4 |
| | Madhesi | 27 | 3.5 |
| | Muslim | 5 | 0.6 |
| Location | Lalitpur | 371 | 48 |
| | Rupandehi | 402 | 52 |
| School type | Public | 420 | 54.3 |
| | Institutional | 353 | 45.7 |
| Age group | 13 years | 51 | 6.6 |
| | 14 years | 208 | 26.9 |
| | 15 years | 299 | 38.7 |
| | 16 years | 160 | 20.7 |
| | 17 years | 36 | 4.7 |
| | 18 years | 13 | 1.7 |
| | 19 years | 6 | 0.8 |

Common Places of Sexual Harassment

Public transport and public places were found more prone to sexual harassment and among total sexually harassed girl students, 52% of the girls have been found sexually harassed in public transport followed by 50% in public places and 46% of the girls faced sexual harassment at school areas. Not only outside, but 23% of the girls were also found having sexual harassment at their home too. (Table 2). Between the two districts, sexual harassment in public transport and public places was slightly higher at Rupandehi district, while the sexual harassment at school was higher at Lalitpur. Still, the prevalence of sexual harassment at a different place according to the district was not statistically significant ($X^2 = 6.08$, $n = 687$, $df = 4$ $P = 0.19$).

Table 2. Major places of sexual harassment upon girl students

| Areas of sexual harassment | Lalitpur | | Rupandehi | | Total number | Total (Percentage) |
|---|----------|------------|-----------|------------|--------------|--------------------|
| | Number | Percentage | Number | Percentage | | |
| Public transport | 160 | 47 | 195 | 56 | 355 | 52 |
| Public place | 154 | 45 | 189 | 55 | 343 | 50 |
| School area | 166 | 49 | 149 | 43 | 315 | 46 |
| Home (own home or at the home of relatives) | 78 | 23 | 83 | 24 | 161 | 23 |
| Public gathering and cinema hall | 23 | 7 | 19 | 5 | 42 | 6 |

$X^2 = 6.08$, $df = 4$ $P = 0.19$

(Multiple response cases 1216)

Analysis of qualitative data also revealed that school girls have to encounter sexual harassment in public areas and public transports. During the focus group discussion, girls frequently reported that they had faced sexual harassment in public places and public transports while going to and fro school.

We have to face various kinds of sexual harassment on public buses. When we are traveling on a crowded bus, at that time, mostly males try to touch our bodies parts and also brush their bodies with our bodies too (A Thakuri girl from Rupandehi).

Girls also shared their experiences of sexual harassment in the classroom too during the focus group discussion. The experiences of a few girls about sexual harassment in the classroom are as follows:

Boys usually tease us at the passage in the school building, at school extra-curriculum programs. They try to look and touch our inner cloth during playing some games and a computer lab. In the classroom, they also try to pinch our leg by pen (Brahmin girl studying in a community school in Rupandehi)

Boys showed different sexual signs such as their middle fingers in the classroom. Sometimes they took out our sanitary pads from our bag and showed to their friends. It makes us shamed and bore. (A Janjati girl studying in an institutional school in Lalitpur)

Not only outside, but girls also expressed their pains of sexual harassment at their home too and one girl expressed her feeling as

We have a small family tea shop and I have to help my mother in my leisure time. At that, some of the costumers tease me and they also hold my hands. Some of the costumes such as policemen and drivers some time propose me for dating with them. (A disadvantaged Janjati girl studying in a community school in Rupandehi during the in-depth interview).

The quantitative and qualitative data show that girls have to encounter sexual harassers at different places from their homes to public transports, but the vulnerability for sexual harassment has been seen more prone to public places and in public transports. As a masculinity culture, some of the sexual harassment is considered normal in the society which has no strong legal punishment against a harasser. Therefore, the males were involved in sexual harassment. Similarly, in public transports, the offenders feel safer to harass due to the larger number of persons and crowded environments. That environment might be the cause behind the higher rate of sexual harassment on public buses. Along with the buses, other places are also found vulnerable to sexual harassment even in their own homes of the girl students.

Sexual Harassment in School Areas

Students have to stay for a long time in the school for their study; therefore, sexual harassment at school might have more impact on their academic performances and mental health. In the study, among the girl students who have faced sexual harassment at school, it was found that 91% of the girls faced sexual harassment at the classroom followed by 83% of the girls during extracurricular activities and 36% of the respondents in the canteen (Table 3). The higher rate of sexual harassment at the classroom might be due to the higher chances of the proximity of teachers with the girl students and other hands the perpetrator may more involve because the girls might feel fear and hesitation to bring out such harassing behaviors in public. Between the two districts, the prevalence of sexual harassment in the classroom is higher at Lalitpur, and sexual harassment during extra curriculum activities and canteen are higher at Rupandehi district. (Table 3). The difference in the prevalence of sexual harassment at different places within the school area at two districts was statistically significant ($X^2= 20.54$, $n= 315$, $df=3$, $P=0.0001$).

Table 3. *Prominent places of sexual harassment at school area*

| Common places of sexual harassment | Lalitpur | | Rupandehi | | Total number of respondents | Total Percentage |
|------------------------------------|----------|------------|-----------|------------|-----------------------------|------------------|
| | Number | Percentage | Number | Percentage | | |
| Classroom | 161 | 97 | 125 | 84 | 286 | 91 |
| Extra-curriculum time | 119 | 72 | 142 | 95 | 261 | 83 |
| Canteen | 37 | 22 | 77 | 52 | 114 | 36 |
| Library | 36 | 22 | 30 | 20 | 66 | 21 |

$X^2= 20.54$, $df=3$, $P=0.0001$

(Multiple response cases 727)

Similarly, during focus group discussion, some other places like school fields and lobby, computer class, and science laboratories were also mentioned as the places where girls have to sexually harass as well. Some of the verbatim made by girl students are illustrated below:

Usually, we have to be sexually harassed in the classroom, science lab, and computer class. The teacher intended to touch and brush their body part with our bodies seems unknowing and they take it as a simple matter. Similarly, boys speak vulgar words around us at the classroom and canteen (A Janajati girl studying in a community school in Lalitpur).

Boys remark on our body parts like breasts and thigh and hip during extracurricular activities and. Due to that reason, we cannot play properly.

Not only the male peers but also the teachers were found to be involved in sexual harassment activities in the classrooms.

One of our teachers tells dirty and double meaning jokes in the classroom. Other teachers also slap us at our hip and intentionally touch our body parts. Sometimes they constantly see at our lower body part and the breast also. (A Janjati girl studying in institutional school at Lalitpur).

The Major Offender of Sexual Harassment

Girl students have to encounter different types of people inside and outside the schools and they may have to suffer from sexual harassment by those people. However, the types of harassment and its severity may vary according to the harasser. According to location, at both districts, the sexual harassment by the classmates was higher as compared to other perpetrators which were 77% & 69% in Lalitpur and Rupandehi respectively and the difference was significant at 0.05% level. After the classmate, teachers were found involved in sexual harassment and it was 50% in Lalitpur and 48% in Rupandehi, and the difference was not statistically significant (Table 4).

Table 4. Percentage of girl students sexually harassed by different perpetrators

| SH on different situation | | Percentage of girls students having sexual harassment from different perpetrators | | | | | | | | | |
|---------------------------|----------------------------|---|---------|-----------------|--------|----------|---------|-------------------------|---------|-----------|---------|
| | | Classmate | | Senior students | | Teachers | | Neighbors and relatives | | Strangers | |
| | | No | yes | No | yes | No | yes | No | yes | no | yes |
| Location wise | Lalitpur | 23 (77) | 77(265) | 89(| 11(39) | 50(170) | 50(172) | 78(534) | 22(150) | 54(183) | 46(159) |
| | Rupandehi | 31(107) | 69(243) | 79(275) | 21(75) | 52(183) | 48(169) | 72(506) | 28(197) | 57(200) | 43(152) |
| | P value | 0.02* | | 0*** | | 0.5 | | 0.008** | | 0.38 | |
| Caste wise | Brahaman/ chettri/ thakuri | 30(90) | 70(217) | 78(243) | 22(67) | 50(156) | 50(156) | 75(460) | 25(157) | 57(170) | 43(134) |
| | Advance janjatis | 24(28) | 76(90) | 91(107) | 9(11) | 46(54) | 54(64) | 78(184) | 22(52) | 58(68) | 42(50) |
| | Disadvance djanjatis | 22(45) | 78(160) | 85(176) | 13(15) | 55(114) | 45(93) | 75(312) | 25(102) | 52(104) | 50(103) |
| | Dalit | 25(7) | 75(21) | 93(26) | 7(2) | 61(17) | 39(11) | 57(33) | 43(25) | 57(16) | 43(12) |
| | Madhesi | 31(9) | 69(20) | 88(26) | 12(3) | 41(12) | 59(17) | 74(43) | 26(15) | 59(17) | 41(12) |
| | P value | 0.242 | | 0*** | | 0.33 | | 0.025* | | 0.64 | |

(The value in the parenthesis represents the number of respondents)

Senior students, relatives, and neighbors and strangers were also found involved in sexual harassment against school girls. Similarly, among the girls from different castes and ethnicity too, the sexual harassment from the classmate was more frequent than the other perpetrators which were followed by teachers on the girls from all castes and ethnicity but the difference was not statistically significant at 0.5% level (Table 4). Girls from different castes were also found sexually harassed by strangers, neighbors, and senior students and the difference was statistically significant at a 0.5% level.

In qualitative data also, a similar result was seen where classmates were found as major sexual offenders and 26 participants out of 72 participants in FGD said that they were sexually harassed from classmates and girls express their experiences of sexual harassment as:

Boys from our class tease us by using vulgar words. Generally, we ignore it a beginning. After their repeated odd behavior, we used to scold them. But they never change their behaviors. Sometimes they also connect our name with their friends and spread false humor. They also call sister in law (Bhauju) to some of our friends too (Brahman and Janajati girl studying in institutional school at Rupandehi.)

Not only the boys and the teacher were also reported as a sexual offender by girl students and the different experiences of sexual harassment by a teacher has been expressed by the girl students were as

A teacher in our school was used to touch in sensitive parts including the girls studying at the primary level too. Once, we got information from the girls who were harassed sexually from that teacher, the school expelled him from this school (Principle from institutional school at Lalitpur during KII).

The other offenders were unknown people followed by neighbors and relatives. In FGD 13 participants were found sexually harassed by the relatives and their experiences were as below.

I have one man with the age as the grandfather in the neighbor. When he found me alone then he tries to touch and catch my breasts (Dalit girl studying in institutional school at Lalitpur).

One day my brother in law (Bhinaju) invited me to Narayangard to bring some goods. When I reached there, he was staying in a hotel room. When I reached there, he asked me to drink the juice. But I noticed something wrong in juice and I ignored taking juice but, at that time he pushes me at bed forcefully and he tried to do rape me. I coped with the situation and escaped from there. (A Dalit girl studying in community school at Rupandehi during IDI).

Along with the other sexual offender, 19 participants in FGD said that they were harassed by strangers.

People tease us when we are walking on the way in the community and they say, come on come on (A brahman girl studying in community school at Rupandehi).

We have to face a lot of sexual harassment which cannot be expressed. Unknown boys tease us and say Sali, Soltani, Kanchi, etc when we are walking on the way (A Janajati girl studying in institutional school at Lalitpur).

Though the frequency of sexual harassment which was done by classmates/boys was very high, most of them were of less severe types of sexual harassment. Similarly, the sexual harassment was done by strangers of less severe types of harassment, but the sexual harassment which was done by teachers, neighbors, and relatives were of moderate and severe types of sexual harassments. That may be due to the poor chances of the physical proximity of the boy students with girl students, but in the case of teachers and relatives, who have more chances of physical closeness and such proximity which they got, they take unnecessary advantages from it and girl students became victim with moderate and severe types of sexual harassment.

Level of Sexual Harassment from Different Sexual Harassers

The level of occurrences of sexual harassment to the girl students according to different types of harassments from teachers, peers/classmates and relatives/neighbors, numerous single and combinations of responses of the respondents in real-life systems have been analyzed and interpreted with four multiple response questions (MRQ) in Likert's four-point scale (i.e., Never, rare, sometimes, and frequently) answer and subsequent dummy coding (i.e., "Never" numerically coded as 1, and so on up to 4). From the study, adolescent girl students were found harassed sexually by the different sexual offenders at different levels.

The most common types of sexual harassment by teachers were touching/pinching where 37% of the girls said they faced touching and pinching from teachers at different levels. Similarly, in the case of male peers/ friends and relatives, neighbor verbal and gestural types of sexual harassment were found more common and it was 65%. Likewise, 62% of the girl students were found sexually harassed by their male peers/friends and relatives/ neighbors respectively (Table 5). Among other types of sexual harassment, 31% of the girl students were found sexually harassed with messages from male peers/friends. Relatives and neighbors were found more involved in sexual assaults and abuse (8%) at different levels from rare to frequently.

Table 5. *Different types of sexual harassment from different offenders*

| Sexual offenders | Sexual harassment level | Percentage of sexual harassment types | | | |
|----------------------|-------------------------|---------------------------------------|-------------------|-----------------|---------------|
| | | Touching and pinching | Messaging (T/A/V) | Verbal/gestural | Abuse/assault |
| Teachers /staff | Never | 63 (411) | 94 (612) | 68 (446) | 94 (615) |
| | Rare | 27 (175) | 5 (32) | 20 (131) | 4 (24) |
| | Sometimes | 2 (14) | 0 (1) | 3 (20) | 1 (6) |
| | Frequently | 8 (51) | 1 (6) | 9 (54) | 1 (7) |
| | Total | 100 (651) | 100 (651) | 100 (651) | 100 (652) |
| Male peers/ friends | Never | 69 (451) | 69 (453) | 35 (229) | 94 (616) |
| | Rare | 25 (165) | 16 (106) | 28 (182) | 4 (25) |
| | Sometimes | 1 (5) | 3 (17) | 4 (28) | 2 (16) |
| | Frequently | 5 (35) | 12 (82) | 33 (221) | 0 (0) |
| | Total | 100 (656) | 100 (658) | 100 (660) | 100 (657) |
| Relatives /neighbors | Never | 57 (390) | 73 (493) | 38 (261) | 92 (630) |
| | Rare | 33 (222) | 17 (117) | 35 (237) | 6 (40) |
| | Sometimes | 3 (17) | 1 (9) | 4 (25) | 1 (4) |
| | Frequently | 7 (50) | 9 (60) | 23 (155) | 1 (4) |
| | Total | 100 (679) | 100 (679) | 100 (678) | 100 (678) |

(Multiple responses cases; Value in parenthesis represents the number of respondents)

In qualitative data, according to girl participants' experiences sharing during the focus group discussion, 19 participants said that teachers frequently involved in touching and pinching types of harassments rather than other types of harassments. Similarly, respondents expressed that the verbal types of harassment (teasing by connecting names with other boys, vulgar words and jokes, etc.) were very common from their male peers/friends. According to schools' Head or Assistant headteachers in Key informant interviews (KII), they informed that girls had made many complaints about the teasing and using vulgar words to them by other boys at school. During the focus group discussions, seven cases of sexual abuse and assault on girl students by their relatives were found. Some of the opinions which were expressed during the Focus group discussion and In-depth interview were listed as follows:

My family is living with the parental uncle and my father is working in a foreign country. When my uncle got drunk, at that time he tries to harass me sexually. At that time, he forcefully kisses and touched my sensitive organs. He used to threaten not to tell anything to any person. Some time he purposes some money not to tell his bad behavior to the person and to family members too. When I used to cry during his misbehavior, at that time he used to close my mouth. I have no alternatives too and my mother also has no idea how to overcome this situation. (A Janajati girl studying in community school at Rupandehi during IDI).

My cousin's brother sometimes comes to our home on special occasions. When he comes to my house we all children share the same room for sleep. At that time, when we go to bed at midnight, he secretly starts to harass me by rubbing and catching my body parts and sensitive organs. (A Dalit girl studying in institutional school at Rupandehi during IDI).

The higher cases of a severe and most severe type of sexual harassment by the relatives and neighbors might be due to our social system in which the parents and the girls themselves trust and have to depend on for each other in many other activities. Due to such dependency, such harassment might have happened.

Discussion

Girl students were found sexually harassed at different places from school to their home. Among the most common and vulnerable places of sexual harassment, public transport was in the first rank (31%) followed by public areas which were 30%. A similar situation of higher prevalence of sexual harassment at public places and public transport has been reported by Thapa and Rana (1994) where more than 50% of the girls and women were harassed at a public place in the Nepalese context. Another study done by Mishra and Lamichhane (2018) has also reported that 79% of the female health students of one of the medical institutes in the Kathmandu valley were found sexually harassed at public transport. Geloski et al.'s (2017) review of studies on sexual harassment of women and girls on public transportation found that global prevalence rates ranging from 15% to 95%, with women in developing countries are more likely to have been harassed. The higher incidence of sexual harassment at public transports might be due to the proximity and anonymity of the perpetrators with the girl, which, in turn, results in high levels of sexual harassment and abuse with very little risk of social or legal consequences.

Not only in the public places by the anonymous perpetrators, but 22% girls were also found sexually harassed at the school which resembles with the study by Gyawali, et al. (2012) and they have reported that 20% of girl students were sexually harassed at the school area in Kathmandu valley. In the school area, the classroom and library were the common places where the girls were sexually harassed. Along with the other places, girl students were found prone to sexual harassment inside their home and 16% of the respondents faced sexual harassment there. From this study, it has been seen that our adolescent girls are not safe at any corner of society from sexual harassment. Not only the quantitative study, but the qualitative study also shows that public places, public transport, and school areas are the most common places where sexual harassment takes place against the girl students. As regards the higher incidence of sexual harassment on the teens in public schools Fogarty (2012), showed that about 80% of the females experienced sexual harassment while in school in the United States; similar results have been reported by Hills and Kearl (2011). These results show that school is one of the most vulnerable areas of sexual harassment. In an educational setting *quid pro quo*, sexual harassment is said to occur when a superior (supervisor/lecturer) conditions the granting of an economic/academic reward upon receipt of sexual favors from a subordinate/student or effuse fear by threatened the subordinate/student if he/she refuses to submit to his request (Dhlomo et al., 2012). Similarly, due to male-dominated culture, the girl students have more chances to be victims of sexual harassment from their male peers in the school areas.

Schoolgirls were found sexually harassed by different persons from close relatives to strangers at different places. In this study, peers and friends (classmates & senior students), teachers, and relatives/neighbors were reported as major sexual offenders. Among them, it was found that 39% of the girl students were sexually harassed by a classmate and senior students which were followed by teachers (21%). A similar result of sexual harassment from the teachers also reported by Hill and Silva (2005) revealed that 83% of the girl students in the 8-11 graders were sexually harassed and 38% of them were sexually harassed by teachers and school employees in America. Plan (2008) also reported the higher involvement of teachers and axillary staff on sexual harassment in Africa. Along with the teachers and classmates, other perpetrators were neighbors/ relatives (21%) and strangers (19%). Neighbors and relatives were also found responsible for sexual harassment upon girl students. The peer (boys) were found involved in sexual harassment more frequently but the nature of the sexual harassment behaviors were less severe types. On the other hand, sexual harassment from the teachers, neighbors, and relatives was moderate types to extreme severe types of harassment. The higher prevalence of severe and extreme severe sexual harassment from the teachers and relatives might be due to higher trust to them from the family member of the girl students. Due to this reason those persons get a chance to be close with adolescent girls and they use their proximity negative ways and involve in sexual harassment and it is one of the causes behind the accelerated sexual harassment. Along with the teacher and relatives, girls are also harassing sexual from their male peers and friends where the boys' Male peers and friends might involve in sexual harassment by considering it as a simple thing and as fun and as to show their masculinity power which they may have learned from the society.

Conclusion

Girl students are being harassed by their teachers, peers, relatives, and strangers in their daily life. The cases of sexual harassment at girls at their own home of the girl students also indicate the vulnerability of girls due to sexual harassment at almost all places by many offenders in the Nepalese context. Girls were also found harassed from the stranger. The poor complain rate, lengthy process for justice, and lack of confidentiality of the victim were found responsible for accelerated sexual harassment from strangers. The public transport and public places were noted as the major places where sexual harassment happened and along with those place school areas also reported as the next vulnerable places of sexual harassment on girl students. This situation was unexpected since generally schools were considered as a temple for learning and safe places for the students where students can learn and make them perfect for future challenges. The sexual harassment of girls in the classroom, laboratories, and during extra curriculum activities might affects the overall development of the victim hence it is an urgent need to create an anti-sexual harassment environment at the school level to make an ideal place to flourish the capacity and potentialities of girl students.

Girl students are being harassed by their teachers, peers, relatives, and strangers in their daily life. The cases of sexual harassment at girls at their own home of the girl students also indicate the vulnerability of girls due to sexual harassment at almost all places by many offenders in the Nepalese context. Poor complain rate, lengthy process for justice, and lack of confidentiality of the victim were found responsible for accelerated sexual harassment from strangers. Public transport and public places were noted as the major places where sexual harassment happened and along with those places, school areas are reported as the next vulnerable places of sexual harassment on girl students. This situation is unexpected since schools are considered as temples for learning where students can learn to make them perfect for future challenges. The sexual harassment of girls in the classroom, laboratories, and during extra curriculum activities might affect the overall development of the victim. Hence it is an urgent need to create an anti-sexual harassment environment at the school level to make an ideal place to flourish the capacity and potentialities of girl students.

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A Review of Parental Role on Risky Sexual Behaviour of Adolescents

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Abstract

Adolescence is a phase in human life which is characterized as the growing desire for sexual intercourse. Furthermore, the lack of knowledge on sexual health during this phase may result in risky sexual practices. So, parental monitoring is essential for this group of people. On this basis, I have conducted a review on parental monitoring of risky sexual behaviour of adolescents. While reviewing, accessible and eligible resources are consulted from PubMed, Hinari, Research Gate, etc up to November 2018. This review primarily focuses on how the parents monitor the probable risky sexual practices of their adolescent children. On the basis of existing literature, this review attempts to explore the growing risky practices of sexual behaviour among children without parental guidance.

Keywords: Adolescents, parental monitoring, premarital sex, risky sex, sexual desire

Introduction

Risky sexual behaviour incorporates sexual malpractices such as sexual harassment, homosexuality, animal sex, group sex, use of artificial devices, sexual abuse, etc. (Sharma, 2018). These malpractices have been more common to adolescents these days so, parental monitoring and counseling on the physical changes in this period have been felt required (Coley, Votruba-Drzal, & Schindler, 2009). Otherwise, they are prone to sexual abuse and unsafe sexual practices resulting in human immunodeficiency virus [HIV]/ acquired immunodeficiency syndrome [AIDS]/sexually transmitted infections [STIs] and other social and mental health problems (Coley et al., 2009). The consequences of these acts may expose teenagers to reproductive health problems like teenage pregnancy, undesired pregnancy and abortion (Arnett, 2007).

Adolescents are the most relevant and potential age group likely to be exposed to reproductive health hazards (Greenberg, Magder, & Aral, 1992). At this stage of life, adolescents are more fascinated with sex and sexual activities (Kar, Choudhury, & Singh, 2015; Markham et al., 2010). Physical and biological changes in the body increase their sexual desires. On one hand, they are sexually active but on the other, they are not aware of the reality of life and the possible consequences of risky sexual practices (Adhikari & Tamang, 2009; Malacane & Beckmeyer, 2016).

Sexual behavior at first intercourse is associated with a curiosity that carries the chance of pregnancy (Sharma, 2018). Because of the lack of awareness on contraceptives, most such relations may result in physical and emotional hazards (Kar et al., 2015). The first intercourse may also carry the risk of sexually transmitted diseases (Greenberg et al., 1992). So, it calls for

the policy review that the concerned authorities should launch an awareness campaign against the premature sexual practice and risky sexual behaviour.

Most of the adults tend to be the parents during the early decades of the twenty-first century which can be marked as the departure from the earlier century in social, cultural, and other lively hoods (Aral, 2001; Heatherington & Lavner, 2008). So, the newborn children of this early century will entertain certain changes in social, cultural and other aspects. In this new scenario, the role of parents may be divided into three main categories: support in education, making home a good place for learning, and helping with homework (Early Childhood Stakeholders Advisory Committee [ECSAC], 2001).

Some studies point out that peer groups have an influence on the sexual behaviour of adolescents (Racz & McMahon, 2011). However, it is one of the rigorously researched topics in Nepal. To bridge the gap, it is thus essential to study the factors surrounding premarital sex in the context of Nepal in order to inform policy makers and planners and to develop appropriate and timely intervention programs to prevent the high risk of sexual behaviour. The study is required to analyze sexual behaviour especially focusing on the parental role to prevent risky sexual behaviour among adolescents.

Methods

This study reviews the role of parents on the risky sexual behaviour of adolescents. It complies with the pre-planned methods to identify all available peer-reviewed journals. The search is done using the following terms; “risky sex”, “adolescents”, “parental role”, and “risky sexual behaviour”. The population, interest and context terms are combined using pertaining terms OR (within columns) AND (between columns) and are searched as title/abstract except headings. Online databases are searched from inception for literature. Likewise, Hinari, PubMed, Research gate, Google scholar, etc. are accessed on the basis of their requirement. All published articles up to 2018 from Hinari have been included in the review. The reference lists of identified articles are searched for additional studies and tracked citations of key studies.

Study Selection

The review found a total of 845 published articles. Among them, 225 full texts online are found and only 147 articles are accessed. There are only 119 articles since 5 years back are included and 17 repeated articles are excluded after screening. From the remaining 102 articles, 47 abstract articles are removed. A total of 55 full-text articles are screened for eligibility. From this, 32 articles are excluded since they fail to fulfill the expected result or quality criteria. After that, from the remaining 23 articles, 17 articles are found not related to the parental role. Finally, 6 studies have been included in this analysis.

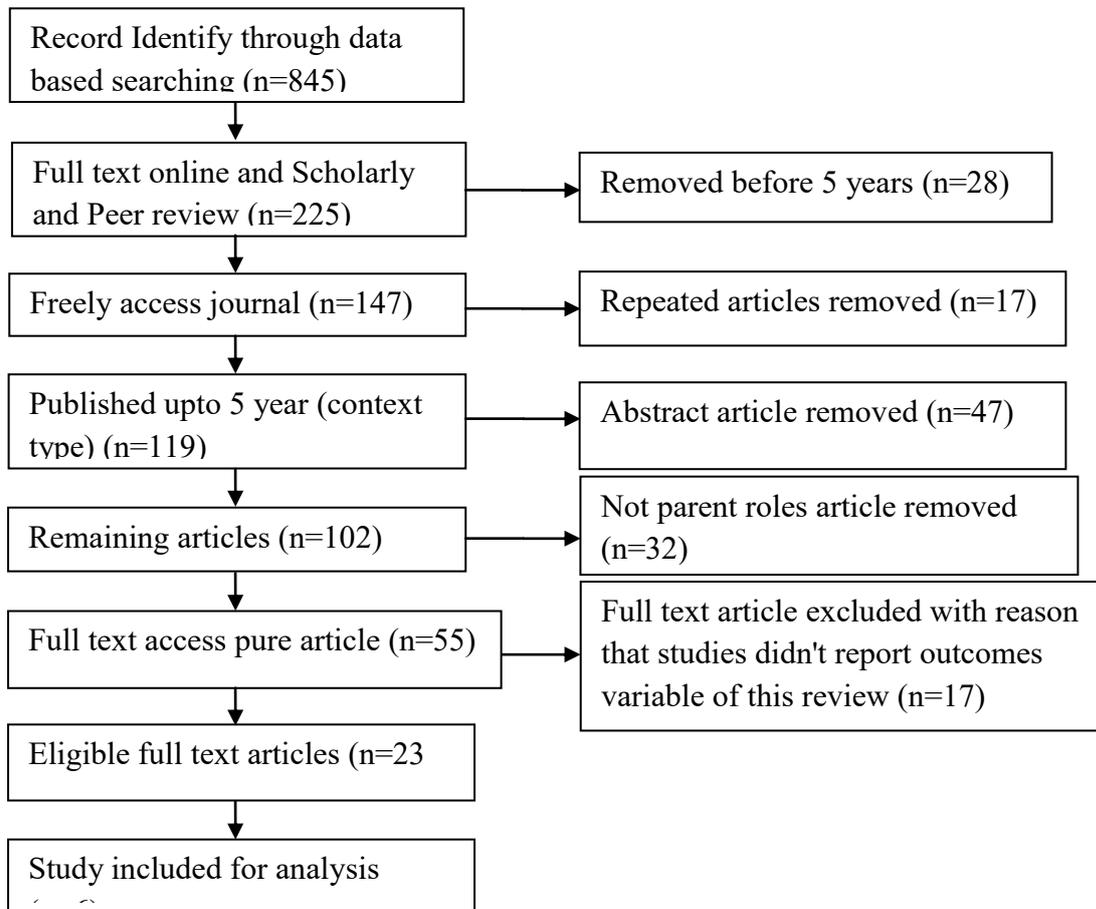


Figure 1. Flow diagram of the studies included in the analysis

Results

This study helps us to see whether our results are over-focused in one area. For each theme or area, we should discuss how the results help to answer our study. Finally, we need to check whether the results are consistent with our expectations and the literature.

This study is to determine whether parental monitoring and parent-adolescent communication about sex are associated with sexual behaviours. Parental monitoring, communication and counseling about sex, parent-adolescent relationship, cohabitation, age, and sexual orientation are associated to determine the sexual behavior of adolescents.

Table 1: The general characters of study in the systematic analysis :

| Author/Year | Country | Study design | Data sources | Sample size | Adjusted confounding | Conclusion |
|--|---|-----------------------------------|--|--|--|---|
| Asamoah & Agardh, 2018 | Sweden | Cross-sectional assessment | Survey used a questionnaire with pre-validated questions. | Out of 7000 from 18-29 year randomly selected 2968 | Risky Sexual Behavior Among Young Adults 18-30 Years of Age, Residing in Skane, Sweden | Sexual behaviors such as having sexual intercourse with unfamiliar partner and multiple sexual partners have relation with individual and family status. Age during sexual debut is solely found to be associated with family level predictors. |
| Grossman, Jenkins, & Richer, 2018 | Spain | Longitudinal study | Self-administered interview schedule | Researchers interviewed participants twice: once when teens are in seventh grade and again when teens are in tenth grade. 24 Schools and 177 parents are selected. | Teenage child and their parent's role in risky sex. | Communication can provide a protective tool to improve public health outcomes by reducing teen pregnancy and sexually transmitted infections. |
| Muhwezi, Katahoire, Banura, Mugooda, Kwesiga, Bastien, & Klepp, 2015 | Uganda | Exploratory and Qualitative study | Focus group discussions and KII | There are 4 FGDs of male students, with a total of 56 participants. Female students are 4 with a total of 63. And male parents are 2 (1 with 5 & another with 7) and 1 FGD of female parents with 8. | Sexual and reproductive health, Communication between parents and children | Peers, schools and mass media should be creatively harnessed to improve parent-adolescent communication about sexuality. |
| Wang, B, Stanton, B, Deveaux, L., Li, X., & Lunn, 2015 | Bahamas (Caribbean Country) | Experimental/ Survey | Baseline survey/ Questionnaire | 770(3-17) Adolescents | Peer risk involvement and Adolescent sexual risk behavior | Reciprocal relationships between parental monitoring, peer influence and adolescent sexual risk behavior. |
| Dessie, Berhane, & Worku, 2014 | Sub-Saharan Africa | Cross Sectional | Structured questionnaire and interview | The study is conducted on 13-18 adolescents aged. From 4559 adolescents who were interviewed, 641 who reported sexual initiation were included from March to July 2012. | Parental monitoring prevents adolescents from risky sexual practices. | High parental monitoring decreases the likelihood of risky sexual practices. |
| Thoma & Huebner, 2014 | United States: Indianapolis, Boston, Philadelphia & Oakland | Cross-sectional assessment | Audio Computer Assisted Self-Interview (ACASI) program and questionnaire | 257(14-19) Adolescents | YMSM, adolescent sexual risk, parental monitoring, communication about sex, | Lack of parental monitoring and rare communication are associated with greater risk. |

Researches on Swedish-born youths show that parental educational level plays key role in determining sexual behavior. A youth whose parents have a higher level of education has a low risk of early sexual debut compared to their peers (Asamoah & Agardh, 2018). But, they are prone to having sex on the first night with an unknown person. The use of condom is not associated with any family-level factor. In comparison to females, males are relatively at a higher risk of malpractices in sexual activities (Asamoah & Agardh, 2018).

Parents often have a different opinion about the parent-child consultations on sexual behavior. They come up with different logic why they prefer to talk with their children or why they prefer to remain silent on this regard. While interviewing for the first time, 78 percent of the parents among 23 respondents, responded on the reason why they like to discuss with their teens about sexual behavior while on the second interview only 65 percent of the respondents responded on it (Grossman et al., 2018). Here, parents express satisfaction on the benefits of effective communication with their children. Comfort on talking about sexual behaviour is described more by parents of females (82%) than that of males (50%) (Grossman et al., 2018). In the first interview with parents (70%, 16/23) and in the second interview 65 percent of the parents (15/23) described the ways their teens displayed positive engagement in talking with them about sex. (Grossman et al., 2018). Similarly, on dating and relationship affairs, 91 percent of the parents (21/23) in the first interview and 96 percent of the parents (22/23) in the second interview reported of their interactions with their teens (Grossman et al., 2018).

Regarding to teen pregnancy, on the first interview, 96 percent of the parents (22/23) and all parents at second interview reported that they talked with their teens about this topic often emphasizing teen pregnancy and parenting, sexually transmitted infections (STIs), and protection methods (Grossman et al., 2018).

For a healthy relationship between parents and children, communication plays a vital role. In this regard, children are more open and close to mothers rather than fathers. They could speak and consult with mothers on sexual diseases, physical changes and sexual health issues with her. However, discussions of dating with adolescents are rare. Common discussions with female adolescents are often menstruation and perceived abortion in the neighborhood (Muhwezi et al., 2015).

Mutual relationship is found among children, their peer and parental monitoring regarding the determination of sexual behavior of a teen. The risk of peer involvement in sexual activities and so on is prevalent among males and female children. For males, greater sexual risk behavior can be predicted to lower parental monitoring. Parental monitoring can be predicted as a result of decreased sexual risk behavior. Likewise, a higher initial level and a higher growth rate of peer risk involvement can be predicted to increased sexual risk behavior (Wang et al., 2015).

In research conducted in Ethiopia, it is found that 301 of 633 adolescents experience one or more risky sexual practices. High parental monitoring decreases the chance of engaging in risky sexual practices by 28 percent. A satisfactory level of sexual and reproductive health communications with their parents reduces risky sexual practices (Dessie et al., 2014).

In the sexual behavior of children, parental monitoring and parent-child communication is found as a panacea in protecting their children from sexual hazards. Sexual orientation-specific stressors, including “coming out” to parents, complicate the family context of young men who have sex with men (Thoma & Huebner, 2014). Sincere monitoring of parents and interaction with children can be predicted to protect these children from sexual hazards.

Discussion

The engagement of an adolescent is determined by his/her relation with peers, parents and the mutual relationship among them. It suggests that peer plays a vital role in risky sexual behaviours in girl students (Wang et al., 2015). Authors present the longitudinal data, and the application of structural equation modeling and latent growth curve modeling for the examination of the concurrent, reciprocal and prospective relationships of parental monitoring, peer influence and adolescent sexual risk engagement are the prime concern for the study. The authors opine that the reciprocal relationship between parenting, peer influence and adolescent sexual risk involvement contributes to the understanding of the causes of risky sexual practices. They suggest that the reduction of risky sexual practices can result in interventions with a positive role from friends and parents.

Parental acceptance of children is the foundation for healthy adolescent-parent communication. Girls tend to communicate with mothers in an open and frequent manner than fathers and they have better relationships with mothers. Fathers are perceived by adolescents to be strict, intimidating, unapproachable and unavailable (Muhwezi et al., 2015). While adolescents tend to discuss sexual issues with mothers, male adolescents communicate less with other people on sex and such affairs. Much of the parent-adolescent communication is perceived to focus on sexually transmitted infections and bodily changes (Muhwezi et al., 2015; Wang, 2015). Discussions on sex and dating among adolescents are perceived to be rare. Common discussions among female adolescents are menstruation and abortion cases in the neighborhood (Muhwezi et al., 2015). Authors opine, the fear among male adolescents to discuss sexual affairs is perceived to be triggered by parental suspicion. Moreover, peers at school and mass media are perceived to be the main sources of information on sexuality.

Parental monitoring, commonly thought to be protective against sexual hazards, may not function. We identified no protective benefit of parental monitoring within the current sample, and our data suggest that monitoring is related to minimizing risk (Thoma & Huebner, 2014). Research on heterosexual adolescents has shown that adolescents, who perceive their parents as disapproving of activities they engage in, are more likely to lie. It may inhibit that they avoid the disclosure or lie to parents about the personal aspects if they perceive their parents reject their sexual orientation (Thoma & Huebner, 2014). If a parent does not know about her son’s sexual orientation, he/she may not take corrective actions against this children's malpractice.

Parental influences on adolescent sexual behaviours and increased parental monitoring work as the protective measure against sexual behaviours; early involvement in sexual practices, failure to use condoms, increased sex frequency and multiple sex partners (Dessie et al., 2014). They suggest that parental role is associated with minimizing the risk of STIs. Furthermore, parental information on their child and their activities is an important component of parental role to

minimize the practice of risky sexual behaviour. Although parental knowledge is associated with the prevention of sexual risk of their children, the literature indicates that parent supervision and communication are most influential with respect to reducing adolescent sexual risk-taking behaviors (Muhwezi et al., 2015).

One of the important factors which could confound the relationship between the adolescent and the family is the sound relationship among the family members (Wang et al., 2015). Similarly, They opine parental monitoring and parent-adolescent communication about sex is likely to reduce the negative consequences resulting in the proper monitoring of the adolescents. Likewise, parents with quality relationships with their teens are more likely to have healthy discussions about sexual topics (Dessie et al., 2014). Adolescents are more likely to reveal their sexual orientation to a parent when they perceive a strong attachment with them (Wang et al., 2015). In this research, a healthy relationship between parents and children is examined as a potential covariate for the present analysis.

Information on sexual activity relies on adolescents' self-reports and thus risky sexual behaviours may be misreported or underreported because of the fear of social constraints and recall bias. Second, in developing the composite score of risky sexual involvement, we followed the literature in assigning the same weight to all risky sexual behaviours. Although, some behaviours may be associated with a higher risk of infection with human immune deficiency virus [HIV] or other STIs family and peer factors can contribute to minimizing the possible risks (Grossman et al., 2018). However, previous research on peer influence suggests that perceived peer behaviour is more important than actual peer behaviour in predicting adolescent risky behaviour. Authors reveal that the strengths of this study include the use of longitudinal data, and the application of structural equation modeling and latent-growth-curve modeling for the examination of the concurrent, reciprocal and prospective relationships among parental monitoring, peer influence and adolescent sexual risk engagement.

Many parents face different kinds of challenges in talking effectively with their teens about the affairs of sexuality. But sometimes lack of accurate information regarding sexual health and discomfort to talk about sex comes as a barrier to the parents. However, perceptions of children not ready to talk about sex is also another barrier (Grossman et al., 2018). There are studies which found that among sexually active teens, parents of 55 percent children incorrectly reported that their teens do not have sexual relation which may relate to social norms or parental beliefs against teen sex. It suggests implications that if parents' messages about sexuality do not match teens' needs and developmental phases, it may be difficult to maintain a harmonious relationship. Inaccurate perceptions of teens' sexual experience may prevent parents from providing key guidance to their teens on sexual issues (Grossmann & Grossmann, 2019). According to the authors, parents' focus on delayed sex can be health-promoting for teens that do not have sexual relations. Besides, the preventive measures and harmonious relationship with parents may save from undesired pregnancy and sexually transmitted infections.

Parental monitoring decreased the likelihood of their engagement in risky sexual practices (Dessie et al., 2014). Authors indicate that adolescents potentially act responsibly against risky

sexual practices when there is high parental monitoring due to the fact that parental monitoring enhances the self-esteem of young people. Moreover, the authors opine that parental monitoring can indirectly protect them from other risky behaviours. Finally, this illuminates that parental monitoring may be an important perspective to be considered in an effort to improve adolescents' sexual and reproductive health.

Adolescents who are in high parental monitoring are less likely to engage in a higher number of risky sexual practices. Those who had a satisfactory level of sexual reproductive communication is less likely to report a higher number of risky sexual practices (Dessie et al., 2014).

As young people explore different aspects of sexuality, their sexual engagements and outcomes may be influenced by the context in which they grow up and their immediate family environment. This environment could create opportunities for improving the sexual and reproductive health of young people by mitigating risks associated with sexual behavior (Asamoah & Agardh, 2018). It facilitates a positive approach to sexuality and sexual relationships and the experience of safer sex. Moreover, the authors suggest that the male gender is related to a higher risk of engaging in sexual risk-taking behaviours. As well as, parental education level is significantly associated with the awareness of sexual intercourse on the 'first night' and early sexual debut solely among youth.

Conclusion

This study stresses on the parental role to prevent adolescents from risky sexual practices. A proper parental role can be protective of adolescents to prevent him/her against wrong sexual orientation. Interventions from families and friends may benefit from the prevention of risky sexual practices. With risky sexual practices, they are prone to various health hazards like undesired pregnancy, STI/HIV/AIDS, psychological, and other social health problems. Parental monitoring in this regard reduces the chance of sexual malpractices. Furthermore, to minimize the risk, communications and interactions between parents and adolescents can play considerable roles. Besides, monitoring from the school and the workplace also plays a crucial role in this regard.

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Premarital Sexual Behaviours among Secondary School Adolescents: A Cross-sectional Study in Kathmandu

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Abstract

Young people's sexuality is often stigmatized in South Asian societies, including Nepal, where premarital sex is not accepted socially and culturally. However, the prevalence of early sexual activities among adolescents has increased over time. Given this background, this paper aimed to explore the prevalence of premarital sexual behaviour among the urban high school adolescents. This study utilized a cross-sectional design and collected a total of 609 students of grade 9-12 [ages 10-19] from both community and institutional schools in the Kathmandu metropolis. A validated structured questionnaire was employed and data were analyzed using SPSS with version 24. Univariate, bivariate, and multivariate analyses were performed to interpret the results. The study showed that the mean age of the respondents was 16 years. More than half of adolescents (52.4%) ever watched pornography, amongst whom eight percent did it on a regular basis. Similarly, 14 percent of in-school adolescents ever experienced premarital vaginal sexual intercourse, where the median age for the sexual debut was 16 years. Male respondents tended to be 13 times more likely to have premarital sex compared to the girls. Respondents who were exposed to pornography materials were likely to be exposed by 5.7 times higher than that who were not. Further, 48 percent respondents who ever had sex did not use condoms during their first sexual intercourse, followed by 45 percent who had multiple sex partners. The study concluded that a notable proportion of adolescents was involved in premarital sexual behaviours followed with vaginal sexual intercourse, especially among the boy students. Hence, the results of this study suggest school-based comprehensive sexuality education to minimize the risky sexual behaviour and promote the safer sexual activities among the secondary level school adolescents.

Keywords: Comprehensive sexuality education; Kathmandu metropolis; Pornography; Premarital vaginal sex; Risky sexual behaviour; Secondary school adolescents

Introduction

The age group of 10-19 years, called adolescence, is the period of rapid physical, mental, social and emotional development, which results in creativity, idealism, optimism and a spirit of adventure among the adolescents (WHO, 2005). However, it is also the period of experimentation, risk-taking, experiencing peer pressure, making uninformed decisions and especially relating to their bodies and sexuality (Gullotta, Plant, & Evans, 2014). Sexual behaviour of young people is one of the public health issues (WHO, 2011). Sexual and reproductive health issues remain the leading cause of ill-health among young people (Jha, Chaurasia, & Jha, 2010). Premarital sex has been widely accepted, especially in Western

countries, where two-thirds of young people have had sexual intercourse during their teens (UNICEF, 2001). It is common in high-income countries like Denmark, Norway, Finland, Iceland, Germany, the United Kingdom, and the United States, where more than three-quarters of young people have experienced premarital sex (Finer, 2007). However, premarital sex is not accepted socially and culturally in South Asian societies, including Nepal (Gubhaju, 2002). Young people's sexuality is often stigmatized in Nepal (Acharya, van Teijlingen, & Simkhada, 2009). Moreover, school teachers and health service providers are also reluctant to discuss the issues of sexuality with adolescents (Acharya et al., 2009; Pokharel, Kulczycki, & Shakya, 2006). However, the prevalence of early sexual activities among adolescents has increased over time (Adhikari, Adhikari, & Sulemane, 2018; Adhikari & Tamang, 2009; Puri, 2002; Tamang et al., 2001). Gubhaju (2002) argued that poor wealth status of family, increased urbanization, migration and exposure to mass media have collectively contributed to major changes in social and sexual behaviour among the adolescents in the Asia and Pacific Region. Shrestha (2019) argued that parenting and family and societal environment, cultural and traditional values, economic condition, school environment, peer influence, love affairs, social media are conducive factors for premarital sex. Further, Hayward (2019) added that the religion of the adolescents influences their attitudes, perception and behaviours towards the sexual behaviours.

A study conducted in five border towns of Nepal revealed that among unmarried men, more than half (54 %) of the residents and 40 percent of the non-residents ever had sex (Tamang, 2001). Similarly, a study conducted in Kathmandu reported that 39 percent of male college students experienced premarital sexual intercourse, however nearly half of the adolescent males (43%) did not use condoms during their first sexual intercourse. Interestingly, over half of the male students, who experienced premarital sexual intercourse, had multiple sex partners (Adhikari & Tamang, 2009). Another study conducted among the factory workers in Kathmandu reported that more than one-quarter of the young unmarried factory workers (28%) experienced at least one type of sexual activity with higher proportions of boys (38%) than girls (18%) being involved in sexual activities (Puri, 2002). Similarly, a study conducted by Health Education Association of Nepal (HEAN) among the high school adolescent girls in Kathmandu Valley revealed that more than two-thirds (68%) of respondents watched pornography followed by 28 percent involved in a different form of sexual fantasy and romance like kissing, hugging, body rubbing and touching sexual organs; but only six out of 400 having taken part in premarital sexual intercourse. This was farther common among the private colleges than in community ones (Maharjan, Devkota, & Budathoki, 2018). The Demographic Health Survey of Nepal 2016 demonstrated that among the age group of 15-19 years, four percent of female adolescents and three percent of males had their first sexual intercourse before they reached the age of 15. Within this age group, four percent of female adolescents and less than one percent of males got married before 15 (Ministry of Health Nepal, New ERA, & ICF, 2017).

Many studies have been undertaken to highlight the sexual behaviour of Nepali adolescents; however, we could not find published study regarding the Premarital Sexual Behaviour (PSB) of in-school adolescents including boys and girls considering with both child adolescents (10-17

years) and adult adolescents (18-19 years). Given this gap, this study was conducted among the 9-12 graded secondary school adolescents in 2018. This paper focuses on exploring the prevalence of PSB and premarital vaginal sexual intercourse among the urban high school adolescents in Kathmandu metropolis, Nepal.

Methods

Study Design and Site

A cross-sectional design was used to determine the PSB of urban high school adolescents. This study was conducted in the Kathmandu metropolis. Kathmandu was selected as a study area since the literature shows a higher prevalence of PSB in urban areas compared to rural ones (Ministry of Health Nepal et al., 2017). The schools were selected before the selection of respondents. A pre-test was conducted in February 2018, whilst data were collected from March to April 2018.

Participants' Selection

Secondary level students, who were studied in grade 9-12, were the respondents of this study. Unmarried students who were 10-19 years were the main inclusion criteria to select the respondents from the secondary schools, which run 9-12 grades. To select the respondents, the list of high schools was searched based on the EMIS (Education Management & Information System) record for the academic year of 2017/18 published by the district education office, Kathmandu (Kathmandu District Education, 2017). In total, 15 high schools (8 community and 7 institutional schools) around the metropolis were conveniently selected.

According to the record, 28,791 secondary students were found on the list. This was the total population of this study. Employing the Rao-soft online sampling calculator, 380 respondents were obtained following the 95 percent confidence level with a five percent margin of error. As mentioned in NDHS-2016, the design effects sampling error value for studying adolescents' sexual behaviours in the Bagmati province were 1.134 for boys and 1.634 for girls respectively (Ministry of Health Nepal et al., 2017). This study included both boys and girls, therefore its mid-value (1.384) was calculated to get the adjusted sample size ($n=532$). Since a 13.5 percent non-response rate was found in the pre-test of the questionnaire, the final adjusted sample size was 615.

Sample respondents from each grade were calculated based on a non-proportionate sampling technique. For the purpose, based on the name list mentioned in the attendance register, at least five girls and five boys were randomly selected from each class. This way, at least 40 students from each school were selected. However, the census method was also considered in some schools in the case of if the number of students was less than 10 in a class on the day of the survey. Moreover, it was the end of the session for grades 9 and 10 at the time of survey conduction. Therefore, the number of respondents was adjusted from grade 11-12. Hence, there were fewer 9-10 graders compared to 11-12 graders.

Tools

A self-administrated structured questionnaire was developed based on the NDHS questionnaire for adolescents' sexual and reproductive health (Ministry of Health Nepal et al.,

2017) and a validated tool adopted by Adhikari and Tamang (2009) with necessary modification. The tool was pre-tested among 30 secondary students (about 5% of total sample size) selecting two schools (one community and another institutional) of the Kathmandu metropolis. The tool was modified based on the feedback of the pre-test.

With approval from schools' principals, the instrument was administered among the respondents. Before administration of the tool, both verbal and written consent was taken from each respondent accompanying the cover letter with a questionnaire. The adolescents were assured of the anonymity of their responses as their names were not solicited. They were also asked to quit the survey if they did not like to participate in the study. Nine out of 615 respondents did not return the questionnaire since they were unwilling to participate (response rate was 99.02%) in the study. Adolescents boys and girls were kept in different rooms to fill out the questionnaire. Proper instructions were provided to each respondent about how to fill-up the form. Female volunteers [after three-day training about data collection] were recruited for helping female respondents. Ethical considerations were maintained following the ethical guideline for research (Nepal Health Research Council [NHRC], 2011).

Statistical Analysis

Collected data were entered and analyzed using SPSS version 24 for Window 10. Five percent of the total questionnaire was rechecked for consistency before entry. Data analysis was carried out in three phases. In univariate analysis, column percentage was calculated for each category; whilst in bivariate analysis, the association of independent variables with the dependent variable was determined by cross-tabulation using a chi-square test. For multivariate analysis, the net effects of predictors were examined through binominal regression analysis at 95 percent confidence level.

Variables Considered

Sex, age, grades, type of school, religion, living arrangement, father and mother's education and occupation were the background characteristics of respondents. They were considered as the independent variables. These were further re-categorized into two or three categories for bivariate and multivariate analysis. The risk behaviours such as alcohol consumption, masturbation practice, watching pornography, having boy/girlfriend, and having dating with boy/girl friend were also considered as the independent variables. These variables were also measured into the categorical scales with two or three attributes. The dependent variable: experience of 'pre-marital vaginal sex' was categorized into the three attributes naming them 'yes', 'no' and 'no response' for chi-square test but 'no' and 'no response' were merged and made a single category into the 'otherwise' to analyze binominal analysis. Thus, the dependent variable for binominal analysis was categorized into two attributes: 'yes' and 'otherwise'.

Results

Socio-demographic and Economic Characteristics

Almost three-fifths (58.9%) of adolescents were from institutional schools. The mean age was 16.67 years (SD 1.33). Grade 11-12 students (57%) were more in numbers. An overwhelming proportion

of adolescents were *Hindu* (72.7%) followed by *Buddhist* and *Christian*. Nine in ten adolescents lived with their parents. Fifty percent of respondents' fathers completed school education, whilst more than fifty (54.9%) percent of mothers had no formal education. Nearly one-third (32.5%) of fathers were involved in business and self-employment followed by job/service and agricultural works, whilst two-third of adolescents' mothers were housewives (Table 1).

Table 1: Background characteristics of respondents

| Background characteristics | Percent | Number |
|--|---------|--------|
| <i>Type of school (n=609)</i> | | |
| Community | 41.1 | 250 |
| Institutional | 58.9 | 359 |
| <i>Sex (n=609)</i> | | |
| Boys | 50.1 | 305 |
| Girls | 49.9 | 304 |
| <i>Age (n=609), Mean = 16.76±1.3</i> | | |
| Below 18 (Child adolescents) | 67.5 | 411 |
| 18 and above (Adult adolescents) | 32.5 | 198 |
| <i>Grades (n=609)</i> | | |
| 9-10 | 43.0 | 262 |
| 11-12 | 57.0 | 347 |
| <i>Religion (n=609)</i> | | |
| Hindu | 72.7 | 443 |
| Buddhist | 21.3 | 130 |
| Christian | 3.3 | 20 |
| Others (<i>Kirat and Islam</i>) | 2.7 | 16 |
| <i>Living arrangement with (n=604)</i> | | |
| Parents | 89.9 | 543 |
| Other than parents | 10.1 | 61 |
| <i>Father's education (n=606)</i> | | |
| No formal education | 36.0 | 218 |
| School education | 51.5 | 312 |
| Higher education | 12.5 | 76 |
| <i>Mother's education (n=599)</i> | | |
| No formal education | 54.9 | 329 |
| School education | 39.9 | 239 |
| Higher education | 5.2 | 31 |
| <i>Father's occupation (n=573)</i> | | |
| Service | 26.0 | 149 |
| Business/self-employment | 32.5 | 186 |
| Foreign employment | 17.6 | 101 |
| Agriculture and other | 23.9 | 137 |
| <i>Mother's occupation (n=594)</i> | | |
| Housewife | 66.3 | 394 |
| Other than housewife | 33.7 | 200 |

Prevalence of PSBs

Of the total, more than fifty percent (52.4%) adolescents ever watched pornography, of whom nearly fifty percent watched it only 2-3 times in a month, whilst 7.6 percent did so 2-3 times in a week (Table 2). Two-third of adolescents did not experience sexual fantasy and romance, however, one in four (24.6%) had an experience of hugging followed by kissing, touching sensitive bodily parts and foreplay with sexual organs. A lower percentage (4.9%) had also been involved in sexting too. Similarly, 13.5 percent of adolescents ever experienced vaginal sexual intercourse before the survey conduction. The mean age for the sexual debut was 16. More than half (52.4%) did not use condoms at their first sexual intercourse. Among the students who had ever experience sexual intercourse, more than two-thirds (69.5%) of them experienced sexual intercourse since last year before the survey conduction, and more than half (54.9%) had had multiple sex partners (Table 2).

Table 2: Nature of premarital sexual Responses activities experienced Premarital sexual activities

| | | Percent | Number |
|---|------------------------------------|---------|--------|
| Watching pornography | Yes | 52.4 | 303 |
| | No | 47.6 | 275 |
| Frequency of watching pornography | Occasionally (2-3 times in a week) | 7.6 | 23 |
| | Sometimes (2-3 times in a month) | 48.5 | 147 |
| | Rarely (2-3 times in a year) | 43.9 | 133 |
| Sexual fantasy and romance ^a | Kissing | 20.9 | 120 |
| | Hugging | 24.6 | 141 |
| | Touching sensitive organs | 8.6 | 49 |
| | Foreplay with sex organs | 5.8 | 33 |
| | Sexting | 4.9 | 28 |
| | Not experienced | 65.6 | 376 |
| Ever had sexual intercourse | Yes | 13.5 | 82 |
| | No | 81.8 | 498 |
| | No response | 4.8 | 29 |
| Age for sexual debut (year) | Mean age=16±1.6, Min=10 and Max 19 | | |
| Using condoms | Yes | 52.4 | 43 |
| | No | 47.6 | 39 |
| Sexual intercourse since last year | Yes | 69.5 | 57 |
| | No | 30.5 | 25 |
| Having two and multiple sexual partners | Yes | 54.9 | 45 |
| | No | 45.1 | 37 |

Note: ^amultiple responses

Association with Premarital Sexual Intercourse

The bivariate analysis shows that the respondents' school's type, grade, sex, age, living arrangements, mother's occupation, alcohol consumption by respondents, masturbation practice, watching pornography, dating with boy/girlfriend had a significant association with premarital vaginal

sex (Table 3). Further, it was found that a significantly higher percentage of adolescents from institutional schools (14.2 %), grade 11-12 (19.9 %), boy (25.9 %), adult adolescents (24.7 %), living with other than parents (26.2%), alcohol consumers (32.6 %) engaged in premarital sexual relationships compared with their counterparts. Similarly, a significantly increased number of adolescents who had a masturbation practice (33.5 %), ever watched pornography (26.1%), having boy/girlfriend (25.8 %), having a dating with boy/girlfriend (30.3%) were also engaged in vaginal sex compared to their counterparts (Table 3).

Table 3: Association between characteristics of respondents and premarital sex

| Background characteristics | Category | Premarital sex | | | N Total |
|--|--------------------------|----------------|--------|-----------------|------------|
| | | Yes (%) | No (%) | No response (%) | |
| Type of school * | Community | 12.4 | 85.6 | 2.0 | 250 |
| | Institutional | 14.2 | 79.1 | 6.7 | 359 |
| Grades*** | 9-10 | 5.0 | 90.1 | 5.0 | 262 |
| | 11-12 | 19.9 | 75.5 | 4.6 | 347 |
| Sex*** | Boys | 25.9 | 70.5 | 3.6 | 305 |
| | Girls | 1.0 | 93.1 | 5.9 | 304 |
| Age*** | Below 18 | 8.0 | 87.8 | 4.2 | 411 |
| | 18 and above | 24.7 | 69.2 | 6.1 | 198 |
| Religion | Hindu | 13.8 | 81.7 | 4.5 | 443 |
| | Non-Hindu | 12.7 | 81.9 | 5.4 | 166 |
| Living arrangement with** | Parents | 12.0 | 83.1 | 5.0 | 543 |
| | Other than parents | 26.2 | 70.5 | 3.3 | 61 |
| Father's education | No formal edu. | 13.8 | 81.2 | 5.0 | 218 |
| | School education | 13.8 | 81.4 | 4.8 | 312 |
| | Higher education | 11.8 | 84.2 | 3.9 | 76 |
| Mother's education | No formal edu. | 14.9 | 81.5 | 3.6 | 329 |
| | School education | 12.1 | 81.6 | 6.3 | 239 |
| | Higher education | 9.7 | 87.1 | 3.2 | 31 |
| Mother's occupation* | Housewife | 10.9 | 84.8 | 4.3 | 394 |
| | Other than housewife | 18.5 | 76.0 | 5.5 | 200 |
| Father's occupation | Service | 12.8 | 84.6 | 2.7 | 149 |
| | Business/self-employment | 14.0 | 81.7 | 4.3 | 186 |
| | Foreign employment | 14.9 | 76.2 | 8.9 | 101 |
| | Agriculture/ other | 12.4 | 83.9 | 3.6 | 137 |
| Alcohol consumption behaviour of respondents *** | Yes | 32.6 | 62.9 | 4.5 | 89 |
| | No | 10.2 | 85.2 | 4.7 | 512 |
| Masturbation practice*** | Yes | 33.5 | 64.8 | 1.7 | 179 |
| | No | 5.8 | 88.3 | 5.8 | 223 |
| | Do not know | 4.3 | 89.4 | 6.3 | 207 |
| Watching pornography*** | Yes | 26.1 | 71.9 | 2.0 | 303 |
| | No | 1.1 | 96.4 | 2.5 | 275 |
| Having boy/girlfriend*** | Yes | 25.8 | 71.1 | 3.1 | 225 |
| | No | 6.5 | 89.3 | 4.2 | 354 |
| Dating with boy/girlfriend *** | Yes | 30.3 | 67.2 | 2.6 | 195 |

| Background characteristics | Category | Premarital sex | | | N Total |
|--|--------------------------|----------------|--------|-----------------|------------|
| | | Yes (%) | No (%) | No response (%) | |
| Type of school * | Community | 12.4 | 85.6 | 2.0 | 250 |
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| | No | 6.5 | 89.3 | 4.2 | 354 |
| Dating with boy/girlfriend *** | Yes | 30.3 | 67.2 | 2.6 | 195 |
| | No | 6.2 | 89.5 | 4.3 | 371 |

Note: chi-square test significant at * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Likelihood of Premarital Sexual Intercourse

Multivariate regression analysis shows that sex, grade, mother's occupation, alcohol consumption behaviour, and watching pornography remained the significant predictors for premarital sex among the high school adolescents. However, the sex of respondents remained the strongest predictor amongst others. After controlling other confounders, male respondents were about 13 times more

likely to have premarital vaginal sex than those of female adolescents. Similarly, students who studied in grades 11-12 were five times more likely to have premarital sex than 9-10 graders. Students, whose mothers were involved in service, business, daily wage works, foreign employment and agriculture, were 2.5 times more likely to experience premarital sex than those whose mothers were housewives only. Similarly, students who were alcohol consumers and exposed to ever watched pornography were 2.4 times and 5.7 times more likely to have premarital sex than those of their counterparts respectively.

Table 4: *Multivariate analysis of respondents' characters and experience of premarital sex*

| Predictors | Adjusted OR | 95% CI | |
|---|-------------|--------|--------|
| | | Lower | Upper |
| <i>Sex</i> | | | |
| Girls (Ref) | 1 | | |
| Boys | 12.8*** | 3.553 | 46.224 |
| <i>Type of school</i> | | | |
| Community (Ref) | 1 | | |
| Institutional | 0.87 | 0.453 | 1.679 |
| <i>Grade</i> | | | |
| 9-10 (Ref) | 1 | | |
| 11-12 | 5.1** | 1.702 | 15.294 |
| <i>Age</i> | | | |
| Child adolescents [Below 18] (Ref) | 1 | | |
| Adult adolescents [18 and above] | 0.79 | 0.260 | 2.427 |
| <i>Living arrangement with</i> | | | |
| Parents (Ref) | 1 | | |
| Other than parents | 1.6 | 0.638 | 3.918 |
| <i>Mother's occupation</i> | | | |
| Housewife (Ref) | 1 | | |
| Other than housewife | 2.5** | 1.266 | 4.962 |
| <i>Alcohol consumption by respondents</i> | | | |
| No (Ref) | 1 | | |
| Yes | 2.4* | 1.152 | 5.001 |
| <i>Masturbation practice</i> | | | |
| No (Ref) | 1 | | |
| Yes | 2.07 | 0.889 | 4.829 |
| Do not know | 1.36 | 0.442 | 4.164 |
| <i>Watching pornography(ever)</i> | | | |
| No (Ref) | 1 | | |
| Yes | 5.7* | 1.530 | 21.537 |
| <i>Having boy/girlfriend</i> | | | |
| No (Ref) | 1 | | |
| Yes | 2.077 | 0.805 | 5.358 |
| <i>Dating with boy/girlfriend</i> | | | |
| No (Ref) | 1 | | |
| Yes | 2.544 | 0.981 | 6.596 |

Note: significant at * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Discussion

This study attempts to explore the prevalence of PSBs among the urban high school adolescents in Kathmandu city of Nepal. The findings of this study reveal that more than fifty percent (52.4%) of high school adolescents watched pornography, and 7.6 percent did so regularly. Results indicate that watching pornography has enormously increased among the urban youths of Nepal. This result is comparable with the findings revealed by a study conducted in Kathmandu valley among adolescent girls at school (Maharjan et al., 2018). Evidence indicates that increased access to social media is significantly associated with watching pornography and other premarital sexual behaviours of youths (Landry, Turner, Vyas, & Wood, 2017). Similarly, sexual fantasy and romance were not uncommon among the study adolescents, where one in four was involved in hugging, followed by kissing (20.9 %), body rubbing (8.6 %), placing the hands on sexual organs (5.8 %) and sexting (4.9 %). This prevalence was significantly higher among adolescent boys. These findings are comparable with a study conducted among the college male students in Kathmandu, where 57 percent of respondents had experienced kissing, while 60 percent placed their hands on girls' breasts, followed by 35 percent put their hands on girls' sexual organs (Adhikari & Tamang, 2009). The prevalence rate of sexual fantasy and romance seems higher than our study. It may be due to conducting the study among only male college students. Moreover, evidence shows that the higher the age, the higher the chance of experiencing sexual activities among unmarried people (Adhikari & Tamang, 2009; Ministry of Health Nepal et al., 2017). These pre-sexual activities among the adolescents may increase the likelihood of unprotected sexual intercourse, which further may result undesirable sexual outcomes like urinary tract infection (UTI), teenage pregnancy, induced abortion and its associated complications (Lee, Chen, Lee, & Kaur, 2006; Shrestha, 2019).

This study found that 13.5 percent of pupils (boy 25.9 % vs. girl 1%) experienced premarital sexual intercourse, where the median age for the sexual debut was 16 years. Further, the study also revealed that 47.6 percent of respondents who had ever sex did not use a condom at the time of first sexual intercourse, followed by having multiple sex partners (45 %) and more than two-thirds (69.5 %) had also experienced sexual intercourse since last year. Multivariate logistic regression shows that prevalence of premarital sex was significantly higher among the male students (aOR=12.8, $p<0.001$, CI= 3.553-46.224), 11-12 graders (aOR=5.1, $p<0.01$, CI= 1.702-15.294), students whose mothers were non-house wife (aOR=2.5, $p<0.01$, CI= 1.266-4.962), alcohol consumers (aOR=2.4, $p<0.05$, CI= 1.152-5.001), and pornography expositors (aOR=5.7, $p<0.05$, CI= 1.530-21.537).

The findings of our study are corroborated with many other studies conducted within and beyond the study setting. The Global School-Based Student Health Survey (GSHS) conducted in Nepal with the support of several agencies reveal that 20.8 percent adolescent students (male 22.6%, female 18.3%) ever had sexual intercourse in their life (Aryal, 2017). Similarly, Khanal (2012) carried out a cross-sectional study among the higher secondary students in Kathmandu city, which demonstrated that 18 percent of students (boys= 30.1% & girls 4.7%) with 16 years of median age experienced pre-marital sexual intercourse, followed by 46.8 percent

unsafe sexual behaviour like not using a condom at the time of sexual contact and having multiple sex partners. A similar study conducted in Pokhara also revealed that nearly one in four (24.5%) study respondents have had premarital sex along with unsafe sexual practices like having multiple sex partners (Adhikari et al., 2018). Beyond Nepal, a study conducted among Malaysian school adolescents aged 12-19 years found that 5.4 percent of respondents experienced premarital sexual intercourse. The proportion among male students who had had sex was higher (8.3 percent) compared with females (2.9 percent). The mean age at first sexual intercourse was 15 years (Lee et al., 2006).

A study from Indonesia shows that knowledge about reproductive health was significantly associated with premarital sexual relationships (Nasution, 2012). Another study from Tanzania shows that the adolescents, who were out of school, were largely experienced with sexual relationships (Nnko, Chiduo, Mwaluko, & Urassa, 2001). PSB is associated with extramarital sexual behaviour that may lead to family disturbance including divorced/separated life, chances of having various sexually transmitted infections (White, Cleland, & Carae, 2000). Simultaneously, another study asserts that the religious faith of the adolescents was also associated with their sexual behaviours (Hayward, 2019).

Comparing these results with our study, Nepalese high school adolescents have a higher prevalence of premarital sexual contact. There could be some reasons like the timeline between the studies and the area coverage. But, a study conducted among the Nigerian urban school adolescents aged 10-19 years, found a significant proportion of adolescents (47 %) have had sex. Of those who have ever had sex, nearly two-thirds of them (63.2 %) involved in sex more than four times in the last six months, whilst near to fifty percent of them had multiple sex partners at a time (Nwankwo & Nwake, 2009). These results do not necessarily corroborate with our study since the socio-political condition of Nigeria and Nepal is unlike.

Limitations

Due to resource constraints, the study has some potential limitations that may influence the results and representativeness. First, the study was conducted in the Kathmandu Metropolitan city which may not represent the country as a whole. Second, we used convenient sampling in school selection which may have the less predictive capacity. Third, we used a self-administrated questionnaire to collect the data in the first attempt. It may be uneasy for those who were shy or hesitated to respond in the case of so-called confidential issues of sex and sexual behaviour, so, much information might be missed which are subjected to recall bias, peer influence, and some other social desirability bias. Fourth, we collected quantitative information which may limit the information that the respondents want to express. That may limit the field-based evidence power. Finally, we collected data from a particular time from selected respondents so the validity and reliability of the responses depended upon them who participated in the study. So the result of the study may or may not fit for all time. However, we did our best in every angle to make the results meaningful. Mixed-method research can be conducted in future for the more powerful information containing large samples with multiple sources of information.

Conclusion

This study provides evidence-based finding on the prevalence of PSBs among the high school adolescents of Kathmandu metropolis. The study concludes that an overwhelming number of in-school adolescents involved in sexual fantasy activities like watching pornography, kissing, hugging, body rubbing, touching sexual organs, and sexting. The study also concludes that a notable number of adolescents involved in premarital vaginal sex, used no condom during intercourse, consumed alcohol before sexual intercourse, and had multiple sex partners. This prevalence was more common among the boy students than those of girls. This study suggests school-based comprehensive sexuality education to minimize the risky sexual behaviour and promote the safer sexual activities among the secondary level school adolescents.

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Author's contribution

YRU collected, entered, and analyzed the data along with manuscript development and DA edited the manuscript with generous inputs. Both authors have read and approved the final manuscript and agreed to submit for publication.

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Intimate Partner Violence Against Women in Kohalpur Municipality of Banke District, Nepal

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Abstract

Intimate partner violence (IPV) is abuse that occurs in a close relationship. The main purpose of this study is to determine the forms and risk factors associated with violence as well as the effect of demographic elements on IPV. The population of this study was all the women of the reproductive age group in Ward No. 7 of Kohalpur Municipality Banke district, Nepal. For this study 151 married women aged 15-49 years were selected from Kohalpur municipality by using convenience sampling method. Data were collected through the interview schedule and attitude scale. The researcher has found that 33.11 percent respondents strongly agreed that they were afraid of their husbands and 53.64 percent respondents strongly agreed that their husbands physical forced to have sex. Likewise, 17.21 percent respondents pointed IPV is due to lack of education and 55.62 percent due to gambling and drinking behaviors of their husbands. Similarly, 6.62 percent respondents pointed out that it is due to fewer dowry system. IPV, a serious problem, has long-lasting effects on individuals, families and society also. So this has to be prevented. To reduce the proportion of IPV, healthy, respectful, understanding and an appropriate environment has to be promoted instead of violent relationships.

Keywords: Intimate partner violence, psychological violence, sexual violence, health, consequences, spouse violence

Introduction

Intimate partner violence (IPV) is abuse or aggression that occurs in a close relationship. It is used to describe physical violence, sexual violence, stalking, and psychological aggression by a current or former intimate partner, to include current or former spouses, boyfriends/girlfriends, dating partners, or sexual partners (Breiding, Basile, Smith, Black, & Mahendra, 2015). IPV can take a number of forms, including physical, psychological and sexual violence. When a person hurts or tries to hurt a partner by hitting, kicking, or using another type of physical force, it is termed as physical violence. Sexual violence is forcing or attempting to force a partner to take part in a sex act, sexual touching, or a non-physical sexual event (e.g., sexing) when the partner does not or cannot consent (Kapia, et al., 2017). Psychological violence is the use of verbal and non-verbal communication with the intent to harm another person mentally, emotionally or to exert control over another person (Dutton, Kaltman, Goodman, Weinfurt, & Vankos, 2005). The use of alcohol, education level, personality disorders, acceptance of violence, past history of abusing partners, male dominance over the family, economic stress, a man having multiple partners, the disparity in educational attainment, poverty, weak legal sanctions against IPV within marriage, lack of women's civil rights and broad social acceptance of violence are risk factors of IPV (Antai, 2011).

Globally, 35 percent of women had experienced either physical and/or sexual IPV or non-partner sexual violence. Nearly one third (30%) of all women who have been in a relationship, had experienced physical and/or sexual violence by their intimate partner. As many as 38 percent of all murders of women are committed by intimate partners (WHO, London School of Hygiene and Tropical Medicine , & South African Medical Research Council, 2013).

In Nepal, 14 percent of women have experienced one or more forms of spousal violence in the past 12 months. The most common type of spousal violence women experience is physical violence (23%), followed by emotional violence (12%) and sexual violence (7%). Almost one-third of women in the Terai (32%) report experiencing spousal physical, sexual, or emotional violence, compared with less than one-fifth of women in hill (20%) and mountain (19%) zones. Province wise, women in Province 2 (37%), followed by Province 5 (29%) and Province 3 (26%) are most likely to experience spousal physical, sexual, or emotional violence, and those in Province 4 (16%) (Ministry of Health, New ERA, & ICF, 2017).

IPV affects individuals, family and community; it often results in physical and emotional injuries in addition to that may result in death. The prevalence of IPV against women is not well documented. The great concern is that these women are not aware of men's abusive tendencies. This problem emerged as a concern from reviewing such literature. It is found that the abuse of women is associated with the value, traditional belief and culture. Not all women know where to go when they face violence and abuse. This is exacerbated by the fact that IPV occurs in a domestic relationship and may be understating in nature. When the matter becomes worse victims become helpless this may arise due to lack of facilities such as health service, guidance and access of counseling centers. No research has been conducted on such issues in Banke district. Hence, it is necessary to carry out the research entitled "IPV Against Women". This study focuses on determining forms and risk factors associated with violence by intimate partners as well as the effects of demographic elements on violence. The researcher has conducted the research in Kohalpur Municipality of Banke district, Nepal.

Methods

This study was based on a cross-sectional research design. There is one sub-metropolitan city, one municipality and six rural municipalities in Banke district. Among them, Kohalpur Municipality was selected as the study area. The population of this study was all the women of the reproductive age group of Kohalpur Municipality, Ward No. 7. There are altogether 736 married women belonging to the age group 15 to 49 years in Ward No. 7 of Kohalpur Municipality, among them, 151 married women in the age group 15 to 49 were selected by the Convenience Sampling Method. The sample size was based on a sample size formula for 95% confidence, margin error 5% and an estimate of population proportion 14%, this proportion was the percentage of women experiencing any type of violence in their life within a year. The sample was calculated by using the following Cochran's formula.

$$\text{Preliminary sample size } (n_0) = \left(\frac{Z_{\alpha}}{E} \right) \times P \times Q = 185.011$$

$$\text{And final sample size } (n) = \frac{n_0}{1 + \frac{n_0}{N}} = 149.85$$

Necessary data were collected through the interview schedule and attitude scale. An interview schedule was used to collect general information and risk factors. An attitude scale was used to collect information associated with forms of IPV. To meet the objectives of the study, the researcher prepared an interview schedule and attitude scale. Before making final tools, the prepared tools were pre-tested among 16 married women (age 15-49 years old) of Kohalpur Municipality and it was analyzed. Then it was improved as per the need. After preparing the final tools, the tools were translated into the Nepali language for the convenience of the interviewees. The researcher got permission to collect data from the municipality, then visited the area according to the purpose of the study for consulting key respondents. Then the researcher filled up the Interview Schedule and attitude scale by conducting door to door visits. Before starting the interview, the researcher ensured rapport relationship by informal sharing with key respondents and an explanation of the purpose of the study.

The collected data were entered into the computer and analyzed subsequently using SPSS version 20. The descriptive statistics that were used to analyze data were frequency and percentage analysis, then important findings of the study were presented. The bivariate data analysis method was also applied using the chi-square test.

The ethical standards of research were maintained. Respondents were asked for verbal consent before data collection started. They were made aware of the purpose of the study. They were assured that the data collected from them will be used purely for research purposes and will be kept completely confidential, use and protection of information, respects their culture and customs would be maintained and that they were free not to respond or to discontinue the interview at any time.

Results

Psychological Violence

Psychological violence is a form of abuse, it includes verbal abuse, constantly criticizing, threats to beat, saying or doing something to make the other person embarrassed.

Table 1. Description of Psychological Violence of Respondents

| Variable | Agree strongly | | Agree somewhat | | Neither disagree nor agree | | Disagree nor somewhat | | Disagree strongly | |
|---|----------------|-------|----------------|-------|----------------------------|-------|-----------------------|-------|-------------------|-------|
| | no. | % | no. | % | no. | % | no. | % | No | % |
| Feeling unsafe in their own home | 63 | 41.72 | 41 | 27.15 | 14 | 9.27 | 16 | 10.59 | 17 | 11.25 |
| Feeling ashamed of things | 65 | 43.05 | 36 | 23.84 | 17 | 11.25 | 17 | 11.25 | 16 | 10.59 |
| Afraid of husband | 50 | 33.11 | 48 | 31.78 | 20 | 13.24 | 16 | 10.59 | 17 | 11.25 |
| Feeling of Keeping prisoner | 48 | 31.78 | 46 | 30.46 | 22 | 14.56 | 17 | 11.25 | 18 | 11.92 |
| Feeling of no power , no protection over life | 53 | 35.09 | 34 | 22.51 | 27 | 27.88 | 18 | 11.92 | 19 | 12.58 |
| Hide the truth | 57 | 37.74 | 32 | 21.19 | 20 | 13.24 | 23 | 15.23 | 19 | 12.58 |
| Feeling of owned and controlled | 56 | 37.08 | 30 | 19.86 | 19 | 12.58 | 26 | 17.21 | 20 | 13.24 |
| Had terrifying action | 55 | 36.42 | 29 | 19.20 | 18 | 11.92 | 16 | 10.59 | 33 | 21.84 |

In the above table, 41.72 percent respondents strongly agreed that they were feeling unsafe in their own homes and 9.27 percent respondents neither disagreed nor agreed with that statement. While 33.11 percent respondents strongly agreed on afraid of husband, 31.78 percent respondents strongly agreed that they feel like staying in prison; 36.42 percent felt some terrifying action from their intimate partners. The reason behind such data in table I may be because low educational status of women, economic stress and male dominance in the family.

To find out the association between different demographic variables and psychological violence experienced by women from their intimate partners, chi-square test is applied. The following table shows the summary findings of this test.

Table 2. Association between Women's demographic Variables and Psychological violence on them

| Psychological violence | Age | | Education level | | Religion | | Ethnicity | | Occupation | |
|--|----------|--------|-----------------|--------|----------|--------|-----------|--------|------------|--------|
| | χ^2 | Sig. | χ^2 | Sig. | χ^2 | Sig. | χ^2 | Sig. | χ^2 | Sig. |
| Feeling unsafe in their own home | 18.22 | 0.792 | 35.25 | 0.019* | 14.35 | 0.279 | 17.53 | 0.352 | 33.4 | 0.221 |
| Feeling ashamed of things | 25.94 | 0.356 | 39.23 | 0.006* | 10.79 | 0.547 | 19.52 | 0.243 | 34.31 | 0.191 |
| Afraid of husband | 29.18 | 0.214 | 50.68 | 0* | 15.66 | 0.207 | 23.23 | 0.108 | 35 | 0.17 |
| Feeling of Keeping prisoner | 38.5 | 0.031* | 50.5 | 0* | 26.05 | 0.11 | 30.91 | 0.014* | 41.85 | 0.045* |
| Feeling of no power protection over life | 32.29 | 0.12 | 48.98 | 0* | 31.77 | 0.002* | 31.75 | 0.011* | 41.57 | 0.048* |
| Hide the truth | 32.16 | 0.123 | 24.71 | 0.213 | 31.22 | 0.002* | 54.24 | 0.00* | 33.4 | 0.221 |
| Feeling of owned and controlled | 29.55 | 0.2 | 36.9 | 0.012* | 26.89 | 0.008* | 31.45 | 0.012* | 36.21 | 0.137 |
| Had terrifying action | 43.45 | 0.009* | 25.97 | 0.167 | 9.11 | 0.693 | 22.68 | 0.122 | 37.95 | 0.099 |

*significant at 5%

Among eight factors of psychological violence on women two factors, 'Hide the truth', and 'Had terrifying action' are found not associated with educational level (p-value > 5%) and other remaining factors are found significantly associated (p-value < 5%). For a similar test of association between psychological violence factors and religion, ethnicity is found not associated which shows that there is a similar pattern of psychological violence among different religious and ethnic women.

Physical Violence

Physical abuse is the infliction of pain on a person.

Table 3. Descriptions of Physical Violence

| Variable | Agree strongly | | Agree somewhat | | Neither disagree nor agree | | Disagree nor somewhat | | Disagree strongly | |
|--------------------------------------|----------------|-------|----------------|-------|----------------------------|-------|-----------------------|-------|-------------------|-------|
| | no. | % | no. | % | no. | % | no. | % | no. | % |
| Pushes and shoves | 37 | 24.50 | 40 | 26.49 | 18 | 11.92 | 19 | 12.58 | 37 | 24.50 |
| Hits and punches arms and body | 25 | 16.55 | 40 | 26.49 | 19 | 12.58 | 25 | 16.55 | 42 | 27.81 |
| Threatens with a weapon | 22 | 14.56 | 41 | 27.15 | 19 | 12.58 | 26 | 17.2 | 43 | 28.47 |
| Beats when drinks | 20 | 13.24 | 40 | 26.49 | 22 | 14.56 | 22 | 14.56 | 47 | 31.12 |
| Hits, punches or kicks face and head | 33 | 21.85 | 38 | 25.16 | 14 | 9.27 | 24 | 15.89 | 41 | 27.15 |
| Tries to choke, strangle | 24 | 15.89 | 43 | 28.47 | 21 | 13.90 | 19 | 12.58 | 43 | 28.47 |
| Knocks down and kicks or stomps | 18 | 11.92 | 43 | 28.47 | 18 | 11.92 | 19 | 12.58 | 53 | 35.09 |
| Throws dangerous objects | 16 | 10.59 | 36 | 23.84 | 24 | 15.89 | 21 | 13.90 | 54 | 35.76 |

The above table clearly shows that 24.50 percent respondents reported being pushed and shoved by their husband, 14.56 percent respondents noticed of being threatened with a weapon by their husband, 16.55 percent respondents reported of having hit and punched arms and body, 21.85% percent respondents noticed that their husband punched or kicked face and head, 15.89 percent of the respondents reported that their husbands try to choke them. Thus it is seen that majority of the respondents experienced physical violence by their husbands. The use of alcohol, drug, personality disorders, acceptance of violence and history of abusing partners are some of its main reasons.

The following table shows test statistics and p-value to find out the association between respondent's demographic profile and violence experienced by them from their ultimate partner.

Table 4. Association between Physical Violence and Demographic Profile of the Respondents

| Physical Violence | Age | | Education level | | Occupation | | Ethnicity | | Religion | |
|--------------------------------------|----------|--------|-----------------|-------|------------|-------|-----------|--------|----------|-------|
| | χ^2 | Sig. | χ^2 | Sig. | χ^2 | Sig. | χ^2 | Sig. | χ^2 | Sig. |
| Pushes and shoves | 23.84 | 0.471 | 18.3 | 0.565 | 20.73 | 0.837 | 16.15 | 0.443 | 13.45 | 0.337 |
| Hits and punches arms and body | 31.89 | 0.13 | 22.04 | 0.339 | 28.52 | 0.437 | 22.35 | 0.132 | 9.38 | 0.67 |
| Threatens with a weapon | 22.24 | 0.565 | 18.7 | 0.542 | 17.23 | 0.944 | 19.89 | 0.225 | 14.89 | 0.247 |
| Beats when drinks | 28.49 | 0.24 | 20.1 | 0.449 | 25.8 | 0.584 | 9.92 | 0.871 | 15.21 | 0.23 |
| Hits, punches or kicks face and head | 35.13 | 0.066 | 12.9 | 0.883 | 31.71 | 0.286 | 14.45 | 0.566 | 9.58 | 0.652 |
| Tries to choke, strangle | 33.35 | 0.097 | 25.4 | 0.186 | 26.67 | 0.536 | 28.46 | 0.028* | 12.52 | 0.405 |
| Knocks down and kicks or stomps | 44.38 | 0.044* | 35.9 | 0.07 | 39.55 | 0.274 | 19.68 | 0.478 | 18.81 | 0.222 |
| Throws dangerous objects | 40.01 | 0.021* | 29.2 | 0.084 | 23.06 | 0.73 | 18.14 | 0.126 | 15.99 | 0.192 |

*significant at 5%

In the above table, physical violence has been described by different eight factors. The P-value for 'Knocks down and kicks or stomps' and 'Throws dangerous objects' with Age is found less than 5%, so there is a significant association between these variables; but the p-value for remaining other factors with Age are more than 5%, thus there is no association between other factors representing physical violence and Age of respondents. Also, the p-value for the education level of respondents, occupation, and religion with all the factors of physical violence is found more than 5%, so there is no association between physical violence experienced by respondents and their education, occupation and religious background. The variables of Ethnicity and Tries to choke are found associated because the p-value is less than 5%. But, ethnicity and other factors representing physical violence are not associated (p-value > 5%). This data makes us clear that most of the forms of physical violence are independent of religion, educational status and ethnicity in the sample population, it may occur in any sub-sample uniformly.

Sexual Violence

Sexual violence is a serious infringement upon a woman and one which can result in significant physical and psychological trauma to the victim.

Table 5. Descriptions of Sexual Violence of the Respondents

| Variable | Agree strongly | | Agree somewhat | | Neither disagree nor agree | | Disagree somewhat | | Disagree strongly | |
|---------------------------------------|----------------|-------|----------------|-------|----------------------------|-------|-------------------|-------|-------------------|-------|
| | no. | % | no. | % | no. | % | no. | % | no. | % |
| Physically forces to have sex | 81 | 53.64 | 28 | 18.54 | 6 | 3.97 | 9 | 5.96 | 27 | 17.88 |
| Sexually abused | 29 | 19.20 | 54 | 35.76 | 19 | 12.58 | 16 | 10.59 | 33 | 21.85 |
| Badly hurts while having sex | 20 | 13.24 | 42 | 27.81 | 35 | 23.17 | 17 | 11.25 | 37 | 24.50 |
| Partner injures my breast or genitals | 20 | 13.24 | 42 | 27.81 | 35 | 23.17 | 17 | 11.25 | 37 | 24.50 |

The above table shows that out of 151 respondents, 53.64 percent respondents noticed that they strongly agreed about their husband physically forced to have sex, 19.20 percent respondents strongly agreed that their husbands sexually abused them, 13.24 percent respondents strongly agreed that their husbands badly hurt them while having sex and 13.24 percent respondents strongly agreed that their husbands injured their breast or genitals. Thus the data clearly shows that women are experiencing sexual violence by their intimate partners. The main reason for experiencing such violence even from the intimate partner may be due to a lack of sex education resulting in sexual coercion.

The following table shows the summary findings for the test of association between demographic variables and sexual violence experienced by women from their husbands using χ^2 test.

Table 6. Association between Sexual Violence and Demographic Profile of the Respondents

| Sexual violence | Age | | Education level | | Occupation | | Ethnicity | | Religion | |
|---------------------------------------|----------|-------|-----------------|-------|------------|--------|-----------|--------|----------|--------|
| | χ^2 | Sig. | χ^2 | Sig. | χ^2 | Sig. | χ^2 | Sig. | χ^2 | Sig. |
| Physically forces to have sex | 18.3 | 0.788 | 22.85 | 0.296 | 41.44 | 0.049* | 25.3 | 0.065 | 26.92 | 0.008* |
| Sexually abused | 32.56 | 0.114 | 24.27 | 0.231 | 31.96 | 0.276 | 25.49 | 0.062 | 24.37 | 0.018* |
| Badly hurts while having sex | 29.43 | 0.204 | 31.35 | 0.051 | 39.44 | 0.074 | 31.96 | 0.010* | 25.09 | 0.014* |
| Partner injures my breast or genitals | 21.98 | 0.581 | 26.7 | 0.144 | 40.73 | 0.057 | 21.73 | 0.152 | 25.07 | 0.014* |

*significant at 5%

While testing the association between the demographic profile of the respondent and their experience of sexual violence, these variables are found associated (p -value < 5%). However, the association between all the factors of sexual violence are found not associated (p -value > 5%) with demographic variables other than religion. This makes us clear that sexual violence is independent of age, education level, occupation and ethnicity in the sample population, it may occur in any sub-sample uniformly.

Risk Factors of IPV

Nothing is possible without any cause and effect. Such as without any cause violence also cannot take place. So to the occurrence of violence, there should be some reasons for IPV. Respondents' perceptions of those reasons are mentioned below.

Table 7. Descriptions of the Risk Factors Associated with IPV

| Risk factors of IPV | Number of Responses | Percent |
|---|---------------------|---------|
| Less Education | 26 | 17.21 |
| Gambling and drinking behavior of the husband | 84 | 55.62 |
| Less dowry | 10 | 6.62 |
| Birth of daughter | 14 | 9.27 |
| Because of Co-wife | 13 | 8.60 |
| Substance abuse | 23 | 15.23 |

*Multiple responses

The above table presents that 17.21 percent of respondents pointed out less education as one of the reasons for IPV whereas most respondents (55.62 %) stated gambling and drinking behavior of husband as the other reason for IPV. Similarly, 6.62 percent of respondents pointed out less dowry, 9.27 percent of respondents pointed out the birth of a daughter, 8.60 percent of respondents pointed out Because of co-wife, and 15.23 percent of respondents pointed out Substance abuse. It shows that diverse reasons are responsible for the IPV. The roots of all causes are interlinked to the patriarchal society. The male chauvinist social system lacks women’s accessibility to every aspect of social life.

Discussion

The discussion has been made by dividing two areas of the study forms and risk factors of IPV against women.

Forms of IPV

The major findings of this study related to Psychological violence is that out of total 151 respondents, 41.72 percent respondents strongly agreed of Feeling unsafe in their own home. Likewise, 43.05 percent respondents strongly agreed with Feeling ashamed of things, and 35.09 percent respondents strongly agreed with Feeling of no power, no protection over life. Similarly, 33.11 percent respondents strongly agreed of Afraid of husband and 31.78 percent respondents feeling keeping prisoner. Moreover 36.42 percent had experienced Terrified action. Other studies explore that women reporting emotional violence were most likely to report that their husband insulted them or made them feel bad about themselves (9%) and 5 percent of women said that their husband threatened to hurt or harm them or someone close to them (Ministry of Health, New ERA, & ICF, 2017). Other similar study found that 15.8 percent respondents noticed that they were sometimes ever humiliated, 7.4 percent respondents noticed that threatened with harm and 21.2percent respondents noticed that they were sometimes insulted/ made feel bad (Yaya, Kunnuji, & Bishwajt, 2019). It is concluded that there is no similarity between these studies results. Some reasons may be level of education, cultural context, economic status of family and due to the different contexts of study, sample size, inclusion and missing data. So the report states different findings concerned with psychological violence.

The study results concerned with the forms of Physical violence show that 24.50 percent respondents reported being pushed and shoved by their husband, whereas 14.56 percent respondents were being threatened with a weapon by their husband. Similarly, 16.55 percent

respondents reported that their husbands hit and punched arms and body, and 21.85% percent respondents noticed that their husband punched or kicked on face and head. Moreover, 15.89 percent of the respondents reported that their husbands tried to choke them. Yaya, Kunnuji & Bishwajt (2019) Stated that 11.5 percent respondent noticed they sometimes faced pushed/ shook/ thrown something by their intimate partner, 29.5 percent respondents experienced slapping and 10.4 percent respondents noticed that their husbands made wound/ broke bones. Similar previous studies have addressed that 12 percent of women reported that they were being pushed, shaken, or having something thrown at them by their husband, 9 percent reported having their arms twisted or hair pulled and being kicked, dragged, or beaten up, and 8 percent have reported that their husband punched them with his fist or with something else that could hurt them. Four percent of women reported that their husbands tried to choke them or burn them on purpose (Ministry of Health, New ERA, & ICF, 2017). The above were concerned with different contexts, so the study report addresses different findings. The present study shows an increasing rate of physical violence. The main reasons which may be perceived are rising unemployment, conflict, inequality, right of property, value, belief and culture.

The result of the present study shows that 53.64 percent respondents strongly agreed about their husbands physically Forced to have sex, 19.20 percent respondents strongly agreed that their husbands sexually abused them, 13.24 percent respondents strongly agreed that their husbands Badly hurt and injures their breast or genitals while having sex. Yaya, Kunnuji & Bishwajt (2019) found that 6.7 percent respondents noticed their husbands Forced them into unwanted sex. Other research shows that 6 percent respondents reported that their husband used physical force to have sexual intercourse with them when they did not want to, 4 percent reported that their husband physically forced them to perform other sexual acts they did not want to, and 3 percent reported that their husband forced them with threats or in other ways to perform sexual acts they did not want to (Ministry of Health, New ERA, & ICF, 2017). It is concluded that different contextual studies showed different rates of sexual violence. Sexual violence which heavily depends on context, culture, environment and dynamics interplays varied factors.

Risk Factors associated with IPV

The study result addressed different risk factors that were associated with the IPV. As regards this, 17.21 percent respondents pointed out that the reasons for IPV is a lack of education, whereas most respondents (55.62%) stated that it is due to gambling and drinking behavior of their husband. Similarly, 6.62 percent respondents pointed out less dowry as the reason, 9.27 percent due to the birth of a daughter, 8.60 percent because of co-wife and 15.23 percent respondents pointed out substance abuse as a risk factor of IPV. The result of the chi-square test shows that out of eight forms of psychological violence, six forms are found significantly associated with the education level of respondents but two out of eight forms of psychological violence are found significantly associated with the occupation of the respondents. Also, two forms of physical violence 'Knockdown and kicks or stomps' and 'throws dangerous objects' are found associated with Age of respondents, similar to that ethnicity and 'Tries to choke' is

found associated while using the chi-square test of independence. Tiwari & Shrestha (2018) state that affair with other women and alcohol consumption habit was highly significant predictors for the IPV. Another study reveals that 19.04 percent respondents agreed upon the fact that the cause of female victimization is lack of education and 26.66 percent due to economic problems. Similarly, 6.66 percent respondents pointed out cultural belief, 21 percent respondents pointed out patriarchy society, 14.28 percent respondents pointed out the drinking behavior of husband, 4.76 percent respondents pointed out less dowry, 2.85 percent respondents suggested polygamy and last 4.76 percent respondents were found to have reported by the birth of a daughter (Sharma, 2017). Atteraya, Gnawali & Song (2014) addressed that female illiteracy, low economic status, violent family history, regarding family background, whether or not the husband was an alcoholic, the husband's level of education, and a higher number of children were the risk factors associated with the IPV. It is concluded that different contextual studies where were consulted addressed that the similar risk factors associated with the IPV. It shows that diverse reasons are responsible for the IPV. The roots of all causes are interlinked to patriarchy society. IPV affects all parts of society. So it is required to reduce. Use a public health approach that addresses risk and protective factors for IPV so as to prevent it as well.

Conclusion

IPV is the systematic, intentional use of physical, emotional and/or sexual abuse that one person in a domestic relationship exerts over their partner in order to maintain power and control. The result of this study shows that respondents are at risk of violence from their intimate partners. That 41.72 percent of the respondents felt they are unsafe in their own home, 33.11 percent respondents pointed out that they were afraid of their husband, and 24.50 percent respondents strongly agreed that their husband pushes and shoves them. Likewise, 53.64 percent respondents noticed that their husbands physically forced to have sex, 37.08 percent respondents noticed that their husbands forced to engage in sexual activities. The present study found that lack of education, gambling and drinking behavior of the husband, dowry, the birth of a daughter, the existence of a co-wife and substance abuse are major risk factors of IPV. Many forms of psychological and physical violence are found significantly associated with the husband's education level. This study shows that IPV is in high risk and a burning issue. IPV has the function of keeping women where they are i.e. within the house in a powerless position. Consequently, women became an instrument through which the social system reproduces itself and through which systemic inequality is maintained. This is not good, so women should be encouraged to take part in education, employment and political fields to achieve equal opportunity and reduce these constraints, and at the same time laws, rules, and regulations should be implemented effectively.

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Factors Associated with Early Marriage in Rural Mid-Western Nepal

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Abstract

Early (or child) marriage is a global public health issue influenced by a complex web of factors including socio-demographic conditions of the people. The present paper aims to examine factors associated with early marriage among the people in rural communities of Nepal. A cross-sectional end-line study was carried out among 155 married respondents selected through cluster cum convenience sampling from six clusters of two rural districts of Mid-western Nepal. The mean age at first marriage was 18.4 years (SD=3.83). Two-third of them had an early marriage and the proportion of early marriage was remarkably higher among women than men (77.8% vs. 42.6%). The prevalence of early marriage was the most common among those of women, age-group of 35-44 years, illiterate and basic literate ones, nuclear and small families, and *Janajatis*. Sex and educational status of the respondents had a statistically significant association with their marital age ($p < 0.05$) and were major factors associated with early marriage but other socio-demographic factors such as age, caste/ethnicity, family type, family size and source of income were not found directly associated with early marriage for the sample. Future research efforts should prioritize gender-transformative interventions to recognize and confront inequitable gender norms and actions.

Key Words - early marriage, associated factors, sex, education, rural communities

Introduction

Child marriage, though a criminal offense, has been practiced for generations in Nepal and is recognized globally as a major public health issue. Nepal has one of the highest rates of child marriages in the globe (Center for Reproductive Rights, 2016; UNICEF / UNFPA, 2017) ranked as the third-highest in South Asia (UNFPA, n. d.). The median age at first marriage among women aged 15 to 49 in Nepal is 17.9 years and 70.9% of women aged 25 to 49 are married by age 20 which is 59.2% in the age-group 20 to 24 (Ministry of Health Nepal, New ERA & ICF, 2017). There are variations in the definition of child marriage in the world (Mulenga, Mulenga, Bwalya, & Ngongola-Reinke, 2018) as the Criminal Code Act 2017 of Nepal has declared 20 years as a minimum age of marriage for both girls and boys (Bhandari, 2019; Human Rights Watch, 2016) though it is 18 years in the global context (UNICEF, 2007). So, in the context of Nepal, a marriage where one or both spouses are under age 20 is regarded as early (or child) marriage.

Child marriage is a global public health concern and a violation of international human rights (Groot, Kuunyem, & Palermo, 2018; UNFPA, 2012; Workineh, Kibretb, & Degu, 2015) that

affects millions across the world but girls in the developing countries like Nepal are the most vulnerable (Plan Nepal, Save the Children, & World Vision International Nepal [WVIN], 2012). Though Nepal has ratified many international documents to ban on child marriage and has passed laws forbidding child marriage (Plan Nepal, Save the Children, & WVIN, 2012), its eradication has become a distant dream due to a complex web of factors (Human Rights Watch, 2016; UNICEF / UNFPA, 2017; Wijayati, Soemanto, & Pamungkasari, 2017) such as the ineffective implementation of laws, low level of awareness (Plan Nepal, Save the Children, & WVIN, 2012) and weak economic condition (UNICEF / UNFPA, 2017). It has numerous consequences on the life of children especially girls resulting health complications (Birech, 2013; Delprato & Akyeamong, 2017; Grootet al., 2018; Plan Nepal, Save the Children, & WVIN, 2012), different sorts of violence (UNICEF / UNFPA, 2017), drop-out of school (Birech, 2013; Petroni, Steinhaus, Fenn, Stoebenau, & Gregowski, 2017; Plan Nepal, Save the Children, & WVIN, 2012), and so on.

The target of Sustainable Development Goals (SDGs) to eliminate all sorts of harmful practices regarding the child, early and forced marriage by 2030 (National Planning Commission, 2017; UNICEF, 2018) can only be met through meaningful investment in implementing government policies and programs (Rumble, Peterman, Irdiana, Triyana, & Minnick, 2018) that requires rigorous scientific data on prevalence and determinants of the child, early and forced marriages in different situations and most specifically in rural settings where child, early and forced marriage issues are the most prevalent (Ahonsi et al., 2019; Mulenga et al., 2018; UNICEF / UNFPA, 2017). The prevalence of child marriage is higher in the Terai region nearer to the border of India and Mid- and Far-Western regions of Nepal (Adhikari, 2018). Though the trend of child marriage is decreasing these days in Nepal (Adhikari, 2018) as compared to the rest of the world (Bhanji & Punjani, 2014; Mulenga et al., 2018; UNICEF, 2018), it is still higher in comparison to other countries in the world (Adhikari, 2018). This reflects the need for evidence-based interventions to address the complex issue of early marriage interwoven within a complex web of influencing factors.

This study is an attempt to examine the factors associated with early marriages in the marginalized communities of rural Mid-Western in Nepal. More specifically, the present paper aims to assess the association of social and demographic factors with child and early marriage of the people in the study area. The findings from this study will be a cornerstone in designing strategies and interventions to address marriage issues and reproductive health problems in rural settings.

Methods

A cross-sectional end-line study was carried out in six rural clusters of Bardiya and Dailekh districts in the Mid-western region of Nepal that were purposively selected by Combating Early/Forced Child Marriage Project of Aawaaj (A non-government organization). Cluster cum convenience sampling was used to select 180 households representing equally from all the six clusters (Table 1). For that purpose, each of the six clusters (i.e., wards) was further classified into sub-clusters (i. e., villages) and three from each sub-cluster was selected randomly which comprised of altogether 18 sub-clusters taking part in the study. From each of those 18 sub-

clusters, 10 households were selected conveniently. Among the 180 household-representatives, 155 were married, who were utilized for the purpose of the present study to identify factors associated with early marriage. The quantitative data collected through a semi-structured interview schedule were analyzed using SPSS version 20. Sample characteristics were described by univariate analysis and bivariate analysis used Chi-square to show the association between socio-demographic characteristics and marital age of the respondents.

Table 1: *Sampling Frame*

| Project Districts | Project Clusters | No of Sub-Clusters | No of Selected Sub-clusters | No of Sampled Households |
|-------------------|----------------------------------|--------------------|-----------------------------|--------------------------|
| Bardiya | Badhaiyatal Rural Municipality-2 | 6 | 3 | 3×10 = 30 |
| | Badhaiyatal Rural Municipality-3 | 5 | 3 | 3×10 = 30 |
| | Badhaiyatal Rural Municipality-6 | 8 | 3 | 3×10 = 30 |
| Dailekh | Narayan Municipality -4 | 5 | 3 | 3×10 = 30 |
| | Narayan Municipality -5 | 5 | 3 | 3×10 = 30 |
| | Narayan Municipality -10 | 7 | 3 | 3×10 = 30 |
| Total | | 36 | 18 | 18×10 = 180 |

Note. No = Number

Ethical considerations

The study was carried out under the guidance and norms of Combating Early/Forced Child Marriage Project of Aawaaj, a registered non-government organization in Nepal. All necessary information about the study was provided to the respondents and local authorities. Individual privacy and confidentiality of the respondents were assured and written informed consent was taken before starting the interview.

Results

Socio-demographic Characteristics of Respondents

Table 2 presents the socio-demographic characteristics of the total 155 married respondents interviewed in this study. Above two-thirds, (69.7%) of them were female and remaining below one-third (30.3%) were male. They were from different age-groups - 19.4% in age-group under 25 years, 23.2% in 25-34 years, 26.5% in 35-44 years, and 30.9% in 45 years and over. Their marital age ranged from seven years to 34 years and the mean age at first marriage was 18.4 years (SD=3.83). About two-thirds (67.1%) of them had an early marriage before their age at 20.

The educational status of the respondents shows that a clear majority of them (51%) had no formal education. About one-fifth of the respondents (19.4%) were illiterate and nearly one-third of them (31.6%) were only literate. One-fifth of them (20.6%) had secondary level education and a nearly similar proportion (23.2%) of them had elementary level education but only 5.2% of them had bachelor and higher-level education. The highest proportion of them (36.8%) were *Dalits* (so-called untouchables and backward caste-group) and the next higher (29%) were *Brahmins/Chhetris* (so-called upper castes); *Janajati* (indigenous caste-group) covered 27.1% and the least of them (7.1%) were *Madhesis* and *Muslims*. Almost all of them (96.8%) were *Hindus* and just 3.2% of them were *Christians* and *Muslims*.

Nearly two-thirds(63.9%) of them were from nuclear families and 36.1% from the joint family. The highest proportion of them (36.1%) had 4 to 5 members in their families and the next higher proportion (33.6%) had 6 to 7 family members, and the least of them (7.7%) had up to three members in their families. The major sources of family income for more than two-thirds of the respondents were agriculture (38.7%) and daily wage (33.5%) but 11% and 7.1% of them had industry/business and service in government or non-government organizations respectively as their major sources of family income.

Table 2: Socio-demographic characteristics of respondents

| Variables | Categories | Frequency (n = 155) | % |
|--------------------------------|---------------------|---------------------|------|
| Sex | Female | 108 | 69.7 |
| | Male | 47 | 30.3 |
| Age | Under 25 years | 30 | 19.4 |
| | 25 to 34 years | 36 | 23.2 |
| | 35 to 44 years | 41 | 26.5 |
| | 45 years and over | 48 | 30.9 |
| Marital Age | Under 20 years | 104 | 67.1 |
| | 20 years and over | 51 | 32.9 |
| Educational Status | Illiterate | 30 | 19.4 |
| | Basic Literate | 49 | 31.6 |
| | Elementary | 36 | 23.2 |
| | Secondary | 32 | 20.6 |
| | Bachelor and above | 8 | 5.2 |
| Caste/Ethnicity | Brahmin/Chhetri | 45 | 29.0 |
| | Dalit | 57 | 36.8 |
| | Janajati | 42 | 27.1 |
| | Madhesi and Muslim | 11 | 7.1 |
| Religion | Hindu | 150 | 96.8 |
| | Non-Hindu | 5 | 3.2 |
| Type of Family | Nuclear | 99 | 63.9 |
| | Joint | 56 | 36.1 |
| Family Size | Up to 3 members | 12 | 7.7 |
| | 4 to 5 members | 56 | 36.1 |
| | 6 to 7 members | 52 | 33.6 |
| | 8 members and above | 35 | 22.6 |
| Major Sources of Family Income | Agriculture | 60 | 38.7 |
| | Industry/Business | 17 | 11.0 |
| | Service | 11 | 7.1 |
| | Daily Wage | 52 | 33.5 |
| | Foreign employment | 15 | 9.7 |

Association of Socio-demographic Variables to Early Marriage

Table 3: Marital age of respondents by socio-demographic characteristics

| Variables | Categories | Marital Age | | | | Total | | p-value |
|-------------------------------|----------------------|----------------|------|-----------------|------|-------|-----|---------|
| | | Under 20 years | | 20 years & over | | N | % | |
| | | N | % | N | % | | | |
| Sex* | Female | 84 | 77.8 | 24 | 22.2 | 108 | 100 | .000 |
| | Male | 20 | 42.6 | 27 | 57.4 | 47 | 100 | |
| Age-group | Under 25 years | 17 | 56.7 | 13 | 43.3 | 30 | 100 | .164 |
| | 25 to 34 years | 23 | 63.9 | 13 | 36.1 | 36 | 100 | |
| | 35 to 44 years | 33 | 80.5 | 8 | 19.5 | 41 | 100 | |
| | 45 years and over | 31 | 64.6 | 17 | 35.4 | 48 | 100 | |
| Educational Status* | Illiterate | 22 | 73.3 | 8 | 26.7 | 30 | 100 | .000 |
| | Basic Literate | 44 | 89.8 | 5 | 10.2 | 49 | 100 | |
| | Elementary | 23 | 63.9 | 13 | 36.1 | 36 | 100 | |
| | Secondary and higher | 15 | 37.5 | 25 | 62.5 | 40 | 100 | |
| Caste/Ethnicity | Brahmin/Chhetri | 26 | 57.8 | 19 | 42.2 | 45 | 100 | .207 |
| | Dalit | 37 | 64.9 | 20 | 35.1 | 57 | 100 | |
| | Janajati | 33 | 78.6 | 9 | 21.4 | 42 | 100 | |
| | Madhesi and Muslim | 8 | 72.7 | 3 | 27.3 | 11 | 100 | |
| Type of Family | Nuclear | 70 | 70.7 | 29 | 29.3 | 99 | 100 | .203 |
| | Joint | 34 | 60.7 | 22 | 39.3 | 56 | 100 | |
| Family Size | Up to 3 members | 9 | 75.0 | 3 | 25.0 | 12 | 100 | .284 |
| | 4 to 5 members | 38 | 67.9 | 18 | 32.1 | 56 | 100 | |
| | 6 to 7 members | 38 | 73.1 | 14 | 26.9 | 52 | 100 | |
| | 8 members and above | 19 | 54.3 | 16 | 45.7 | 35 | 100 | |
| Major Source of Family Income | Agriculture | 42 | 70.0 | 18 | 30.0 | 60 | 100 | .052 |
| | Industry/Business | 11 | 64.7 | 6 | 35.3 | 17 | 100 | |
| | Service | 3 | 27.3 | 8 | 72.7 | 11 | 100 | |
| | Daily Wage | 36 | 69.2 | 16 | 30.8 | 52 | 100 | |
| | Foreign Employment | 12 | 80.0 | 3 | 20.0 | 15 | 100 | |

Note. N = Number; *Significant at Chi-square $p < 0.05$

The bivariate analysis using Chi-square at 95% CI examined the association between socio-demographic variables and marital age (Table 3). The sex and educational status of the respondents were significantly associated with their marital age ($p < 0.05$) but age, caste/ethnicity, family type, family size, and a major source of family income were found not associated with their marital age ($p > 0.05$). It also revealed that early marriage tendency among females was nearly two-timed higher than males (77.8% vs. 42.6%). Four out of every five respondents (i.e., 80.5%), who were currently aged 35 to 44 years, were found married earlier before their age at 20. However, age-wise data on early marriage shows a decreasing trend these days as the least of the respondents at age-group under 25 years (56.7%) was found married earlier though the association between age and marital age was not statistically significant ($p = .164$). Most of the respondents (89.8%) with basic literate levels were found married earlier and the trend of early marriage decreased with an increase in levels of education from elementary (63.9%) to secondary and higher education (37.5%). But,

interestingly, the proportion of early marriage was lower among illiterate respondents (73.3%) than basic literate ones.

Early marriage was the most common among *Janjati* and *Madhesi*/Muslim (78.6% and 72.7% respectively) than *Dalit* and *Brahmin/Chhetri* (64.9% and 57.8% respectively) but Chi-square test could not show an association between caste/ethnicity and marital age. The respondents from nuclear families were found married earlier than joint families (70.7% vs. 60.7%) which was not statistically significant. Similarly, the respondents from smaller family sizes had a higher proportion of early marriages than larger families as 75% of the respondents from the families with a maximum of three members had early marriage in comparison to 54.3% in families with eight or more members. But respondents with 4 to 5 and 6 to 7 members in their families had similar proportions of early marriages which were 67.9% and 73.1% respectively. Four out of every five respondents with foreign employment as the major source of family income had an early marriage and the least proportion (27.3%) of the respondents who had served as the major source of family income were married earlier. Similar proportions of early marriages (70% and 69.2% respectively) were seen among the respondents who had agriculture and daily wage as major sources of family income.

Discussion

The socio-demographic factors of the respondents like sex and education were found as major factors associated with early marriage. The prevalence of early marriage in the study area was 67.1% and it was 56.7% among the respondents currently aged less than 25 years which is higher than a nationally representative study of 46.2% in the 20-24 years age-group in Nepal (Plan Nepal, Save the Children, & WVIN, 2012). The higher proportion of early married women in comparison to men (77.8% vs. 42.6%) and statistically significant association between sex of the respondents and their marital age ($p < 0.05$) showed the influencing role of sex in determining early marriage which corresponds with the Nepal Demographic and Health Survey (NDHS) results that proportion of early marriage among women is higher than men (71% vs. 38%) in age-group 25-49 years (Ministry of Health Nepal, New ERA & ICF, 2017). It shows that deep-rooted gender norms in Nepalese society that prefer girls to marry a few years earlier than boys has a significant role to cause early marriage among girls than boys. The age-wise data of the respondents showed a decreasing trend of early marriage in the study area though it was highest (80.5%) in the age-group 35-44 years but the Chi-square results did not show an association of respondents' current age with their marital age. The NDHS data also demonstrated similar results of increasing early marriage with an increase in the current ages of respondents that means the trend is decreasing (Ministry of Health Nepal, New ERA & ICF, 2017).

The educational status of the respondents is seen oppositely related to early marriage which decreases while increasing levels of education of the respondents as early marriage proportion was 73.3% for illiterate and 37.5% for the secondary and higher level. This association between the educational status of the respondents and their marital age was statistically significant ($p < 0.05$) that was also supported by the NDHS data which revealed the association of education level with a median age at marriage among both women and men as women and men with SLC

or higher education married about 4 to 5 years later than those with no education (Ministry of Health Nepal, New ERA, & ICF, 2017). Similarly, a nationally representative study in Nepal indicated that child marriage was the most prevalent among illiterate women and men represented by 51.2% and 21.5% respectively (Plan Nepal, Save the Children, & WVIN, 2012) and another study in Nepal showed the significant association between education and early marriage (Sah et al., 2014). Furthermore, studies in Zambia, Bangladesh and Indonesia reflected that low level of education was significantly associated with early marriage and education was identified as a significant predictor of determining marital age (Mulenga et al., 2018; Razu, 2018; Rumble et al., 2018).

There was an increment of 6-7% in the proportions of early marriages in every caste and ethnic groups from *Brahmin/Chhetri*, *Dalit* and *Madhesi/Muslim* to *Janajati* that reflected a slight influence of caste/ethnicity in determining marital age but this association was not statistically significant ($p = .207$). However, a wider gap of more than 20% in the proportion of early marriage between *Brahmin/Chhetri* and *Janajati* shows a vital role of caste/ethnicity in determining early marriage that is statistically significant too ($p = .038$). A nationally representative study in Nepal indicated that child marriage was the most prevalent among Terai Dalits, Hill Dalits and Muslims which were 87.1%, 64.5% and 62.2% respectively (Plan Nepal, Save the Children, & WVIN, 2012). Similarly, another study in Nepal had similar results that Dalits and Terai castes had a higher prevalence of early marriage than other ethnic groups but the difference was not significant (Sah et al., 2014). But the present study found *Janajati* children as the most vulnerable to early marriage. However, *Madhesi/Muslim* and *Dalit* children in the present study were also in the greater risk of early marriage in comparison to *Brahmin* and *Chhetri* children. So, the analysis makes some meaning that caste/ethnicity can be a minor contributing factor to early marriage.

The proportion of early marriages was higher in nuclear families than in joint families by 10% but the study could not show a statistically significant association between the type of family and marital age of the respondents. Early marriage was prevalent mostly in the smallest family with maximum three members which were the least in the largest family with eight members or over but the family size of the respondents was not significantly associated with early marriages that differs from other studies which demonstrated a positive association of family size with child marriage (Ali, Ibrahim, Abdelgbar, Elgessim, 2014; Mulenga et al., 2018). But a few studies in Indonesia demonstrated that pressure to marry earlier was more in smaller families than in larger families with a greater number of siblings (Rumble et al., 2018) and family size did not influence the marital age of women (Hardiani & Junaidi, 2018). The major source of respondents' family income could not show association with early marriage though the respondents with foreign employment, agriculture and daily wage as major income sources had a higher prevalence of early marriage than service and industry/business. A study indicated that family economic factors were responsible to cause most of the early marriages (Birech, 2013; Wijayatiet al., 2017); high family income reduced the incidence of early marriage which was statistically associated too (Agtikasari, Soemanto, & Murti, 2019; Wijayatiet al., 2017). But the present study did not cover the income variables of the sample.

Limitations. Although the findings of this study offer valuable insights into factors associated with early marriage among the people of rural communities in Nepal, they need to be interpreted in the light of a few limitations of the study. As the study was based on the endline survey, its findings may not be generalizable in other general contexts. Furthermore, it cannot guarantee equal representation of all the household samples due to the unavailability of the latest data on the survey universe but tried to cover all the study clusters through equal representation of sub-clusters from all these clusters.

Conclusion

Early (or child) marriage is a global public health concern that is influenced by a complex web of factors. The prevalence of early marriage was the most common among those of women, age-group of 35-44 years, illiterate and basic literate ones, nuclear and small families, and *Janajatis*. Socio-demographic factors like age, caste/ethnicity, family type, family size and source of income were not found directly associated with early marriage for the sample but Sex and educational status were significantly associated with early marriage. Combating early marriage requires addressing these factors with sound educational provision to all children, especially to the girl child. Child marriage needs to be understood within the highly gendered context of Nepalese society and future research efforts should prioritize gender-transformative interventions to recognize and confront inequitable gender norms and actions.

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Menstrual Hygiene Management and Practices in Campuses

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Abstract

Studies on menstruation hygiene management (MHM) in education have focused mostly on adolescent school girls indicating the need to investigate this particular phenomenon in the context of higher education. In this study, I wanted to explore the experiences of female students and teachers during menstruation while they are at the campus and document them to unpack the realities of the phenomenon to persuade the campus authorities for better MHM on the campuses. Using the qualitative design, the study is aimed at exploring and probing students and teachers on their MHM practices. This research has nested the life experiences of myself and participants of purposively selected two constituent and one affiliated campuses of Tribhuvan University in the Kathmandu Valley. In-depth interviews with six teachers and focus group discussions with six groups of students were included in this study. The research revealed multiple issues during menstrual hygiene management that include lack of appropriate water sanitation and hygiene (WASH) facilities, no access to emergency absorbent during menstruation, no provision of pain killer medicines during uterine cramps (dysmenorrhea) and back-aches and no provision of dust bin for absorbent disposal. This indicates that higher education institutions in Nepal need to pay more attention to ensure dignified menstruation on campus.

Keywords: *Physical facilities, absorbent materials, menstrual practice, dysmenorrhea, taboos*

Introduction

Menstruation is one of the normal biological process and a sign of growth. It is inevitable for a female to go through this experience generally between 11 – 15 years of age and in Nepal, the average of menarche is 13.5 (Karki et al, 2017). During menstruation, females face ample of menstrual hygiene management (MHM) and practice-related issues such as lack of water, sanitation and hygiene; lack of absorbent and pain killer supply. I am alarmed every month when I recall the condition of the restroom at my campus. There is a common restroom for male and female teachers. They are not only unclean but also insecure in many senses. Due to the nature of voiding position among females, a dirty restroom can be a source of urinary and uterine tracts infection and this has been a case at the campus. Several of my colleagues have often shared that there is no provision of emergency absorbent material supply that causes embarrassment when menstruation is unpredictable for some students and teachers. During the long use of absorbents, lack of adequate water hygiene and sanitation (WASH) facilities to change or dispose of them has also led to issues such as discomfort and irritation in the skin, bruising and rashes often causing painful experiences shared by students.

Lack of access to clean water and adequate sanitation has direct impacts on many aspects of a person's life, including the incidence of disease, healthy growth, and premature death. Indirectly, these health risks have dire effects on a person's educational attainment and lifetime earnings. Indirectly, these health risks can have direct effects on a person's educational attainments and productivity (The World Bank, 2019). Menstruation is still generally considered unclean and shameful along with many restrictions imposed on women during menstruation that include entering kitchen, temples and participating in the family and community events along with the myths such as "pickles touched by menstruating women will spoil, seeds will become sterile, and plants will wilt" (Karki et al., 2017, p. 17) and so on.

Girls remained absent from school during their menstruation. School absenteeism was significantly associated with the type of absorbent used, lack of privacy at school, restrictions imposed on girls during menstruation, mother's education, and source of information on menstruation. Women and girls have reported in various studies that it affected their daily activities at school and that they had to miss their class tests and classes as a result of pain, shame, anxiety about leakage, and staining of their uniform (Vashisht, Pathak, Agarwalla, Patavegar, & Panda, 2018; Belay, Kuhlmann, & Wall, 2020). However, the menstrual restrictions and traditional beliefs vary according to the family type, ethnic group, community culture, religion, educational level, economic status and working culture of the place.

However, a study carried out in Chitwan (Oster and Thornton, 2011) reveals that menstruation has a very small impact on school attendance and it identified that girls miss school one day in a year. The study concludes that improved sanitary technology has no effect on reducing this (small) gap. But this study was based on an urban setting where the parents' literacy rate is higher and access to sanitary materials is easy. However, in Nepal, there are stories of girls and women suffering from menstruation problems and not attending school and some of my girl students have missed classes every month due to the lack of MHM facilities at the campus. This is the situation of many higher education institutions including the campuses that I have visited in Kathmandu including my own campus. I have heard similar cases or even worse situations in the campuses in more rural areas. Dignified menstruation is the right of every woman, but I have observed that we have not been able to exercise these rights while we are on campus.

In order to establish a basis to start conversations in educational institutions about directing resources towards MHM facilities, I found a gap in research to illustrate the consequences of not having such facilities. Having evidence on the impact of the lack of such facilities would make it easier for women to bring forth a discussion at their workplace. This study is an attempt in this regard. For this study, I selected two constituent and one affiliated campuses of Tribhuvan University in the Kathmandu valley in order to explore the current situation and practices of MHM among female students and teachers.

Methods

Being a social being, I faced various problems during menstruation in the Nepali socio-cultural context both at home and in educational institutions. I am thus eager to explore other colleague's and students' experiences on this issue. This study used a qualitative design

(Creswell, 2013). This research is based on the life experiences of myself, students and teachers at two constituent and one affiliated campuses of Tribhuvan University (TU). I purposively selected these campuses for study. In total six female teachers of reproductive age were selected from 3 campuses (2 teachers from each campus). Six focus group discussions (FGDs) were done with girl students from 3 campuses (2 FGD at each campus). Each group included 6-7 students chosen from those who were present in the campuses on the days of the visits. They all were bachelor level students from different streams. I obtained permission from class teachers and head of the departments to conduct the study and verbal consent was taken from teachers and students. For ethical reasons, I have used the pseudo names of the participants while presenting the information in this study.

I collected data by visiting the different campuses in their natural setting. I explored the participants' unique menstrual hygiene management practices through semi-structured questions and FGD guidelines. These questions focused on the life experiences of teachers and students in different campuses. I took informed consent from participants for audio recording in order to concentrate on the conversation while also retaining the informants' authentic words. I recorded the full interview while maintaining research ethics. While taking the information, I was sensitive about bracketing my own experiences. I continued FGD with participants until no new information was provided from additional interviews. After the data were collected, I listened to the recording several times and made notes of the key information translating them into English.

The data were analyzed using thematic content analysis. The study went through the following steps: making sense or acquiring a feeling for the protocols, extracting significant statements, formulating meanings, organizing the clusters of themes and integration of results and exhaustive (Edward & Welch, 2011). I read and re-read the transcription to identify participant's experiences and practices. I reviewed the transcription numerous times and found out the common and unique experiences. I identified themes in their answers and categorized them accordingly. Finally, I was able to formulate themes that I then analyzed, interpreted and described.

Results

The data indicate that multiple issues were present in the campus that has negatively affected the students' and teachers' access to dignified menstruation. Though I had some experience in this regard, many new stories and issues emerged during the discussion. The section below presents the results of the study.

Emergency MHM Facilities and Materials

One of the major problems that came during the interview with the teachers and discussion with the students was the no provision of MHM supplies particularly the sanitary pads, medicines in the campus during an emergency. During FGD, three students (Gioni, Samanta, Krishna) shared that sometimes, the period is irregular and it is very difficult to predict when they bleed. It is not feasible to carry absorbent every time we go to the campus. My student Gioni recalls her period experience in the campus this way.

My menstruation is irregular; 45 days to 2 months. Two weeks earlier, I was taking a psychology class and suddenly I had a period. I felt uneasy to leave class. After the class, I went to the restroom to check the bleeding. I found blood had leaked to my outer clothes already. My campus did not have emergency absorbents supply and there was no running water in the restroom. I covered the leakage with my sweater and went home.

I myself experienced a similar event in my class which still makes me feel bad and it illustrates the severity of the problem and the condition of MHM facilities in our campus.

As a girl was going out in my class, she fell down at the door and started to cry. She was shouting that the pain was unbearable and she wanted to go to the hospital. I attended to her immediately and brought her to the class where I found she was menstruating. Since there was no sick room in the campus and no emergency MHM material supply and WASH facilities for females during menstruation, I felt so helpless that I only counselled her to be calm. I and some of my students in the class did what we could do to bring her to normalcy.

This event made me think a lot. I was teaching at the university level and the university for me was a place to set examples for many things. Before I joined the campus, I thought that higher education institutions must have been equipped with all emergency facilities including emergency absorbent and pain killer medicine. When I saw my female student in this situation in the middle of the class, I was a bit nervous and restless. I was able to comfort her to the best of my ability. However, what I was looking for was a system in the educational institution to support the girls to attend classes during menstruation without any anxiety or fear.

Physical Health Issues and Management Practices

During the study, I asked students and teachers to share their health issues during menstruation. Physical issues that were common included lower abdominal pain (dysmenorrhea), backache, and weakness. Other issues varied individually were nausea, vomiting, an increase in appetite, a decrease in appetite, body aches, headache, dizziness, heavy bleeding, breast and lower limb pain. The common problem was dysmenorrhea which only varied in the level of tolerance. It is a subjective issue so it could be different from person to person. Teachers and students had similar issues, but students were found to be more worried than teachers perhaps due to the experiences in menstruation occurrence. A student, Pinki, shared her menstrual pain as follows;

Usually, I missed the first and second-day classes during menstruation due to unbearable uterine cramps. I had no single period without a pain killer. My last period was very painful. I took pills but it did not help and it was very difficult to bear. I went to the hospital with my mother. The doctor told me that the pain would decrease after marriage. I was not convinced by the advice. It didn't do much to help. Now, my periods are very painful and I need painkillers every month. I usually miss classes during the first and often the second day of my periods now. Sometimes, I feel bad that I am a girl.

Having worked as a nurse, I often heard gynecologists advising unmarried girls that dysmenorrhea will reduce naturally after marriage and childbirth. Patients go to the doctor to deal with the immediate consequences of the pain. Simply advising them that it would go away

after they got married at some point in the future is not helpful. Unmarried girls are often disappointed at such advice as they expect a solution to the pain in the form of an immediate remedy. As the human body functions somewhat subjectively, it is not accurate to say that all the females will find the solution eventually. I am aware of a married friend with a child who still faces dysmenorrhea and needs to take pain killers every cycle. So, doctors also should be careful and need to understand the patient's psychology to provide the right advice.

Participants shared that during dysmenorrhea they use home remedies such as taking rest, drinking hot soup, using hot water bags, sharing with mother and friends, consulting with a pharmacist, health workers and doctors. Those who were reliant on home remedies shared that they were avoiding pain killers due to fear having heard rumors of side effects such as medicine addiction, infertility and cancer. Students were found more scared of dysmenorrhea than teachers.

Absorbents Choices and Management Practices

There are different practices around the world regarding the type of absorbents and the mode of their use. Different kinds of materials are available in the market; disposable sanitary pads, reusable sanitary pads, tampons, menstrual cups, normal cotton clothes, etc. Most of the students, in this study, reported that their parents did not provide separate money to purchase sanitary pads and this is not something the parents considered as the basic need for girls. So, they either use the clothes or buy sanitary pads cutting the budget from other items such as food and pocket expenses. This is also indicated in a study by PSI, MIRA, & Maverick Collective Nepal (2017), where sanitary materials were not considered important by the parents. My participants were found to have faced various issues regarding the access to emergency absorbent and disposal of the absorbents during menstruation, particularly when at the campus.

My informants had more than four years of menstruation on average and they have used different types of absorbents. Teachers were found to use disposable sanitary pads only except one, Rinki, who used reusable cloth in addition to disposable sanitary pads. She elaborated her practice like this;

I have relatively easy to manage bleeding only lasting 4-5 days. When I leave home, that is the only time that I use disposable sanitary pads to prevent the risk of leakage to outer dresses. Otherwise, I am used to using cotton cloth since my first period. So, I prefer using soft clean reusable cotton cloths.

Absorbent use is an informed choice of a person. Thus, her practice will support to minimize waste and non-degradable materials. In the constituent campuses, I found most of the girls using both disposable sanitary pads and reusable clothes and sanitary pads. On the other hand, all the students at the affiliated campuses were using only disposable sanitary pads. One student, Malina, mentioned;

I participated in the event for National Dignified Menstruation Day at the National Theatre on 28th May 2018 where I got the chance to see the different types of absorbents. I bought one menstrual cup to try it out following the instructions. I was briefed about the benefits but I

failed to insert it properly. I tried learning about it more specifically through YouTube and now I am good with it. As I am unsure of the kind of water in restrooms outside of my house, I only change it at home. I still use disposable sanitary pads if I am out for extended periods of time.

Thus, I have noticed that the level of education, cultural beliefs, access, economic status and so on have an influence on the choice of absorbents. A student with an English major reported what she witnessed in the restroom;

...usually, I saw some absorbents in the corner of the toilet as there was no proper place to dispose of them. I get scared to throw it because the toilet didn't have lockable doors. I have also seen dogs roaming around with used pads and also throwing them around the playground. I felt that it would be very shameful. I took this issue to the campus union with the help of a friend but it was not taken seriously. I resorted to waiting until I returned home in order to change it. If I had to change it at the campus, I would bring it home in a plastic bag to dispose of it properly.

Participants had good knowledge about the need and importance of frequent change of absorbent and the appropriate intervals. But they shared that campuses have poor sanitation conditions in the toilet. There was no running water or means to dispose of sanitary pads. There was also a privacy issue as there were no proper locks on the doors. Because of all these issues, they were unable to change the sanitary pad during campus hours and had to carry the used pads home in a plastic bag. Some students reported discomfort, itching, irritating, bruising, hot, sore and skin rashes, causing 'pain' from prolonged use of absorbent (Mason et al., 2015).

Menstruation as a Social Stigma

Participants shared several social issues associated with menstruation. They often hear words such as untouchable, unworthy, restrictions, impure and so on when they menstruate. Some of them also mentioned inhumane behavior from family and society which was stronger with some ethnic groups. Restrictions on worship and temple visits were also prominent in some ethnic groups and locations. However, one of the participants said that she has no social restrictions during her menstruation. Most of the participants shared that during menstruation, they felt unstable emotion, low confidence, irritation, embarrassment, shame, indignity and generally did not feel fresh. Nepal is a multi-ethnic and multi-cultural country and social restrictions also vary from community to community. Most of the participants were temporarily or permanently migrated from outside the Kathmandu valley. They reported that they had to face more restrictions in their original home town than they do here in Kathmandu where they mostly live by themselves and there is no one to impose restrictions. Here in the city, they feel liberated. This quote from a student, Sita, illustrates this point;

...when I went to my hometown during vacation, I had to follow all the restrictions imposed on me. I had no way to escape from them. But here, I am like a free bird and I enjoy dignified menstruation. I wish I could do the same when I am with my family. When I have short-term visitors during my period, I often hide it from them so that they are not offended to be fed by

a girl on her period. But I am still worried that they might notice my period. So, I am extra careful during that time.

According to her story, she does not want to follow any restrictions but she did it to maintain the family tradition due to the long-standing practices. It shows that change is very difficult even though people want to change. A colleague who teaches mathematics told me that her husband and children asked her not to follow the restrictions but still she cannot do it due to the fear that God might get angry with her and something bad does not happen in the family. Teachers mentioned that though they are aware of the dignified menstruation, they still said that it was difficult for them not to follow the restrictions in order to please their family members and neighbors. I also asked them if there were any restrictions imposed on them in the campus and it was good to hear that no specific restrictions were imposed on the campus. Here's another story of one of the students, Amy;

.... Due to menstruation, last year, I was not able to participate to celebrate Dashain and I could not enjoy the festival with family and relatives. I felt very bad and it was embarrassing for me. I asked myself why was I discriminated against to participate with the family in social events simply for some normal biological change in my body? How can I eradicate this taboo? Who made this culture? How could a female be an impure person? Is it really so that females are untouchable? If I did not follow these restrictions, what would happen? I wanted to hide my menstruation but I did not do it due to unseen fear that was injected to me in the family setting. I felt unfortunate to be a female and very unhappy with our culture.

These stories show that menstruation is deeply rooted to the social convention and it is still regarded as the taboo subject to talk about in public. There is also anxiety among women and girls to share the issues. Students also shared their experience of being denied to attend social events during menstruation.

MHM Practices and their Effect on the Study and Work Performance

Most females, during the menstrual period experience some degree of pain and discomfort related to their menstrual period (dysmenorrhea) which could have an effect in their activities and it might affect their productivity at home or at their workplace (Poureslami & Osati, 2002). My participants shared that their study and work performance have been affected due to menstruation. Here's a brief note of what one of the students, Sarin, experienced;

My period was approaching close, so I was carrying a sanitary pad inside my bag. That day, I felt that I was bleeding when the class had just begun. Thus, I could not concentrate in the lecture due to the fear of leakage and I was unable to share what had happened with the teacher. Physically I was in class but mentally I was unable to learn or concentrate.

Most of the participants of this study shared that dysmenorrhea, leaking of blood, no provision of emergency absorbents, no absorbent disposal facilities, no provision of pain killer medicines during dysmenorrhea and lack of WASH facilities in campuses make it very difficult to concentrate in their study and work. Due to a lack of MHM emergency materials and WASH facilities, females are unable to concentrate on their study and work performance.

Discussion

The results presented above present a number of issues women and girls are facing in the campuses that have affected the study and work performance due to no provision of emergency supply materials like absorbent, pain killer medicine and WASH facilities. At the school level also, this has been the case as evidenced by a study which states, “lack of access to MHM materials, and inadequate WASH facilities, with little privacy and no appropriate means to dispose of used MHM materials. This combined with a fear of leakages, social marginalization, and inadequate MHM practices contributes to school absences” (UNICEF, 2018; Alam et al., 2017). Similarly, Tegegne and Mtike, (2014, p.9) Northeast Ethiopia study also showed that “fifty-eight percent of girls reported that their school-performance had declined after they had menarche”. This is a very serious issue that demands immediate action of the university authorities.

Campuses have not prioritized MHM related emergency materials in the campuses. This could also be due to the fact that most of the campuses are headed by males and perhaps they were not adequately aware of the sensitivity of this issue. So, male support and participation is extremely necessary to address the issues associated with menstruation.

Female students and teachers have also suffered various health issues during menstruation while they are in the campus as there is no provision of emergency absorbent supplies and pain killers. Similarly, Sapkota, Sharma, Budhathoki, Khanal and Pokhrel (2013); Sharma, Mehra, Kohli and Singh, (2017) also show that lack of emergency supplies for menstruation management in academic institutions is common across the region in South Asia. The management at institutions needs to feel responsible for these problems and female stakeholders need to open up to ensure their rights. It is not possible to deal with these problems amidst silence among the female stakeholders. The patriarchal setting in the society has instigated a culture that takes it as a personal issue among females. Very few females are in managerial roles because of which they have not been able to draw attention to the matter.

It is also important for women and girls to have access to appropriate and helpful advice during menstruation. Some form of pain was common among the participants and they have relied on home remedies like drinking hot soup, using hot water bags to relieve uterine cramps and take rest. Consultation with doctors, health workers, pharmacists, friends, or family regarding their problems were addressed differently for different people. A study in India also shows that pain is common and more than 50% of adolescents experienced dysmenorrhea (Sharma et al., 2017). Use of medicine in case of unbearable pains, hygiene and sanitation are some crucial areas in which appropriate advice is necessary lack of which may cause discomfort, itching, irritating, bruising, hot, sore and skin rashes, causing ‘pain’ from prolonged use of absorbent (Mason et al., 2015).

The quality of the absorbents and their use is yet another paramount issue in menstruation hygiene management and this issue was visible in this study as well. Most studies in urban settings depicted that majority of girls and women use disposable sanitary pads (Sapkota et al., 2013; Sharma et al., 2017; Bachloo et al., 2016). This may be due to multiple factors such as easy access in the market, economic capability, scarcity of water and time constraints for

washing. On the other hand, studies in the rural setting revealed that most of the girls and women use reusable cloths or reusable sanitary pads. This was attributed to awareness, accessibility, practices and so on. Among them, some girls and women were using both reusable cloths/reusable sanitary pads and disposable sanitary pad. A report by WaterAid Nepal (2009) reveals that most of the respondents (66%) used a re-usable cloth to absorb menstrual flow during menstruation. Among those who were not using reusable sanitary pads, not knowing about its availability (41%) and high cost (38%) were the major reasons. The low cost and ease of availability of rag cloth were seen to be the reasons why it was commonly used by girls in both rural and urban settings, however many of them preferred sanitary pads. UNICEF's (2018) found that girls in schools with WASH program intervention used re-usable sanitary pads while girls at schools without intervention used re-usable cloth. This shows that education about the absorbents and their use contributes to better menstruation management.

Access to MHM friendly facilities is a fundamental human right for women and girls. Unfortunately, this still seems to be a luxury in our higher education institutions as indicated by this study. Many studies show that developing countries have not been prioritizing the females and more specifically MHM friendly facilities (Sommer et al., 2016; Mason et al., 2015). In the urban setting in Nepal, as the waste including the absorbent is not managed in time, it gets dispersed through street dogs, birds and other animals. This has also become a major cause of pollution. Reusable sanitary pads are thus becoming more popular and have been getting much praise from environmentalists. However, people who are already habituated to using disposable pads have a hard time getting back as long as it is easily available.

Teachers are aware of the dignified menstruation but it is still difficult for them not to follow the restrictions in order to please their family members and neighbors. In Nepal, there are about 40 restrictions imposed upon the menstruating women and these restrictions are associated to various socio-cultural myths and traditional beliefs (Paudel, 2018). Mothers were more rigid than fathers in imposing menstrual restrictions in the family. Restrictions do not only affect female dignity and health but also affect family and social health. I have seen this in my family where my mother was stricter than my father mainly because she was the one who would take care of me during the period and she would tell me all the do's and don'ts. It is the mothers who provide "more information about maintaining restrictions, (and) hiding menstruation" (Morrison et al., 2016, p. 12). This practice is so deeply grounded in the mind of the girls that they find it very difficult to change when they grow up. Nowadays some males have come forward to eradicate the restriction issues.

The practice of restricting girls and women in ceremonies and social events; celebrate festivals and family events; and enter and worship in the temples during menstruation make females socially and mentally disturbed. A study by PSI/ Nepal et al., (2017), revealed that female is exiled and excluded from social and cultural activities during menstruation. Similarly, UNICEF Nepal (2018) also mentions that schoolgirls had low confidence to go in front of the class, playing sports and sharing a bench with boys.

Conclusion

In conclusion, it can be said that teachers and students have been facing a multitude of problems during menstruation in the campuses of Tribhuvan University and MHM has not been a priority area for the educational institution leaders. Students have to spend long hours in the campuses and not having appropriate MHM facilities affects their studies. The issue of MHM facilities is not only a health issue but also a human right issue. Dignified menstruation is a human right for every woman. It is necessary to break silence on this matter as it concerns all females everywhere. As seen from this study, even in the higher education institutions in Nepal, basic MHM facilities are still lacking and female students and teachers are all suffering every day. This is such a shame in the twenty-first century and all of us including the campus administration should be aware of this fact. We should act immediately to manage and ensure MHM facilities in the campus. Additionally, awareness-raising and discussion sessions on overcoming the myths and taboos might also help the women and girls to enjoy their dignified menstruation rights.

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Problems and Practice of Management on Menstruation by Adolescents Girls of Basic Schools of Chitwan, Nepal

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Abstract

Managing menstruation in a hygienic way is a challenge in most of the low and middle-income countries (LMIC) including Nepal, where normal and natural physiological process of menstruation is considered as girls' problem which is viewed as sinful, unholy and matter of shame. This paper explores the current practice and existing difficulties that adolescents girls encounter hygienic management of menstruation (MHM) especially during school days. The study was conducted on five purposively selected community schools of Chitwan district. The study adopted Participatory Action Research (PAR) as an approach, that is encapsulated with mixed method research design. For qualitative information observation, focus group discussions (FGD) and field notes were used, whereas for quantitative data self-administrative questionnaires were used. Quantitative information was collected from 205 girls students who were present at schools on the day of data collection. The finding shows that majority of the girls (93.7%) who encounter hygienic management of menstruation were of 10-14 years old age, whereas nearly one third of them were (29%) from grade eight. Similarly, among the total 205 girls, only 79 girls have already started their menstruation; among those who have started menstruation majority (78%) had heard about menstruation from their mothers. Likewise, 35% girls used homemade cotton pads and 40.5% of them changed pad three times a day. During FGD, adolescents girls shared that lack of water and soap in toilets, stress and lack of concentration during menstruation are the major difficulties which they encounter during days of menstruation. They suggested the concerned authorities to manage pad bank, make soap and water available, and develop skills for proper disposing of used sanitary pads for MHM at schools.

Keywords: Adolescents, menstruation hygiene management, School

Introduction

Managing menstruation in a hygienic way is a challenge in most of the LMIC (Sommer et al., 2016) including Nepal, where normal and natural physiological process of menstruation is considered as girls' problem and view as a sinful, unholy and matter of shame (Crawford et al., 2014). Furthermore, lack of access to affordable menstrual materials, lack of improved sanitation facilities, soap, water, and private place to change pads are facilities related problems that come hindering the hygienic management of menstrual (MHM) (Dhakal et al., 2018). Similarly, little, inaccurate or incomplete knowledge about menstruation, very less or no knowledge about reproductive tract infections, not prepared for menstruation further acts as an obstacle for better MHM (Kaur et al., 2018). Thus to address those revealed problems

regarding MHM, government of Nepal (GON) has started different awareness campaign programs, sanitary pad management procedure, 2076 and even brought the provision of providing free sanitary pads in schools. Furthermore, in 2017, Government of Nepal passed a law punishing people who force women into exile during menstruating with up to three months in jail or a fine of 3,000 Nepalese rupees. Despite national and international initiation and intervention for MHM, still 15 to 22% of girls missed schools during the days of menstruation (Dhakal et al., 2018); less than half (48.1%) of the girls have appropriate knowledge about menstruation (Baumann et al., 2019) and they experience different forms of restrictions during the days of their period (Sapkota et al., 2013). The practice and perception of menstruation is different in culture and context of Nepal, the practice of restriction is varied from urban to rural and different ethnic groups (Ranabhat et al., 2015). In this context, this paper explores the current practice and the problems that adolescents girls are encountering for MHM in the schools of Chitwan that come under semi-urban area and examines how their problems are different from rest of the others. The findings of the study will help in designing the context based MHM program targeted for adolescents of Chitwan district in contrast to blanket approach that has been followed for MHM.

Methods

The study was conducted on five purposively selected community schools of Chitwan district with the support of Rupantaran Project. The project (2016-2021) focuses on transformation of the quality of teaching and learning at the basic education level in Nepal, that offers a scholarship for PhD students for their academic capacity building jointly implemented by three universities: Tribhuvan University, Kathmandu University, Nepal and Norwegian University of Life Sciences, Norway. The project focuses on different issues on school education including menstrual hygiene. This study adopted Participatory Action Research (PAR) as an approach that was encapsulated with the mixed method research design, where equal weightage was given to qualitative and quantitative information. For the quantitative data, self-administrative questions were used whereas for qualitative information observation, focus group discussions (FGD) and field notes from the researchers were used. The results were generated by triangulation of both data. For quantitative data, SPSS version 22 was used for analysis, whereas for qualitative data thematic analysis was adopted. For the quantitative data collection all the students from grade four to eight who were present at the school on the day of data collection were included, whereas for the qualitative information, series of FGD and observation were done. There were altogether 205 girls students involved in quantitative data collection procedure among whom only 79 girls had experienced menstruation. So, specific information related to menstruation was elicited from the girls who had already started menstruation. Both qualitative and quantitative questions were pre-tested for reliability before actual data collection. Furthermore, the research is ethically approved by NHRC (Nepal Health Research Council), and separate written consent from the teacher and verbal consent from the parents and students were taken.

Results

The results section is presented in a threefold subtitles, firstly socio-demographics of the girls students, then knowledge of menstruation and practice, and finally use of pads during menstruation and study variables associated.

Socio-demographics of Girls Students

This section deals with girls students' socio-demographic information such as age, grade, religion, houses, and caste groups. The data in table 1 below shows that out of 205 girls, the majority of students (83%) belonged to the age category 10 -14 years. Similarly, nearly one third (29.3%) were from grade eight, which was followed by grade seven (26.3%). Three quarters (75.1%) belonged to the Hindu religion and nearly three fifths (61.5%) lived in concrete houses. In the same line, four in ten (40.5%) belonged to disadvantaged Janajati groups, followed by Dalits (22.4%).

Table 1: Socio- demographic information of girls' students

| Characteristics | Number (N= 205) | Percentage |
|--------------------------------|-----------------|------------|
| Age | | |
| Below 9 | 22 | 10.7 |
| 10-14 | 170 | 83.0 |
| 15 and above | 13 | 6.3 |
| Grade | | |
| Four | 25 | 12.2 |
| Five | 22 | 10.7 |
| Six | 44 | 21.5 |
| Seven | 54 | 26.3 |
| Eight | 60 | 29.3 |
| Religion | | |
| Hindu | 154 | 75.1 |
| Buddha | 35 | 17.1 |
| Christian | 16 | 7.8 |
| House type | | |
| Non-concrete | 79 | 38.5 |
| Concrete | 126 | 61.5 |
| Caste groups | | |
| Dalit | 46 | 22.4 |
| Disadvantaged Janajati | 83 | 40.5 |
| Disadvantaged non-dalit | 8 | 3.9 |
| Relatively Advantaged Janajati | 28 | 13.7 |
| Upper caste | 40 | 19.5 |

The above data gives the glimpses of the character of the participants based on which further analysis has been done.

Knowledge of Menstruation and Practices

This section shows the concern of the girls students' knowledge related to menstruation and practices. Basically, it deals with the girls' first time information about menstruation, types of pads used during it, change of pads in a day, and at schools and its disposal, and many others. The data in table 2 below show the data related to menstruation, which was asked to girls students. The majority of the girls (78.5%) had ever heard about menstruation from their

mothers, nearly one fifth (17.7%) from sisters, and very less (3.8 %) from the teachers. Nearly two-thirds (65.8%) shared that they buy and use sanitary pads from the market as an absorbent for blood. Four out of ten (40.5%) girls changed pads three times a day which was double (20.2%) to those who changed pads once a day. Overwhelmingly, 81 per cent girls change pads at schools, and considerable number of the girls use dustbins to dispose the used pads. The majority (83.5%) of students agreed that they have a safe place or separate room to change pads at schools.

Table 2: Knowledge and practice related to menstruation

| Variables | Number | Percentage |
|--|--------|------------|
| First time information about menstruation (n= 79) | | |
| Mother | 62 | 78.5 |
| Sister | 14 | 17.7 |
| Teacher | 3 | 3.8 |
| Types of pads used during menstruation | | |
| Re use homemade pad | 27 | 34.2 |
| Sanitary pads from market | 52 | 65.8 |
| Changing pads on a day | | |
| Once a day | 16 | 20.2 |
| Twice a day | 30 | 38.0 |
| Thrice a day | 32 | 40.5 |
| None | 1 | 1.3 |
| Change of pad at school | | |
| Yes | 64 | 81.0 |
| No | 15 | 19.0 |
| Dispose of Sanitary pad at school (n=64) | | |
| Disposing in toilet pan | 9 | 14.1 |
| Pad on collecting chamber | 19 | 29.7 |
| Openly on corner of toilet | 36 | 56.2 |
| Having safe place to change pad in school (n= 79) | | |
| Yes | 66 | 83.5 |
| No | 13 | 16.5 |
| Absent at school during menstruation | | |
| No | 50 | 63.3 |
| Yes | 29 | 36.7 |
| Number of days absent during menstruation (n=29) | | |
| One day | 23 | 79.3 |
| Two day | 5 | 17.2 |
| Three day | 1 | 3.5 |
| Cleaning genital after changing pads | | |
| No | 9 | 31.0 |
| Yes | 20 | 69.0 |
| Materials used in cleaning genital | | |
| Soap water | 6 | 20.7 |
| Water only | 23 | 79.3 |
| Having bath during menstruation | | |
| No | 3 | 10.3 |
| Yes | 26 | 89.7 |

Mother is the main source of information about menstruation for girls. The students (36.7 %) reported that they missed schools during menstruation. The study shows that nearly four fifths (79.3%) missed the school for a day, followed by 17.2 % two days.

The figure 1 below explains the reasons for missing school during menstruation by adolescents girls.

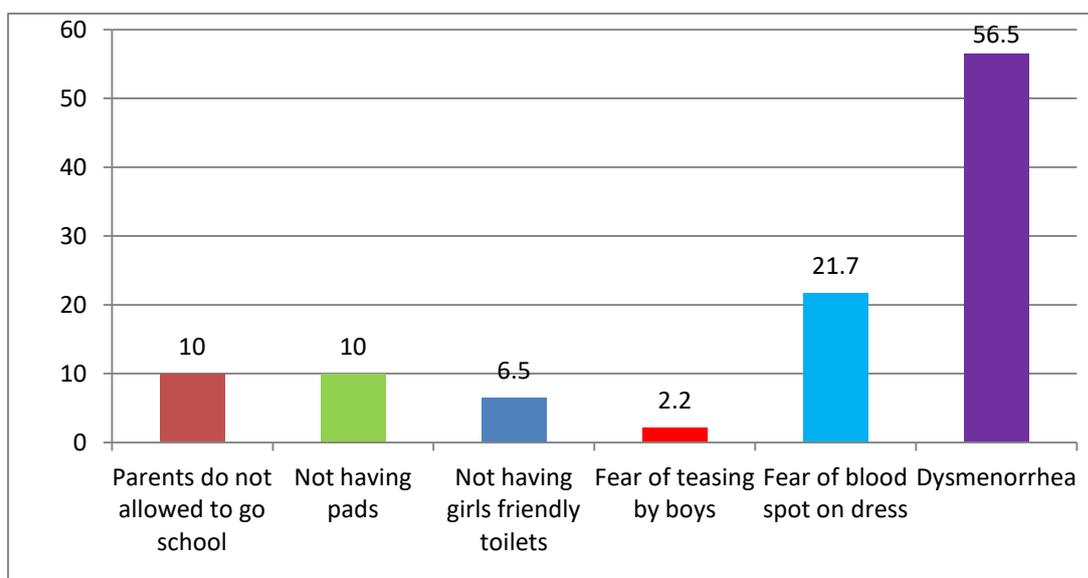


Figure 1: Reasons for not going to school during menstruation

More than fifty percent (56.5 %) of the girls missed their school because of pain during periods, followed by 21.7% due to fear of blood spot on their school uniforms. If we could manage basic facilities at school like pain killer, pads in school, we can reduce the number of absenteeism at school during menstruation.

The Focus Group Discussion (FGD) was also conducted to explore the knowledge and current practice of menstruation management by adolescents girls at school. During FGD one girl participant shared that

We have separate toilets for girls, but the toilet does not have sufficient water. To be honest, I haven't seen soap in our toilet yet. The bins are full of pads.....because of that girls' toilets are very smelly...we need to cover our nose while entering the toilets. (FGD, Participant 8)

Adding to her another participant shared,

I was terrified, when I saw blood coming out from my vagina. I thought I had some major disease and would die soon, ... at that time there was no one at home ...I cried for several hours (FGD, participant 6)

It's difficult to concentrate in class while having period, I am much worried with the blood spot on my dress, and sometimes, boys tease us by saying ...dirty girls....I feel so bad being women especially when I am not allowed to enter the kitchen and not allowed to any social function on these days...I wish, I would I never have periods. (FGD, participant 7)

The overwhelming number of girls responding to the self-administered survey mentioned that they clean genitals during menstruation. Meanwhile, in FGD they shared that they knew they needed to clean the genitals during the period, but the school lacks clean water. As a result, they do not clean genitals at the school. However, in-home, they clean genitals after changing pads.

Sometimes, when we get menstruation in school, we take leave from school and go back to home...sometimes, teachers scold us saying we are staging a drama.....by saying we are having pain....even sometimes we need to buy pads from the money we brought for our snacks, and have to stay in hunger whole day. (FGD, 7 class girl).

Both qualitative and quantitative data show that managing menstruation at school is full of challenge due to unavailability of basic facilities like water, pads, soaps, etc. at school.

Study Variables Association

This section is on association between types of pads and study variables that follow. As regards this, table 3 below discusses the economic status of students which matters in their choice of pads. The 51 % girls from low-socio economic backgrounds were found to be using re-usable pads. There is no much difference in the use of types of pads based on religions and castes/ethnicity. Most girls (71.9%) using commercial pads were found changing pads frequently compared to those who used homemade pads. This finding is contradicted with the qualitative findings, where the students shared that to save the money, they have been using commercial pads for a long time.

Umm...to save money some of my friends do not change pads commercial pad for a long time, uumm... like if they use a pad on 4th day when they have scanty bleeding, they only throw it on either 5th or 6th day. (FGD, a participant from class 8).

Table 3: Association between type of pad and study variables

| Variables | Use of homemade pads | Use of commercial pads | Chi-sq. |
|---|----------------------|------------------------|---------|
| House * | | | |
| Non-concrete | 51.9 | 48.1 | 0.33 |
| Concrete | 27.8 | 72.2 | |
| Religion * | | | |
| Hindu | 37 | 63.0 | |
| Non-Hindu | 33 | 66.7 | 0.74 |
| Caste* | | | |
| Dalit | 35.7 | 64.3 | |
| Non- Dalit | 34.8 | 65.2 | 0.95 |
| Type of family * | | | |
| Joint family | 42.9 | 57.1 | 0.33 |
| Nuclear | 32.1 | 67.9 | |
| Changing pads during menstruation * | | | |
| Once a day | 64.7 | 35.3 | 0.17 |
| Twice a day | 25.8 | 74.2 | |
| Thrice a day | 28.1 | 71.9 | |
| Changing genital after changing pads * | | | |
| Yes | 33.8 | 66.2 | 0.50 |
| No | 50 | 50 | |

(Note*: None of the variables analyzed here were found statistically significant)

The data show that the use of home made pads is not associated to the religion, caste and type of family. However, in FGD adolescents girls shared that they do not change commercial pads frequently so that they could save a little money for snacks, no matter whether they get fully soaked.

In a focused group discussion, the girls shared that they use home-made pads when they are at home and use commercial pads at school because it is difficult for them to manage homemade pads at school. Another girl added that sometimes they feel awkward when boys find cotton pads in their bags or sometimes cloths (homemade pads) come out of bags, while they take out a book from a bag. Similarly, during the workshop conducted to explore the problems related to menstruation and probable solutions, most of the adolescent girls shared that lack of water and soap, disposing used sanitary pads everywhere, taking stress and lack of concentration on study during menstruation, and missing the classes are the reasons that have forced them to stay in hunger whole day. Moreover, they need to spend their snacks money in buying pads which is the saddest aspect of the problems identified.

Every girls have their period, so all should understand that, they should have stress-free and joyful menstruation, because its physiological change (FGD, a participant from class 8)

In the meantime, while they identified their problems by themselves, they have also come up with multiple solutions for solving those problems like managing pad banks at school, an awareness session on menstruation at school, teaching skills like making environment friendly home-made pads, and proper way of disposing used sanitary pads.

Discussion

This study reveals that in context of Nepal, family members are the primary source of information about menstruation. A study by Parajuli et al. (2016) found that more than half of the respondents (53.9%) were taught about menstruation by their mothers, which was similar to our finding, where the main source of an informant for adolescents girls were mothers which is even similar to the study done in India (Thakre et al., 2011). In addition to that, a study done in three districts of Nepal namely Achham, Bajura and Parsa in schools shows that eight percent of the girls received information about menstruation from teachers, which is even lesser by 1.5% in this study. While having FGD from the participants, the researcher reflected that the students talk very less with their teachers about menstruation; they prefer talking with their friends, that might be because of existing structural differences and lack of friendly relation between teachers and students. A study by Crawford et al. 2014 on managing menstruation in Nepal reported that little preparation about menarche caused distress, and were subjected to ongoing stigmatization as menstruating women, which is relevant with the finding in this study, where the students during FGD mention how terrified they were during menstruation. Regarding the restriction based on caste and ethnicity, the adolescents girls still have a different type of restrictions during menstruation like not being allowed to cook food, not being allowed to visit holy places and sleep in own house during menarche (Parajuli et al., 2016), which was supportive to the present study as well, which was revealed by girls during

FGD. Nearly half (45.74%) of the girls of Nagpur found to be using old clothes as an absorbent which was slightly more (34.7) from this study. A study by Karki (2019) shows that 36.7% sometimes and 3.3% always missed the schools during menstruation, whereas in the present study, 36.7% girls missed the class. But the study by Oster & Thornton (2011) contradict with this the finding of this study which claims that menstruation has a very small impact on school attendance. The study estimates that the girls miss a total of 0.4 days in a 180 day school year. Furthermore, a study by Sivakami et al. (2019) showed the direct relation of education with menstruation which further indicated pain medication in school and use of disposable pads were associated with lower absenteeism and inadequate sanitary facilities with higher absenteeism during menstruation, whereas in this study as well painful menstruation is one of the significant causes of absenteeism at school. Similarly, the study by Baumann et al. (2019) showed that 59% of the adolescents girls had positive menstrual practices, like changing pads every four hourly, using soap, and taking nutritious diet during menstruation. Unlikely to this, in this study more than three fifth of the girls (69 %) clean genitals after changing pads and 89.7 % take bath during periods. Furthermore, Baumann et al. claimed that menstrual health programs may not be sufficient for improving menstrual knowledge and practices for all; this finding is supporting our study, where the students have indicated various reasons that need to be addressed separately.

Conclusion

Restriction during periods, lack of facilities, and absenteeism during menstruation are some common problems that the adolescents girls from Chitwan face, which is similar to the problems faced by the girls from different parts of Nepal. Menstrual hygiene education, managing pads banks at school, proper ways of disposing used sanitary pads and provision of adequate sanitary facilities at school are some suggestions which the adolescents girls have identified that would help to improve their current practices for MHM. Furthermore, stress-free and joyful menstruation is the right of every female, irrespective of their culture, age and education.

Declarations

Ethics Approval and Consent to Participate

The ethical approval for this study was obtained from Nepal Health Research Council. Informed consent of participants was taken from the students, school authorities and parents.

Consent for Publication

Consent for publication was received from school administration, teachers and parents, before submission of the manuscript.

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Multi-level Barriers for Utilization of Youth Friendly Reproductive Health Services (YFRHS) among Youths

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Abstract

The present study aims to examine the multi-level barriers to utilize by the youth-friendly reproductive health services (YFRHS) among the school-going youths of the Surkhet valley of Nepal. This study is based on the sequential explanatory research design under mixed-method research. The quantitative data were collected using the self-administered questionnaire from the 249 youths, aged between the 15-24 years, those selected by using random sampling. The qualitative data were collected using the Focus Group Discussions (FGDs) from the 12 participants who were selected purposively. The study confirmed that school-going youths do not have appropriate utilization of YFHS due to multi-layered barriers. However, the utilization of the service was higher among females, those the older age group, studying in the upper classes, the upper castes, and married youths. The key findings and themes are recognized as multi-layered barriers including personal-level, health system-level, community-level, and policy-level on the entire socio-ecological field. Among them, the existing health system is the foremost barrier. Multi-level interventions are, therefore, required to increase the YFRHS utilization and improve concerns for school-going-youths.

Keywords: Youth-friendly services, multi-level barriers, youths, utilization, mixed-method

Introduction

There are nearly 1.2 billion youths aged between 15 to 24 years old on the planet (WHO, 2020) and mainly increased in the developing countries (United Nations, 2019). However, young populations are also increasing in Nepal. The total youth population in Nepal is 40.3% (Ministry of Youth and Sports, 2014). Similarly, the adolescents and youth population between the aged 10 to 24 years old accounted for 24.2 percent of the total population (CBS, 2012).

The adolescents and youth population in Nepal are often faced with limited access to health services and (Khanal, 2016). Due to the fast-moving lifestyles and the influence of the Western culture, the lack of information about sexual and reproduction health (SRH), traditional myths and misconceptions, the health of the youths is unprotected (Subedi & Dybedi, 2009). Young continue to face greater reproductive health risks than adults (Senderowitz, Hainsworth, & Solter, 2003). YFRHS is a rights approach for young people and an often strong focus on physical, social and mental aspects of SRH (Braeken & Rondinelli, 2012). If they utilize the YFHS promptly, lots of health problems will be reduced (The Himalaya Times, 2017).

Barriers to utilizing SRH services are multiple and relatively perceived differently in different contexts. The various studies in Nepal and other countries indicated that the diverse and multiple levels of barriers exist in YFRHS (Gombachika et al., 2012) and comes from their

socio-ecology and dynamic interrelationships that existed across contexts (Marcell et al., 2017), such as the policy-level, facility-level, health provider-level, family and community-level (UNFPA, UNICEF & the Government of Nepal, 2015). Lack of awareness about the services, socio-culture norms, confidentiality, feasible service hours, and the preferences for same-sex service providers are the factors affecting the utilization (Napit et al., 2020) are also known as cognitive accessibility barriers and psychosocial accessibility barriers preventing young people from accessing the SRH services (Thongmixay et al., 2019). The main barriers relate to low awareness of AFHS and their own embarrassment at seeking SRH services, community-level, socio-culture norms and attitudes, insufficient training, monitoring and supervision, inadequate resources to ensure privacy and poor implementation of the SRH Program (The Himalayan Times, 2015). The negative attitudes towards young clients from providers may inhibit access and reinforce young people do not receive services (WHO, 2004).

According to the above-stated literature, there are some gaps that can be seen in youth health services. Despite having the numerous national plans, policies, facilities and educational programs, knowledge and practices, YFHS seems very poor in the youth groups. The above-mentioned findings indicated that young people have faced multi-level barriers in the RH service. The YFRHS have been a major concern in western countries. In Nepal, youth problems have largely existed but there are a few researches have been done on YFHS issue. Research, regarding the multiple barriers to utilization of YFRHS, is rarely done by any researchers in the Surkhet district. This is the main reason to carry out this study. Thus, this study aims to explore the multiple barriers to uptakes by the YFRHS within the school youths of the Surkhet valley.

Guiding Framework: Socio-Ecological Model

There are varieties of applications of ecologic perspectives, addressing different health programs in varieties of settings (McLeroy, Bibeau, Steckler & Glanz, 1988) which recognize the intertwined relationship existing between an individual and their environment and incorporate the multiple levels of influence, dynamic interactions and multidimensional structure (Stokols, Lejano & Hipp, 2013) on health behaviour. This model provides a framework for understanding how individuals and their social environments mutually affect each other to utilize health service seeking behavior. Kenneth Mc Leroy's Ecological Model (1988) is further defined as Stokols's Social-ecological (SEM) Model of Health Promotion (Gombachika et al., 2012) to depict interrelated systems at the intrapersonal, interpersonal, organizational, community, and policy levels illustrated as concentric circles (Wendel & McLeroy, 2012). By using the SEM as an analytical lens, this study explores the multiple barriers to utilizing YFRS at the individual, health system, and community and policy levels (Figure 1).

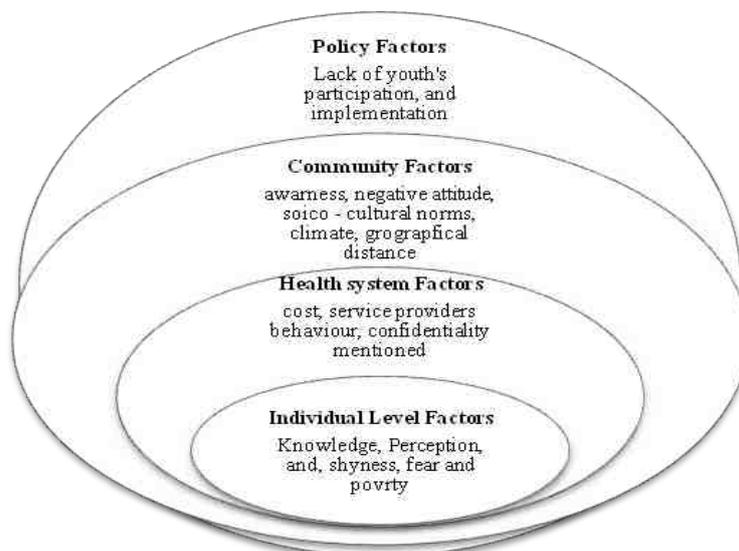


Figure 1: Socio-ecological model and multiple behaviors of YFHS adopted from UNFPA, UNICEF& the Government of Nepal, 2015)

Methods

This study was based on a cross-sectional study design under a descriptive study. In this study, quantitative data were used as primary data and qualitative data were used as supportive data. Thus, this study followed a sequential explanatory design under a mixed-methods research approach. This study was conducted in secondary schools and Family Planning Association Nepal (FPAN) of Surkhet Valley. All the school students, aged between 10 to 24 years old, studying in secondary schools were the study population for quantitative research. Likewise, for the qualitative research, the health service providers and the youth facilitators or volunteers, working in the FPAN project, were recruited as a study population.

Based on the record of the Surkhet District Education Office, the nine public secondary schools are operating up to twelve classes in the district. Out of the total secondary schools, four schools were randomly selected for the study. According to the records of selected schools, 3,109 youth students were studying during the study period. The sample size was 249 (8%) of a total population selected randomly and calculated by using the Rao soft sample size calculator. For qualitative research, twelve participants were selected purposively from health service providers and youth facilitators/volunteers from FPAN project. The quantitative study employed a self-administered structured questionnaire and the qualitative study employed FGD. All the collected data were checked carefully, arranged in order, edited, and coded before the computer entry. For qualitative data analysis, the study used descriptive statistical tools such as numbers, percentages, and cross-tabulations. Qualitative data were transcribed, interpreted, coded and thematically analyzed. Qualitative and quantitative data were triangulated, merged and presented in the appropriate headings.

The ethical permission was obtained from the District Education Office, schools and the FPAN office of Surkhet. The informed consent was sought verbally by the participants. The research

team has maintained confidentiality and anonymity where no one would force to participate in the study if they wish not to participate.

Results

The total number of participants (n=12), aged between 18 to 32 years old, male and female, were included in FGDs and half of them were males. Most of the participants (n=10) were youth facilitators and volunteers. One of them was a medical doctor and one nurse (see Table 1).

Table 1. *Characteristics of the FGD participants*

| Distribution of age (in years) | | Number |
|--------------------------------|--------------------|----------------------|
| Age | 18-21 years old | 3 (female) |
| | 20-24 years old | 3 (male) |
| | above 24 years old | 6 (3 male, 3 female) |
| Sex | male | 6 |
| | Female | 6 |
| Post | Medical doctor | 1 |
| | Nurse | 1 |
| | Youth Facilitator | 9 |
| | Youth volunteer | 1 |

Respondents' Characteristics and Utilization of YFHS

The study showed poor utilization of the YFRHS services by the male group than the female group (39.59%). Likewise, the 20 to 24 years-old-age-group (youth) benefitted more than the age-group 15 to 19 years old and 10 to 14 years-old-age-group from the services (57.57%). The group of higher classes took more benefit from the YFRHS services (45.65%) than the group of the lower classes. The Chhetri caste has utilized more services than other castes. However, 77.08% of the married youths benefitted from the services than the unmarried youths (see Table 2).

Table 2. *Respondents' profile and utilization of YFRHS*

| Description | Category | Utilized (%) | Not utilized (%) | Total |
|----------------|-----------|--------------|------------------|-------|
| Sex | Female | 59 (39.59) | 90 (60.40) | 149 |
| | Male | 34 (34) | 66 (66) | 100 |
| Age Group | 10-14 | 19 (32.75) | 39 (67.24%) | 58 |
| | 15-19 | 55 (34.81) | 103 (65.18%) | 158 |
| | 20-24 | 18 (57.57) | 15 (45.45%) | 33 |
| Class | 9-10 | 39 (33.62) | 77 (66.38) | 116 |
| | 11-12 | 53 (38.09) | 80 (61.90) | 133 |
| Ethnicity | Chhetri | 67 (50.37) | 66 (49.62) | 133 |
| | Brahmins | 20 (30.30) | 46 (69.69) | 66 |
| | Janajati | 6 (24.13) | 23 (79.31) | 29 |
| | Dalit | 4 (23.08) | 17 (80.95) | 21 |
| Marital status | Married | 37 (77.08) | 11 (22.91) | 48 |
| | Unmarried | 55 (27.26) | 146 (72.63) | 201 |
| Religion | Hindu | 87 (37.70) | 150 (63.29) | 237 |
| | Others | 5 (41.66) | 7 (58.33) | 12 |

Barriers to Utilization of YFRHS

Youths have observed many barriers affecting the access and utilization of the YFRHS. Nearly 80% of the participants have said that the existing healthcare system is the main barriers and about half of the respondents showed the community level barrier. However, 42.57 percent of the respondents indicated the individual level and some (21.68%) said policy level barriers.

Table 3. *Perceived multi-level barriers to utilize YFRHS displayed by youths*

| Description | Categories | Numbers | Percentage |
|-------------|------------------------------|---------|------------|
| Barriers | Individual-level barriers | 139 | 42.57 |
| | Community-level barriers | 124 | 49.79 |
| | Policy-level barriers | 54 | 21.68 |
| | Health system-level barriers | 199 | 79.91 |

Individual-level barriers. From the analysis of the study findings, it came to know that most of the adolescents do not utilize the facilities despite the impressive picture of awareness that became evident. Out of the total, 42.57% of youths said that they have a little knowledge of the YFRHS and the information made felt them ashamed as the most significant barrier of the YFRHS.

Table 4. *Individual-level barriers of YFHS reported by youths*

| Description | Categories | Number | Percentage |
|------------------------------------|---|--------|------------|
| Individual-level barriers n=139 | Lack of information about YFRHS | 39 | 24.84 |
| | Little knowledge of the availability of YFRHS | 106 | 42.57 |
| | Fear of being recognized by parents or people | 31 | 19.74 |
| | Not faith in treatment | 33 | 23.74 |
| | No money for the service | 27 | 19.42 |
| | Felt ashamed | 42 | 30.21 |

This study shows that the existing reasons of the youths are the barriers themselves to utilize SRH. Some of the FG participants said that the youths have insufficient knowledge and information about the SRH services and they have a great feeling of shyness and fears and the poor economic status of the youths are also some personal-level barriers.

There is an insufficient knowledge found about SRH services amongst the youths' (The married male youth facilitator- FGD).

There is education literacy but not the health literacy for the youths. So, they are still illiterate about the SRH services (The married female youth facilitators- FGD).

The service provider is a male as a result the girl feels shy (Medical Officer- FGD).

They laugh and shy while there is a demonstration of the use of male condoms. They ask several SRH related questions like can we do the condom demonstration session on a real penis... (Female youth facilitator- FGD).

It will be best to provide economic support like as the government provides an incentive to the pregnant women (The unmarried female youth facilitator).

Health system-level barriers. Availability, affordability, client-provider interaction, education materials available, conveniency of operating time/visiting day/ hour, the behavior of the health care provider, privacy and confidentiality maintain at the YFRHS are included in this section. According to quantitative data, two-third of the respondents claimed that the healthcare system constraints, regarding the YFRHS, were most significance barriers.

Table 5. Health system-level barriers o YFHS reported by youths

| Description | Category | Number | Percentage |
|------------------------------------|---|--------|------------|
| Health system-level barriers (199) | Operational Barriers | 50 | 25.12 |
| | Inconvenient service | 31 | 15.57 |
| | High cost | 46 | 23.11 |
| | Time constraint | 24 | 12.06 |
| | Lack of privacy | 18 | 9.04 |
| | Unwelcoming/judgmental behavior | 43 | 21.60 |
| | poor quality service, infrastructure and facilities | 119 | 59.79 |
| | Providers are older and opposite gender | 20 | 10.05 |

Table 5 showed that poor quality service and poor infrastructure and facilities (59.79%) were noted by youths as an important barrier. Only a few (10.05%) youths have agreed that the opposite-sex and old person as a service provider also was a major barrier for the utilization of the YFRHS.

Most of the FG participants stated that the poor quality and inappropriate facilities, high cost of the services, misbehaviour, time-consuming and lengthy processes are the main barriers for the YFRHS. Furthermore, participants said no YFRHS facilities available in the school. The above-mentioned results showed that the limited services are available for the youths in the study location.

There is no service available for sexual health diseases, abortion and reproductive health at the community level except the temporary family planning such as a condom, Dipo (Married male youth facilitator-FGD).

Offering separate space and special time is needed during client-provider interaction (FRESH Tools of Effective School Health, 2004). Three out of 12 participants of the FG quoted that others could see them from outside during the consultation with the providers. Two participants said that the support staffs or other visitors present in the room during the consultation. This fact raises the question on ensure of privacy and confidentiality. Qualitative data showed the low availability of educational materials in health institutions and schools. The youth desire to learn sensitive issues on their own through sorts of materials (FRESH Tools, 2004). The majority of FG participants reported that some visual materials on SRH are available in the waiting room but the recreational activities, peer-discussions and audio-video materials are not available in a health institution.

We only provided some text-books for the reading related to SRH to adolescents for information (Unmarried male youth facilitator, age 23-FGD).

The SRH services must be provided free or at a low cost, including credit and flexible payment options (FRESH Tools of Effective School Health, 2004). The majority of the FGD participants pronounced that the marginalized youth group cannot afford the cost of the SRH services.

One of the unmarried youth female facilitators said that *the treatment process of one service provider is not acceptable to the other service providers. Re-treatment from the beginning becomes costly. So, the service seems to be business-oriented rather than the service-oriented* (age 19, Surkhet, FPAN).

The opening time of health institutions should be flexible and conveniently accessible (late afternoons, evenings and weekends) (FRESH Tools, 2004). Most of the FG participants claimed that working hours, visiting day and operating time of the health service centre was very inconvenient. All the FG participants said that health services are operated from Sunday to Friday from 10.00 am to 4.00 pm daily in the government organization. The opening time of schools and health organizations are the same while young people need speedy care, those may have to leave their classes for the treatment or consultation. There is no provision of any alternative way out for this and a separate time arrangement system for the youths. Due to such an operating system, youths from 9 and 10 classes cannot conveniently attend the service.

Health centres open from 10:00 am to 3:00 pm and for 4 to 6 days in a week (Married Female volunteer, age 32- FGD).

Young people must feel at comfort and have no worries about talking about their needs and concerns. The service providers and staffs must have interpersonal skills, non-judgmental and effective counselling and communication skills with confidentiality (FRESH Tools, 2004). All participants of the FG have commonly complained that the service providers did not pay attention to youth concerns, they always present with judgmental behaviour. All members of FG described that youths assert for unfriendly and judgmental behaviour of service providers. Most have reported that they would be instructed and asked unnecessary questions with proud nature and dominating style. They try to arouse an embarrassed feeling for being sexually active and would think that they had STI or pregnant.

Providers do not motivate the youths to come at the clinic. The clinic does not create the environment to attract the youths. The clinic should make a policy to visit the clinic, again and again, as a businessman does (Unmarried Female youth facilitator, age 19-FGD).

There is a lack of youth-friendly behaviour in government health services. The service providers are very aggressive (Married male youth facilitator, age 32-FGD).

We have an alternative way to provide the services (A medical Officer-FGD).

Young people must feel confident that their concerns will not be spoken to anyone (FRESH Tools, 2004). All participants of FG indicated that young people usually come to providers with huge fear and worries about their privacy and confidentiality. Most of them highlighted that they worry of spilling out the information about their health issues, for a case, they had attended the SRH services and anxious of being stigmatised or provoked and being famous within the society and the friends. The 3 out of 12 FG participants stated that in such a case a whole family will be blamed and the girl may get a bad name within the society. Most of the FG participants claimed that the health service providers do not show any respect to youths during the visit. They always misbehave and dominate the poor and marginalized youths and rather think of bad smelling and dirty guys. The majority of them stated that the waiting time

to meet the service providers was too long and the interactions were too short. It indicates that privacy and confidentiality are under-maintained by service providers.

While service providers see backward and poor youths with the dirty clothes who came to take service were misbehaved by saying bad smelling and dirty guys by the providers (Unmarried Female youth facilitator, age 19-FGD).

They have to be in the queue to take the service (Unmarried male youth facilitator, age 20-FGD).

Community-level barriers. The majority of youths (51.61%) reported that poverty was the most significant barrier. Likewise, lack of education and information, fear and shyness, etc. regarding SRH were the other most important barriers to utilize the YFRHS (see table 6).

Table 6. Community level barriers of YFRS reported by youths

| Description | Category | Num | Percentage |
|-------------------------------------|--|-----|------------|
| Community level barriers (n=124) | Lack of awareness | 57 | 45.96 |
| | Poverty | 64 | 51.61 |
| | Parental negative attitude and beliefs | 27 | 21.77 |
| | Lack of transportation | 20 | 16.13 |
| | Need to travel due to long distance | 25 | 20.16 |
| | Unfavorable Climate | 27 | 21.77 |

The majority of FG participants expressed that the lack of awareness of communities, existing socio-cultural and religious beliefs, shyness of local people about the SRH issues, lack the focus of the media on SRH related issues are the main community-level barriers.

All of the local radio, FM and newspapers mainly focus on the entertaining programs. It is good to run the YFRHS activities incorporating with the entertaining programs in local media and social networks regularly (unmarried female youth facilitator, age 19-FGD).

The local and famous local network and radio programs feel uneasy and shy to broadcast such services (a medical officer-FGD).

Policy-level barriers. Table 7 also displays the various policy-related barriers of the YFRHS. Most of the youths (61.11%) suggested whereas poor implementation of the policy. The majority (53.70%) suggested as lack of youth participation in the policy construction is the main policy-level barriers of YFHS.

Table 7. Policy level barriers of YFHS reported by youths

| Description | Category | Num | Percentage |
|----------------------------------|--|-----|------------|
| Policy-level Barriers (n= 54) | Lack of contextualization | 21 | 38.88 |
| | Lack of youth participation | 29 | 53.70 |
| | Lack of parental and community participation | 11 | 20.37 |
| | Lack of supervision | 9 | 16.66 |
| | Poor implementation | 33 | 61.11 |

Most FG participants pointed out that the target people have not participated in the policy formation. Three participants have blamed that there is no strong policy to include the SRH services in the school curriculum. A female participant stated that there is no policy for the

same-sex service providers and some male facilitators also had an agreement with these views. All have strongly claimed the involvement of youths is lacking in the program design and formulation of the policy at the national level which will enhance their ownership for the program. The FG participants emphasized on identifying the needs and the problem of youths as a fundamental task for designing policy for the youth-friendly services which seemed to be massively lacking.

All the health education teachers of school should be trained on YFRHS and included it in the school curriculum and ECA program (A married male youth facilitator, age 32, FGD).

Awareness about available services should be advertised in the local communication network and at the same time, attitudes and behavior between marginalized service users have to be highlighted. The service provider must be from the same sex (A medical officer-FGD).

Discussion

This study showed that only one-third (36.94%) of youths utilized YFRH service. This is slightly higher than the figure (24.7%) demonstrated in the study conducted by Napit et al., (2020) in Bhaktapur Nepal. Another similar study showed that almost half of the AFHS levels of adolescents utilized the services which were not merely low but completely declined (Pandey, 2019). In Ethiopia, the low level of RH service utilization amongst adolescents is also documented (Tlaye, Belete, Demelew, Gitu, & Astawesegn, 2018). However, this study showed that the utilization of AFS service by a female is likely to be more than the Ethiopian study documented that of males. This is the disagreement with the study conducted by Teijlingen, Simkada & Acharya (2012). They further revealed that the service utilization proportion was lower in females than males. The present study showed that older youth in the 20-24 years old age-group utilized the YFRHS more than by those who were younger because of youths, aged between 20-24 years; the former age group are matured. Consequently, they are free from parental control and also are sexually active, hence, the reason for a higher likelihood of being utilized of the YFHS. This study has also revealed that educated youths are more likely to utilize youth-friendly reproductive health services as they possess a better understanding of their health requirements. It is also found that lack of understanding of SRH service may discourage young people from using service and therefore, health education is a major component to convey health information and which, in turn, can increase the utilization of services (Khanal, 2016).

The findings of this mixed-methods study provide insights into multilevel barriers of the YFH services related to the individual-level, health-system level, community-level and the policy level amongst the school-going youths in the study area. The youths had the individual-level barrier that restricted them from utilizing the YFH services. According to the AYSRH Toolkit (n.d.), lack of access to information about what SRH services are available, myths and misconceptions, and limited self-efficacy are found under the individual-level barriers. The findings of the current study showed that the lack of knowledge and information, fear and shyness about the AFHS and low-economic-status were the foremost barriers to service utilization by the youths at the individual-level.

A study conducted by Kennedy et al. (2013) in Vanuatu and Regmi, Teijlingen, Simkhada, & Acharya (2010) found similar that a lack of knowledge about SRH which, in turn, lead to poor SRH service-utilizations. Napitet et al. (2020) found that more than half (56.7%) of the respondents felt fear of being seen as getting SRH services. Shyness and fear also restrict youth to utilizing the SRH services. Another study conducted by Abuosi & Anaba (2019) in Ghana also found that the fear of not being welcomed by health service providers, the lack of information and the financial challenges also discouraged them from accessing the SRH services.

The current study further highlighted another barrier to the utilization of the YFS. This barrier includes the health system factors such as a lack of availability of service, lack of interactions between the service providers and the patients' cost, education materials available, affordability, inconvenient service operating time, unfriendly behaviors of the service providers and poor privacy and confidentiality systems. A study carried out by Abuosi & Anaba (2019) in Ghana demonstrated that the youth are being disrespected by the health-service-providers having negative attitudes. They judged youth girls negatively and called them bad girls (Kennedy et al., 2013). The present study also found that the operating time of the service center is not convenient mainly for students of classes 9 and 10. Teijlingen, Simkhada & Acharya (2012) reported that about one-third of urban and rural youths had abandoned the school to access reproductive services. A study that was conducted in an urban area of Nepal by Bam et al. (2015) complained that a lack of confidential services was the biggest barrier. Mbeba et al. (2012) showed that the services were difficult to access due to the lack of confidentiality maintain of the service providers. The findings of the present study suggested an urgent need that supports the rights of adolescents to the confidential practice of SRH services which are sensitive to the local culture and religion.

Community-level factors have vital roles in the utilization of AFS (Napit et al., 2020). This study highlighted poverty as a crucial barrier. Likewise, lack of education, fear and shyness in the community, negative parental attitudes and religious-beliefs and socio-cultural norms are the main constraints of YFS at the community level. A study stated that the majority of the youth fear of sharing their SRH concerns with their parents and others (Tamang, Tamang, Nepal & Adhikari, 2006) due to restricted socio-cultural norms and taboo which have made a barrier to the utilization of these services (Napit et al., 2020). Similarly, a school-based study conducted in Bhaktapur in 2015 revealed that the closer distance, the higher utilization of the services (Bam et al., 2015). Young girls were excessively affected by such attitudes, particularly in rural settings. Concerning this, socio-cultural constraints have contributed to a fear of consequences from the parents and community people. These may hinder for further development of the SRH services (UNFPA, UNICEF & the Government of Nepal, 2015). The present study mentioned it as one of the foremost challenging barriers to increasing the ASRH programme at the community level and however, giving these services to girls are indeed more challenging. So, youths are reluctant to seek the RH services.

The current study also identified the policy-related barriers of YFRS. It includes proper rules, regulations, policies, consents, distance and costs of the services long wait times for the services, inconvenient opening times and poor privacy and confidentiality system (AYSRH

Toolkit, n.d.). This study suggested poor implementation of the policy and poor access by the youth policy construction as the key barriers. Similarly, the study identified the other policy-related barriers like lack of contextualization of policy, lack of parental and community participation and poor supervision system. Proper rules and regulations including appropriate guidelines, policies and actions are needed to improve access for the marginalized and underserved young population. Lack of clarity concerning the informed-consent and confidentiality for young adolescents are existed (UNFPA, UNICEF & Government of Nepal, 2015). The national policy concerning the involvement of men in the SRH did not take into account the social and cultural expectations which they faced (Gombachika, et al., 2012). It is further revealed that to promote the use of YFRHs, young health policy is needed (Khanal, 2018) and needs to incorporate adolescent-friendly health services in all the health institutions under its policy. It is yet to be integrated into education curricula and policy (Pandey, 2019). The government should exercise for the accountability and responsibility to run such programs targeting for youths (The Himalayan Times, 2017).

There is a need to formulate the policy on a central, provincial and local level. The present study provides a foundation for a better understanding of young men's use of SRH services. The findings of this study discuss and provide useful information that will support to the health-service providers, policy-makers, donor-agencies and the academicians/planners to understand a real scenario and shortfalls of YFRS. These extracted scenarios from this study will help to understand the science of SRH, review and revise the existing policy and design the appropriate strategy on the YFRHS.

Despite some strength, this study has a few limitations. Due to the limit of time and resources, the study only selected four secondary schools which are located in the Surkhet district. Similarly, the focus group discussion was used to collect qualitative data. It is felt that it was also necessary to have an in-depth interview. The result was, therefore, insufficient for defining distinctive patterns of the problems. This study was also limited to school-going youths of urban areas of the Surkhet valley and, therefore, may not be sufficient to generalize to all youths of rural areas in Nepal.

Conclusion

This study reports that school-going-youths do not have appropriate utilization of the YFHS due to multi-layered barriers. This mixed-method study presents the multi-level barriers over the whole socio-ecological arena such as an individual, health system, community and policy level that discourage to utilize YFRHS among the respondents. Among the barriers, health system-level affects mostly to restrict the services. Multi-level interventions and supports are, therefore, required to increase the YFSRH utilization and advance concerns for school-going-youths and adolescents.

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Knowledge and Use of Emergency Contraceptive Pills among Bachelor's Level Female Students of Kathmandu Valley

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Abstract

Emergency Contraceptive Pill (ECP) is used for preventing pregnancy after having unprotected sexual intercourse, contraceptive failure or forced sex. The use of ECP within 120 hours of sexual intercourse could prevent unwanted pregnancy and its adverse effects particularly unintended childbirth and unsafe abortion. The study, therefore, aimed to assess knowledge and use of emergency contraceptives among Bachelors level female students from Kathmandu Valley. A descriptive cross-sectional study was undertaken from August to November 2017 among 347 female students who were studying at the Bachelors's level. A random sampling technique was used to select study participants and a structured self-administered questionnaire was used to assess the knowledge and use of ECP after securing informed consent. Epi data and SPSS version 22 were used for data processing and analysis. The mean age of the female students was 21.5 years. Overall, 91.4% of the respondents had ever heard about emergency contraceptives. The main sources of information were radio or television, the internet and newspapers. About 4.6% of the undergraduate female students used ECP. Age, marital status, use of contraceptives and knowledge of ECP used within 72 hours were significantly associated with use of ECP. Although the findings of this study showed a high prevalence of knowledge among respondents, the improvement of female students' knowledge on specific details of ECP and its advantages/disadvantages and timely utilization needs to be considered for any future awareness programmes.

Keywords: Emergency contraceptive, Knowledge, Use, Bachelor's level female student

Introduction

Emergency contraceptive (EC) is a method of preventing unwanted pregnancy after a female passage on unprotected sexual intercourse, contraceptive method failure or forced to have sex against her will. Unprotected sex may result from a lack of knowledge about access to contraception as well. ECP is also known as "morning-after" or "post-coital" contraceptive (Nibabe & Mgutshini, 2014). ECP can prevent up to over 95% of pregnancies when taken within 5 days after intercourse and when inserted within 120 hours of unprotected intercourse. It is a copper-bearing intrauterine device (IUD) which is more than 99% effective in preventing pregnancy. Emergency contraceptive seems to be more effective when used within 72 hours of unprotected intercourse. However, recent researches have shown that it is effective within 120 hours (Mahmood & Nisar, 2012). Emergency contraceptive is not recommended as a regular family planning method, it is used occasionally. The effectiveness of emergency contraceptives reduces with a lapse of time.

There were 213 million pregnancies that occurred in 2012, up slightly from 211 million in 2008. Eighty-five million pregnancies, representing 40 percent of all pregnancies, were unintended in 2012. Of these, 50 percent ended in abortion, 13 percent ended in miscarriage, and 38 percent resulted in an unplanned birth (Sedgh, Singh, & Hussain, 2014). In South Asia, unwanted pregnancy is one of the leading causes of maternal mortality and morbidity (Adhikari, 2009). It is estimated that among total pregnancy in South and South-East Asia, almost 1/3 of pregnancies are unplanned or unintended. It is 35% in Pakistan, 30% in Bangladesh, 21% in India and 35% in Nepal. These large numbers of unwanted pregnancies in South and South-East Asia are attributed to the low rate of contraceptive use, contraceptive method failure and high unmet need for contraceptive. Between 8 to 30 million pregnancies each year result from contraceptive failure either due to inconsistent or incorrect use of contraceptive methods or failure of the method itself (Mahmood & Nisar, 2012).

In Nepal, as per the Nepal Demographic Health Survey 2006, only 0.1% women of the reproductive age group ever use an emergency contraceptive, and the knowledge of emergency contraceptives among women of the same age group is estimated to be 28.8% (Ministry of Health - MOH/Nepal; New ERA/Nepal; ICF, 2017). Knowledge about emergency contraception and the lactational amenorrhea method (LAM) is relatively poor, with only 36% of women and 55% of men have heard of emergency contraception and 25% of women and 15% of men have heard of LAM (Ministry of Health and Population - MOHP/Nepal; New ERA/Nepal; ICF International, 2012).

One study in Nepal showed that more than one third (35%) of all pregnancies and 41% of current pregnancy among currently pregnant women were unintended and the prevalence of premarital sex was 39% among college males and 12% among college females. The study also found that large proportions of college students who were studying in Kathmandu valley (43% male and 55% female) did not use a condom during their first sexual intercourse (Adhikari, 2009).

The Universal Declaration of International Conference on Population and Development (ICPD) has recommended governments to ensure women's empowerment. One of the key factors of women's empowerment is to ensure the right of controlling the use of emergency contraceptives and protecting women from unwanted birth. There is also evidence that emergency contraceptives can decrease the rate of unwanted pregnancy thereby reducing the need for an abortion and the negative maternal health consequences associated with an unwanted pregnancy (Nottola, Belachew, Yimenu, & Gebresillassie, 2011).

However, only a few researches have been conducted in Kathmandu among young female students. The need for the study was important because of the severe outcomes faced by young females while having unwanted pregnancies.

Methods

Settings and Study Design

The study was conducted in constituent campuses and affiliated campuses to Tribhuvan University, Kathmandu and Purbanchal University, Biratnagar of Nepal. The study used a descriptive cross-sectional research design.

Study Participants and Sampling Technique

Bachelors level female students from two public and two private colleges were included in the study. The sample size was calculated using a single proportion formula calculating 95% confidence interval, 5% margin of error and 8% knowledge of ECP (Adhikari, 2009). The non-response rate was assumed by 10%. The final calculated sample size was 368 after adding a 10% non-response rate. The study analyzed data obtained from only 347 respondents.

A simple random sampling technique was used to collect the data. Female students from randomly selected classes were enrolled in the study. More than one class was taken when the required number of samples was not obtained. Study participants were selected in equal numbers as per the total number of female students of the respective colleges.

Ethical Considerations

The study was fully confidential and anonymous. Written informed consent was taken before participation in the study. The objectives were explained clearly to the respondents. The privacy of participants and the confidentiality of the data was strictly maintained.

Data Collection and Analysis

A structured self-administered questionnaire was used for data collection. The questionnaire was developed based on the literature review and conceptual framework developed for the study. The questionnaire was first developed in the English language and translated into the Nepali language. For validation, the questionnaire was pre-tested in similar setups before the actual data collection was commenced.

Data entry, editing, coding and cleaning were done using Epi data and the data were analyzed using IBM SPSS ver. 22. The data obtained on knowledge and use of ECP was described on the basis of demographic and social characteristics of the respondents. A Chi-square test was used to find out the association between dependent and independent variables of the study.

Results

Socio-demographic Characteristics of the Respondents

Table 1 presents the socio-demographic characteristics of the respondents. In total 347 female students of Bachelors's level were included in the study resulting to a response rate of 100%. The mean age was 21.5 years with minimum and maximum age 17 and 34 years respectively. Most of the students (n=246, or 70.9%) students were in the age group 20-24 years and 67 (19.3%) students belonged to age 15-19 years. The majority of the female students (n=312, or 89.9%) were unmarried whereas 31 (8.9%) were married and 4 (1.2%) were living with their boyfriends/partners. Out of the total, 294 (84.7%) were Hindus followed by Buddhists 43 (12.4%) and Christians 9 (2.6%). Most of the respondents (n=304, or 87.6%) had an urban background and the remaining 43 (12.4%) had rural backgrounds. Among total respondents, 178 (51.3%) were from government colleges and 169 (48.7%) were from private colleges respectively. Most of the students studied in the third year (n=147, or 42.4%). Most of the respondents (n=191, or 55.0%) were from ethnic group Brahmins/Chhetris followed by Janajatis (n=130, or 37.2%). Similarly, 213 female students (61.4%) were from outside

Kathmandu, many were living in rented room or apartment (n= 176, or 50.7%) and sharing accommodation with family (n= 206, or 59.4%).

Table I. Socio-demographic characteristics of respondents

| Variable | Category | No. (n=347) | Percent (%) |
|----------------|----------------------------------|-------------------|-------------|
| Age | 15-19 years | 67 | 19.3 |
| | 20-24 years | 246 | 70.9 |
| | 25 years and above | 34 | 9.8 |
| Marital status | Unmarried | 312 | 89.9 |
| | Married | 31 | 8.9 |
| | Living with boyfriend/partner | 4 | 1.2 |
| Grade level | First year | 48 | 13.8 |
| | Second year | 77 | 22.2 |
| | Third year | 147 | 42.4 |
| | Fourth Year | 75 | 21.6 |
| College type | Government | 178 | 51.3 |
| | Private | 169 | 48.7 |
| Religion | Hindu | 294 | 84.7 |
| | Muslim | 1 | 0.3 |
| | Buddhist | 43 | 12.4 |
| | Christian | 9 | 2.6 |
| Ethnicity | Janajati | 130 | 37.2 |
| | Dalit | 11 | 3.2 |
| | Brahmin/Chhetri | 191 | 55.0 |
| | Madhesi | 12 | 3.5 |
| | Muslim | 3 | 0.9 |
| | Residence | Own house | 171 |
| | Rent or Apartment | 176 | 50.7 |
| Accommodation | Family | 206 | 59.4 |
| | Brothers/Sisters | 80 | 23.1 |
| | Others relatives | 9 | 2.6 |
| | Boyfriend | 3 | 0.9 |
| | Hostel | 37 | 10.7 |
| | Husband | 12 | 3.5 |
| | Permanent Address | Outside Kathmandu | 213 |
| | Inside Kathmandu and Surrounding | 134 | 38.6 |
| Living area | Rural | 43 | 12.4 |
| | Urban | 304 | 87.6 |

Knowledge of Participants about Emergency Contraceptive Pills

As shown in Table 2, out of the total female students who participated in the study, 317 (91.4%) had ever heard about EC in their lives. Among 317 respondents who knew about ECP, 88 (27.2%) mentioned that they didn't know about the efficacy of Emergency Contraceptive. Of those 317 students, 88 (27.2%) responded that ECP terminates a pregnancy in case of pregnancy whereas 169 (52.3%) participants responded that ECPs could be bought without medical prescription. A majority of the participants (n=146, or 45.2%) didn't know that ECPs could be more effective when taken immediately and 58 (18%) of them had a misconception that ECP could protect from STIs. Moreover, 175 (54.2%) students reported that the recommended time to take emergency contraceptives is within 72 hours of unprotected sexual intercourse and 172 (53.3%) reported that the recommended dose for ECPs is one dose whereas 54 (16.7%) respondents mentioned two doses were necessary for protection. More than half of them (57%) female students didn't know about the correct time interval

between the doses of ECP, while one-fifth (22.9% and 20.1%) mentioned that recommended time intervals between the doses for ECP are 12 hours and 24 hours respectively (Table 2).

Table 2. Knowledge of ECP among bachelors level female students

| Knowledge indicators | No. (n=347) | Percent (%) |
|---|-------------|-------------|
| Ever heard about emergency contraceptive | | |
| Yes | 317 | 91.4 |
| No | 24 | 6.9 |
| Don't Know | 6 | 1.7 |
| Source of ECP Information | | |
| TV/radio | 232 | 72.0 |
| Relatives | 50 | 15.5 |
| Boyfriend/Husband | 44 | 13.7 |
| Female friends | 110 | 34.2 |
| Internet | 211 | 65.5 |
| Magazines/Newspaper | 134 | 41.6 |
| Healthcare Providers | 104 | 32.3 |
| At campus | 124 | 38.5 |
| Others | 5 | 1.6 |
| Perception of Students on ECP whether it is 100% effective | | |
| Yes | 113 | 35.0 |
| No | 88 | 27.2 |
| Don't know | 122 | 37.8 |
| ECP terminates pregnancy, if a woman is pregnant | | |
| Yes | 88 | 27.2 |
| No | 96 | 29.7 |
| Don't know | 139 | 43.0 |
| Does it need medical prescription to buy ECP? | | |
| Yes | 43 | 13.3 |
| No | 169 | 53.3 |
| Don't know | 111 | 34.4 |
| ECP are more effective when taken immediately | | |
| Yes | 142 | 44.0 |
| No | 35 | 10.8 |
| Don't know | 146 | 45.2 |
| Does ECP provide protection from STIs? | | |
| Yes | 58 | 18.0 |
| No | 143 | 44.3 |
| Don't know | 122 | 37.8 |
| Recommended time to take ECP | | |
| Within 24 hour after sex | 36 | 11.1 |
| Within 48 hour after sex | 5 | 1.5 |
| Within 72 hour after sex | 175 | 54.2 |
| Don't know | 107 | 33.1 |
| Recommended dose for ECP | | |
| One dose | 172 | 53.3 |
| Two dose | 54 | 16.7 |
| Three dose | 19 | 5.9 |
| Four dose | 14 | 4.3 |
| Don't know | 64 | 19.8 |
| Recommended time between dose of ECP | | |
| 12 hour | 74 | 22.9 |
| 24 hour | 65 | 20.1 |
| Don't know | 184 | 57.0 |

Abbreviations: STI, Sexually Transmitted Diseases

Use of Emergency Contraceptive Pills (ECP) among Female Students

Table 3 shows that out of 317 (91.4%) respondents ever heard of ECP, 16 (4.6%) had ever used ECP. Out of which 10 (62.5%) had used it once, two (12.5%) had used it twice and the remaining four had used more than two times in the past six months preceding the survey. Out of 16 ECP users, 10 (62.5%) had used ECP within 30 days of the interview. Out of the total users, 5 (31.3%) were recommended by a boyfriend to use ECPs and self-use was also reported by a similar proportion of respondents.

Table 3. Practice of emergency contraceptive pills among Female Students

| ECP Use | No. (n=347) | Percent (%) |
|---|-------------|-------------|
| Ever used ECP | | |
| Yes | 16 | 4.6 |
| No | 131 | 95.4 |
| Frequency of ECP use in past six months | | |
| Once | 11 | 68.8 |
| Twice | 2 | 12.5 |
| Thrice | 1 | 6.3 |
| Four times | 1 | 6.3 |
| Seven times | 1 | 6.3 |
| Use of ECP last time | | |
| Within 30 days | 10 | 62.5 |
| After 30 days | 6 | 37.5 |
| Who Suggest to use ECP? | | |
| Girlfriend | 2 | 12.5 |
| Boyfriend | 5 | 31.3 |
| Health providers | 1 | 6.3 |
| Self | 5 | 31.3 |
| Others | 3 | 18.8 |
| Reason to use ECP | | |
| Time of menstruation was miscalculated | 5 | 31.3 |
| Condom broke | 1 | 6.3 |
| Forgotten regular pills | 1 | 6.3 |
| Withdrawal failed | 5 | 31.3 |
| Didn't like to use condom | 4 | 25.0 |
| Challenges faced by respondents to get ECP | | |
| Expensive price | 3 | 21.4 |
| Fear of stigma | 7 | 50.0 |
| Lack of knowledge | 5 | 35.7 |
| Types of ECP used by respondents | | |
| Progesterone only pills | 1 | 6.3 |
| Combined (Estrogen + Progesterone) | 2 | 12.5 |
| Both combined oral contraceptive and progesterone-only pills | 1 | 6.3 |
| Don't know | 12 | 75.0 |
| Known brand name of ECP by respondents | | |
| Yes | 8 | 50 |
| No | 8 | 50 |
| Time interval between recent sexual intercourse and ECP taken by respondents | | |
| Within 24 hours | 4 | 25.0 |
| Within 48 hours | 1 | 6.3 |
| Within 72 hours | 9 | 56.3 |
| Don't know | 2 | 12.5 |
| Doses of ECP taken by the respondents | | |
| Single dose | 10 | 62.2 |

| ECP Use | No. (n=347) | Percent (%) |
|---|-------------|-------------|
| Double dose | 2 | 12.5 |
| Triple dose | 2 | 12.5 |
| Don't know | 2 | 12.5 |
| Time interval between consecutive ECP taken by respondents | | |
| 12 hour apart | 5 | 2.4 |
| 24 hour part | 2 | 3.3 |
| Don't know | 9 | 2.9 |

Equal percentage (n=5, or 31.3%) of respondents reported miscalculation of menstruation and withdrawal failure as the reason for using ECP. Seven (46.7%) respondents suffered through fear of stigma for getting ECPs and five (33.3%) others faced challenges as lack of knowledge. Most of the respondents (n=12, or 75.0%) did not know about the types of ECPs they used and two respondents (12.5%) had used combined estrogen and progesterone pills. The mean and median of ECP use were 6.5 months and 3 months respectively.

Association between Socio-demographic Variables and Use of Emergency Contraceptives Pills

Table 4 presents data on the association between socio-demographic variables and use of ECP. A Chi-square test was performed to access the association between socio-demographic factors with the practice of ECPs.

Table 4. Association between socio-demographic variables and use of ECP

| Socio-demographic Characteristics | Use of ECP | | P-value |
|-----------------------------------|-------------------|--------------------|------------------|
| | Yes n=16(4.6%) | No n=331(95.4%) | |
| 1. Age group | | | |
| 15-19 years | 1(1.5%) | 66(98.5%) | |
| 20-24 years | 8(3.3%) | 238(96.7%) | <0.001 |
| 25 years and above | 7(20.6%) | 27(79.4%) | |
| 2. Marital status | | | |
| Unmarried | 8(2.6%) | 304(97.4%) | <0.001 |
| Married | 8(22.9%) | 27(77.1%) | |
| 3. Religion | | | |
| Hindu | 14(4.8%) | 278(95.2%) | 0.707 |
| Non Hindu | 2(2.4%) | 53(96.4%) | |
| 4. Ethnicity | | | |
| Janajati/Dalit | 7(5.0%) | 134(95.0%) | 0.795 |
| Brahmin/Chhetri | 9(4.4%) | 197(95.6%) | |
| 5. Place of residence | | | |
| Urban | 3(7.0%) | 40(93.0%) | 0.429 |
| Rural | 13(4.3%) | 291(95.7%) | |
| 6. Using Contraceptives | | | |
| Yes | 9(42.9%) | 12(57.1%) | <0.001 |
| No | 7(2.1%) | 319(97.9%) | |
| 7. Residence | | | |
| Own house | 5(2.9%) | 166(97.1%) | 0.140 |
| Rent or apartment | 11(0.5%) | 165(93.8%) | |
| 8. Discussion with partner | | | |
| Yes | 8(61.5%) | 5(38.5%) | 0.431 |
| No | 6(46.2%) | 7(53.8%) | |
| 9. Satisfaction with ECP | | | |
| Yes | 9(100%) | 0(0%) | 0.086 |

| Socio-demographic Characteristics | Use of ECP | | P-value |
|---|-------------------|--------------------|--------------|
| | Yes n=16(4.6%) | No n=331(95.4%) | |
| No | 5(71.4%) | 2(28.6%) | |
| 10.Knowledge having ECP used within 72 hours | | | |
| Yes | 12(6.9%) | 163(93.1%) | 0.044 |
| No | 4(2.3%) | 168(97.7%) | |
| 11.Perception on Effects | | | |
| Yes | 13(5.9%) | 208(94.1%) | 0.135 |
| No | 3(2.4%) | 123(97.6%) | |
| Education Stream | | | |
| Humanities/Commerce | 6(3.4%) | 169(96.6%) | 0.289 |
| Science/Education | 10(5.8%) | 162(94.2%) | |
| 12.Types of college | | | |
| Government | 6(3.4%) | 172(96.6%) | 0.258 |
| Private | 10(5.9%) | 159(94.1%) | |

No statistically significant association was observed between the use of ECP and socio-demographic factor like religion, ethnicity, place of residence (rural/urban), residence (own house/apartment), types of college, discussion with a partner, satisfaction with ECPs and perception on effects of ECP. However, socio-demographic factors like age group ($P < 0.001$), marital status ($P < 0.001$), use of contraceptives ($P < 0.001$) and knowledge having ECP use within 72 hours ($P = 0.044$) were found to be significantly associated with the respondents' use of ECPs.

Discussion

Each year about 250 million pregnancies occur globally, one-third of them are unintended or unplanned, and 22% of them undergo induced abortion (Adhikari, 2009). Knowledge of emergency contraception is crucial since women must know they can prevent pregnancy after intercourse in order to seek out treatment. As rates of unwanted pregnancy vary in different countries and population groups, the need for emergency contraception is critical worldwide.

The results of this study showed that nine out of ten (91.4%) Bachelor's level female students had ever heard about emergency contraceptives in their lives. The finding is similar to the study done in Mekelle of Northern Ethiopia which showed about 90.7% of the respondents had heard about emergency contraceptives (Abrha, et al., 2014). Another study that looked at factors affecting awareness of emergency contraception among college students in Kathmandu, Nepal shows 68% had heard about emergency contraceptives (Adhikari, 2009). This difference could be due to the effect of time-dependent factors such as media expansion and access to different reproductive health services.

The main sources of information about ECP were reported as radio or television (72%), internet (65.5%) and newspaper (41.6%). The mass media as a source of information was higher compared to a study conducted in Seto Semero High School, Jimma Town, South West Ethiopia which showed that major source of information was television and radio (35.6%), followed by a health professional (25.2%) and friends (15.7%) (Tesfa, et al., 2015). The possible reasons may be due to higher access to mass media in the campuses as in this study shows higher exposure of female students to media. In the present study, the proportion of

participants who correctly knew the recommended time (within 72 hours) for emergency contraception was 54.2%, similar to the study findings conducted in West Ethiopia (49.3%) (Likisa, et al., 2013). Meanwhile, nearly half (45.2%) of them didn't know that ECPs could be more effective when taken immediately, and 18% had a misconception that ECP provides protection against STIs.

The prevalence of ECP use was found to be very low. Only 4.6% had ever used ECPs. This is low when compared to a study conducted in Nigeria which shows the prevalence of ECP use 21.7% (Wright, Fabamwo, & Akinola, 2014). Another study conducted in Nairobi of Kenya and Lagos of Nigeria shows 18% of the women interviewed in Nairobi and 17% in Lagos had ever used emergency contraceptive pills (Chin-Quee, L'Engle, Otterness, Mercer, & Chen, 2014).

The difference in study findings might be due to the study conducted in the non-residential area of Nigeria. In contrast, the prevalence of use of ECP in the current study is similar with the studies conducted in female college students in Addis Ababa, Ethiopia (10%) (Nibabe & Mgutshini, 2014). Out of total users, 62.5% had used once, 2 (12.5%) had used twice and the remaining had used more than two times in the past six months. Nearly one third (31.3%) were recommended to use ECPs by boyfriend and a similar proportion decided its use themselves. An equal percentage of respondents reported miscalculation of the onset of menstruation and withdrawal failure as the reasons behind using ECP (31.3%). Nearly half (46.7%) of the respondents reported fear of stigma in buying ECPs. Three-quarters (75 %) of the respondents did not know about the types of ECPs they used. The mean and median time of ECP use was reported 6.5 months and 3 months respectively.

Conclusion

Emergency contraceptives is the only option for preventing unwanted pregnancy after unprotected sexual intercourse. This study shows a small percentage of ECP users among Bachelors's level female students of a campus in Kathmandu valley. However, the majority of respondents in this study had heard about ECPs and had its knowledge. The present study has also documented that use of emergency contraception is affected by a range of personal characteristics including age and marital status, and knowledge of ECP use within 72 hours after intercourse.

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Disclosure

The authors report no conflicts of interest in this work.

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Teachers' and Parents' Perceptions on Eating Behaviour of Primary School Students: A Qualitative Study

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Abstract

This study explores the perceptions involved in the healthy eating behaviour of 1st, 2nd, and 3rd-grade students in a primary level community school in Nepal. A total, ten observations during mid-day meal and three focus group discussions were conducted among teachers and parents. Sixty students from grade one to three, five teachers and sixteen parents took part in the study. All the participating teachers and parents were engaged in dialogue conferences during focus groups and students' eating behaviours were observed by the teachers and parents during tiffin time throughout the study. Thematic-content analysis based on the qualitative approach was used on the collected data from the field notes during a series of participant observations and focus group discussions. It is found that the family norms and feeding culture around a child's domestic life have an active role in establishing and promoting healthy habits that persists throughout. It is also noted that parental food habits and feeding strategies are the most dominant determinants of children eating behaviour and food choices of mid-day meal during tiffin time at the school. It is recommended that parents and teachers should expose their children and students to a range of good food choices and acting as positive role models.

Keywords: Food choice, mid-day meal, green vegetables, parental choice, school children

Introduction

Community schools in Nepal are the best places for launching health promotion programmes because of the ability to reach significant target people. In the schools in Nepal, students stay about six to seven hours in six days a week. Schools, therefore, serve as a major part of their socialization and include with respect to modification of dietary behavior. Only very few community schools are aware of students taking healthy mid-day meal at the school and taking green and natural food items at home. Healthy eating behaviour in schools can foster positive attitudes and values among students (Ahmadi, Black, Velazquez, Chapman, & Veenstra, 2015; Tyrrell, Townshend, Adamson, & Lake, 2015). There is research-based evidence that school-based awareness programmes can be effective in promoting healthy eating habits among children (Loth, MacLehose, Larson, Berge, & Neumark-Sztainer, 2016). As a part of the school curriculum, nutrition education needs to be launched in the schools that aware and motivate students towards healthy eating habits. Eating locally available natural food items increase physical strength, positive lifestyle and good mental capacity of children (Loth et al., 2016; Pickett, Michaelson, & Davison, 2016). Tamiru, Argaw, Gerbaba, Nigussie, Ayana, & Belachew (2016) found that school-based nutrition education helps to improve the body mass index among the students. A recent study in Nepal also found that the implementation of healthy eating behavior was able to increase the number of students by decreasing the dropout rate

(Ahmadi et al., 2016). Decreasing drop outs enhances learning achievement among school level students.

The school-based nutrition programme is aimed at uplifting malnutrition and controlling obesity by consuming natural foodstuffs. These practices decrease the consumption of junk foods and help to develop healthy citizens in the future. Many studies show a significant reduction in their consumption of junk foods and the significant increase in the consumption of vegetables, but these effects were not sustained (Naidoo, Nyembezi, Thomas, Lachman, & Kagee, 2019; Schapiro, Green, Kaller, Brindis, Rodriguez, Alkebulan-Abakah, & Chen, 2019). A major difficulty in promoting healthy eating among basic level students is that most of the school students find healthy eating unappealing (Lim, Lim, Teh, Kee, Khoo, Ganapathy, & Tee, 2017; Ronto, Ball, Pendergast, & Harris, 2016).

Students' eating habits are shaped by school education, the pattern of mid-day meal policy of the school and parental influences. Apart from preparing their meals, parents serve as role models in making dietary choices of children. School teachers have the authority to correct students' unbalanced nutritional habits such as taking junk foods and unhealthy dietary behaviour (Fleary, & Ettienne, 2019). Recent studies show that parents are more prone to unhealthy eating behaviour during peer social gatherings (Gutuskey, McCaughtry, Shen, Centeio, & Garn, 2016; Peltzer, & Pengpid, 2016). Similarly, the rules and regulations in the school are closely associated with students' dietary behaviour (Gutuskey et al., 2016). Advertisements in the mass media can influence how students perceive their food and availability in the market. Such perceptions can lead to unhealthy dietary patterns and make students more prone to eating disorders as a result.

It is an urgent need to assist healthy behaviours among primary level students in Nepal as they are more prone to the victim of junk food resulting ill-health. It is a great necessity to develop good food choices among parents and school-going children (Hart, Herriot, Bishop, & Truby, 2003). Behavioural modification among teachers, students and parents is necessary which are influential factors making children healthy. School education is necessary to impact upon children's developing food behaviours and attitudes through the behaviours they model and reinforce (Perry et al., 1988; Campbell & Crawford, 2001), the opinions they express, the food opportunities they control (Robinson, 2000) and the information they impart (Anliker et al., 1990; Gibson et al., 1998). In order to modification of the habit of children, parents must, however, possess the understanding and motivation required to assimilate dietary guidelines (Southgate, 1992).

Given the importance of adopting healthy mid-day meal practices from an early age and given the crucial role of schools in students' socialization, many school-based health programmes have been designed to promote healthy dietary practices. Moreover, most of the schools-based awareness programmes which are related to dietary habits have been rarely implemented in Nepal. This study, therefore, assessed a school-based health education programme designed to implement a more interactive and collaborative approach thought likely to engage primary level students in a community school. This study aims to explore the existing mid-day meal practices of primary level students in the community schools and dogmatic parental attitudes in relation to the eating and good food choices among children of age below eight.

Methods

A qualitative research method was used in this study consisting a series of dialogue conferences in three focused group discussions (FGDs). Two FGDs were done with parents and one with teachers who are teaching at grades one to five. Ten participant observations were carried out in the tiffin time¹ throughout the study period to explore the eating behaviour of 1-3 graders focusing on healthy eating habits. Purposively selected school was a co-educational community school with diverse ethnicity of students. The population studied comprised all of the students studying from grade one to three. Purposive sampling was used to select a community school and parents while census sampling was applied to select a total of sixty students from grades 1-3. Parents were selected randomly by using the simple random sampling approach and they were voluntarily taking part in the study. Written consent has been taken from parents for them as well for their children throughout the study. Participating students were from 6-10 years old. They were allowed to make their own food choices for tiffin² with minimal influence from parents during the study period. A majority of the school students were living in their own houses and only a few of them were living in a rented home. The details of the sampled population are given in table 1.

Table 1. *Sampled population and sampling method*

| Participants | Male | Female | Total | Tool applied | Sampling method |
|---------------------|------|--------|-------|-------------------------|-----------------|
| Parents | 6 | 10 | 10 | FGD | Random |
| Teachers | 4 | 1 | 5 | FGD | Census |
| Students of Grade 1 | 10 | 13 | 23 | Participant observation | Census |
| Grade 2 | 6 | 11 | 17 | | |
| Grade 3 | 11 | 9 | 20 | | |
| Total | 37 | 44 | 75 | | |

The school-based healthy eating awareness programme lasted for three months from May to July 2019. One tiffin time observation was done 3 days per week and it took about two and a half months. Two FGDs were conducted among teachers and parents before observations and one FGD with the parents was conducted after the observation schedule was over. During the observations, parents and teachers were with the researcher. Notes were prepared in each and every observation on the basis of hand washing before and after meal, type of food children eat, junk or homemade food they eat, either they eat by hand or spoon, eat food with water or without water and presence of any flowers and green leaves in the food items.

A series of dialogue conferences in FGDs were carried out based on mid-day meals and the daily meals taken by the students at the school. The programme had one informal presentation by a parent, one by the teacher and few lines with the researchers about healthy meal and its advantages along with the mid-day meal and the problems caused by eating junk food items. Informal conversations were done with the school teachers during tea time due to their busy schedules in the school. All the information collected from the research participants based on the basic understanding of healthy eating habits, the importance of the right choices of mid-day meals and the consumption of green leafy vegetables were recorded. All the collected data were transcribed and translated carefully.

¹ Half an hour time (12:45-1:15) in which students and teachers eat day food.

² Food taken by students during the school day.

Sampled parents and teachers were required to record the food consumed daily as for breakfast, lunch, afternoon tea/snacks and dinner. Four questions were asked at the end of each observation to the students with respect to each meal (i) Have you had the meal at the home before coming to school today? And what have you eaten? (ii) At what time did you take your meal? (iii) Did you cook the meal yourself or it is cooked by your family members or brought from the market? And (iv) Do you like to eat food as a mid-day meal at the school? The themes of each question/query were recorded, transcribed and translated in English from which the themes were generated to explore eating behaviour of primary school students.

Results

The effectiveness of healthy eating behavior was evaluated based on the information collected from students' feeding habits during tiffin time at the school, teachers and parents who participated in the focus group discussions, observations of mid-day meal behavior of students and informal conversations with all the participants. There were ample details about the type and quantity of food consumed, but the focus of the study was on either participants (students) consumed mid-day meal regularly at the school or the type of food they eat. Also, other related factors like handwashing before meal, eating fruits and vegetables and taking homemade foods are also explored. The findings indicated that most of the students were eating instant and junk food items such as noodles, low-quality chocolates, *pani puri*, *tataura*, *chatpate*, beaten rice and *bhuja*. Most of the students did not wash their hands before the mid-day meal. Among them, very few of them wash hands only with water. None of the students eat green vegetables and fruits during ten observations. When I asked with the parents about the consumption of vegetables in the mid-day meal, one parent said:

Our children eat vegetables in the morning meal. They drink cow milk, sometimes egg, and most of the time they like to eat rice and 'daal'. But they eat very little and so it is not sufficient for the whole day. When they return home, they are hungry.

Most of the parents claimed that their children eat lunch and dinner regularly. Very few of them were skipping lunch and dinner if they were tired or not having food to eat at the evening. However, almost all of the parents reported that their children skip breakfast but they take only a cup of tea each day before going to morning work. They shared the importance of breakfast to keep the body healthy and fit as well but there is nothing at home to eat in most of the days. School going children eat little at home in the morning. Most of the parents reported that children eat rice and 'daal' in the morning and they want instant noodles³ to eat at the tiffin time in the school. So, they demand money with us. One of the parents said in his own words like this:

My daughter takes rupees 20 each day to take a mid-day meal at the school. I heard from her elder brother that she brought low-quality chocolates of rupees 5 before going to the school. At day time, she bought a packet of noodle and eat dry. I know that it is not good for her health but ... I cannot stop it. She cries and does not go to school if I prepare homemade food for her. It creates the problem to change her habit. I am thinking to share with the teacher so that she can leave this habit.

Another parent shared her experience and said:

³ A kind of readymade junk food item.

I prepare a mid-day meal for my children daily. My little daughter takes homemade food to the school but the son demands money to eat noodles. Due to his wrong feeding habit, he is lean and thin in comparison to my daughter. And so he is weak in the study.

The voices of two parents are the representative voice of almost all the parents except in a few cases. We observed the same scenario while observing the eating habits of primary level children in the school. Most of them eat noodles, beaten rice without water. Many of them do not sit while taking tiffin. They run along the ground and eat while running. Most students do not wash their hands before eating food items.

In the case of food taking habits, the result is a little bit different in which only two parents reported that they provide green vegetables in snacks that they usually eat lunch. Most of them provide milk tea and biscuits with sugar. Overall, it is found that the daily dietary patterns in terms of meals taking habits have changed during our observation period for three months.

It is found from the FGDs that one relevant aspect of the family environment may be the *family health climate*, which is defined as the shared perceptions and cognition concerning a healthy lifestyle within a family. It reflects the individual experience of daily family life, the evaluation of health-related topics, and expectations with respect to typical values, behaviour routines, and interaction patterns within the family. This conceptual framework includes psychosocial concepts such as family functioning, conflicts, communication, socio-economic status, and parental practices. Children's ability to imitate the actions of others and learning by observation in particular from their parents' could explain the kind of food styles developed.

Analysis of the parents' voice of the focus group discussions revealed that participating students mostly engaged in unhealthy dietary practices such as skipping breakfast, having an irregular dining schedule and consuming unhealthy food under peer influence. These unhealthy food items were mostly junk food items and chocolates. Many participants perceived healthy eating to be unattractive and as tasting awful. They also perceived healthy eating as expensive, out of reach and impractical. Parents and teachers further reported that dietary behaviour was heavily influenced by their friends who were consuming junk foods. Few students reported in the informal conversations that their parents were not able to serve as role models as they had unhealthy eating habits. Two students shared similar issues during the informal conversation and said:

Our parents bring junk food to us when he drinks alcohol after work. He comes with packed foods in his pocket. When he reaches our home, he smiles and gives us such foods like potato chips, noodles, chocolates and others. We are happy to see the packed foods because these foods are tasty in comparison to homemade foods.

During FGDs, parents oppose students' voices. But female parent participants in FGDs argued that sometimes we drink alcohol and in this time, we bring good foods like meat to our children. Others reported that they seldom received children's advice on healthy eating practices. During lunch hours, students often chose food from retailers nearby the school offering a low price even though they were aware of its low nutritional value. Female participants reported that they tried to avoid taking much rice as it contains carbohydrates that make our body fat. Analysis of the third focus group discussions revealed a definite increase in respondents' knowledge about healthy eating behaviour. They reported that they had learned from the health talks and the dialogue conferences in the FGDs about the importance of natural and fresh food items.

Overall, parent and teacher participants reported that they perceived healthy eating behavior meetings and conversations successfully. All of them reported that they gained knowledge about healthy eating either at home or at school. In this connection, five parents reported in the FGDs after observation of students eating behavior and committed as:

We are committed to send green vegetables each day and minimize the intake of junk food items to our children. We will prepare homemade food that we have like potato, rice, bread and so on and send in tiffin boxes as the mid-day meal to our children.

One parent participant said that she had started to consider nutritional values in making dietary choices. In the same way, other parent participants reported that this awareness programme at the school helped them to develop healthy eating habits.

It is found that in almost all the families, fathers have a great deal of influence on young children's nutrition and some differences were noted when compared to mothers' feeding practices. Fathers are generally less likely to monitor children's food intake and to limit access to food. The common feeding influence is pressuring children to eat. The result showed that the use of excessive control over a child's feeding disregards the child's independence. The majority of the feeding practices studied were responsive and included encouragement and support of the child's autonomy and independence, moreover, they help in organizing the feeding environment to improve the child's competence in choosing and eating meals.

During the FGD of teachers, one of the teachers (T1) argued like this:

The school has a major role to aware students to take healthy food items. We are continuously awaking children to change their daily behaviour. We promote them to eat fresh and green vegetables available in the local community. But we are not able to control it as the parents are not strictly applying the same from each home.

Another female teacher (T2) argues the line of the teacher (T1) and noted as:

Well, I suppose healthy eating should best be taught at school although; as they get older they do seem to take notice of what they're told at school. But I think...schools really could be motivating children to eat natural foods so far they can. I don't think the school is not doing anything to control the wrong habit of taking junk foods by children. And we are responsible to control this situation in the future.

Another female teacher (F3) pointed out her opinion like this:

The price and time are less to prepare healthy food items but due to parental misconceptions, children expense more money for daily food items. They are not getting healthy food instead. I prefer homemade organic food and I say the same to my students.

All the discussions, conversations, observations and dialogue conferences during FDG sessions, reveal that students do not have healthy feeding behavior for mid-day meal in tiffin time at the school. Teachers and parents argue to transform their eating behavior and consumption of green vegetables, flowers and fruits as well as give priority on homemade food items in the coming days.

Discussion and Implications

The above findings are consistent with the known influences of mid-day meal choice primary level students (Acharya, Devkota & Shrestha, 2019; Loth et al., 2016). This suggests that these practices are applicable to Nepalese contexts. The feeding practices adopted by Nepalese parents appear to reflect the consumption of junk foods.

Nearly all the participants acknowledged the use of verbal encouragement to foster healthy eating among primary level students.

This school-based healthy eating behaviour programme has demonstrated an innovative and engaging way to promote healthy eating, at least in the community schools in Nepal. Evidence from the teachers' and parents' opinion suggests that they have to adopt a one-way of thinking to daily eating behaviour. Connecting this line, Loth et al., (2016) found that parental authoritative style on feeding habit shape the eating habits of children. A study carried out by the team of researchers, Senanayake et al., (2001) suggests that healthy eating behaviour was not good enough among the students. Many factors influence healthy eating behaviour research participants. Also, the family system that surrounds a student's domestic life is an active role in establishing and promoting eating habits that will persist throughout their life (Gutuskey et al., 2019; Schapiro et al., 2019; Tamiru et al., 2016). Fathers and mothers act differently towards their children; fathers generally act in a more tolerant way and exert less active control on food intake. The authoritative behaviour and some parental control are likely needed to moderate student's intake of food items.

Limiting how often certain food is brought into the home, avoiding stores that sell unhealthy foods, and serving small but adequate portions should provide children with opportunities to develop self-regulation in eating habits. Parents have the determining role in promoting healthy consumption of fruits and vegetables in all the meals (Ahmadi et al., 2016; Hart et al., 2003). Offering children different foods beginning in the complementary feeding period and providing repeated exposure of disliked foods to stimulate their taste and help them to accept many foods later in life is a necessary strategy to develop healthy eating habits. All of these strategies come together during family meals. This setting has significant social importance in a child's life and parents should expose their children to a range of good food choices. In this connection, Acharya (2016) argued that the habit of children can be changed through critical thinking practices in primary classrooms. It seems that the school plays a significant role to change all sorts of habits of children either related to food choices or learning.

The importance of the family environment for children's health behavior has been demonstrated, but the underlying mechanism of this influence remains unclear (De Cosmi, Scaglioni, & Agostoni, 2017; Perez-Cueto, 2019). Previous studies have indicated that a positive family system may be part of a process that establishes and promotes beneficial health habits through role modeling, provision of healthy foods, and support for engaging in healthy eating behaviour (Chien, Chien, Chang, & Chen, 2018; Ciborska, Kłobukowski, & Pierzchała, 2018). The family can consider a system, as it is more than the sum of individuals. One relevant aspect of the family environment may be the *family health climate* (Schwartz, Vandenberghe-Descamps, Sulmont-Rosse, Tournier, & Feron, 2018; Storey et al., 2016), which is defined as the shared perceptions and cognition concerning a healthy lifestyle within a family. It reflects the individual experience of daily family life, the evaluation of health-related topics, and expectations with respect to typical values, behaviour routine, and interaction patterns within the family. This conceptual framework includes psychosocial concepts such as family functioning, conflicts, communication, socio-economic status, & parental practices and style. Children's ability to imitate the actions of others and learning by observation in particular from their parents and caregivers could explain the kind of food styles developed.

Accordingly, educational programmes should be offered to all children from different socioeconomic levels, with a goal of promoting to reduce imitation of the junk foods from the

mass media like television. Parents should receive advice on how to establish long-term healthy habits and create pleasant eating patterns in their children while becoming aware of behavioural determinants that favour malnutrition and eating disorders. Overall, the school is the best place to develop the healthy eating behaviour of school-going children in Nepal.

Conclusion

This qualitative inquiry provides first-hand evidence about the perceptions of 1st, 2nd and 3rd graders and their parents, of the influences on primary children mid-day meal habits. The findings show that parents and school environments play an important role to influence over students' mid-day consumption. These findings suggest major targets for effective nutrition interventions to improve the eating behavior of primary school children in Nepal.

Author's contribution

MA collected, analyzed, interpreted and drafted the manuscript. KPA provided scholarly comments on the manuscript. Both the authors read and approved the final version of the manuscript.

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Ethical Statement

Consents were obtained from all the research participants.

Disclosure statement

No potential conflict of interest was reported by the author.

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Street Children in Nepal: Causes and Health Status

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Abstract

Street children refer to the children who have not reached adulthood, for whom the street has become their habitual abode and/or a source of livelihood. The reasons for their connection to the street will vary from nation to nation, city to city, and from person to person. This research envisaged to explore the causes of being street children and assess their health status of two study areas, Kathmandu and Birjung, Nepal. The research followed descriptive, exploratory and applied 'QUAN-qual', quantitative dominant mixed methods. The two: semi-structured questionnaire with 150 participants for quantitative data and Key-in-depth interviews (KIs) with 18 participants for qualitative data were employed in this research. The research areas were purposively selected as per the researcher's pre-observation and respondents on the basis of convenience sampling. The quantitative data were analyzed using the Statal Package for the Social Science (SPSS) software version 20.0 and qualitative data were thematically analyzed using content analysis. The findings of the study depicted that the dominant causes to be street children are family-based causes. Economic, social, and other causes are second, third, and fourth respectively in the study area. Additionally, gender and alcohol consumed behavior was found significant where education level and age had no significance to determinants of the health status of street children. The overall implication of the study signifies that the attention has been shifted from treating the biological to encouraging street children to gain positive necessary health skills that are based on self-care and self-management behaviors including knowledge, beliefs, attitude, motivation, and behaviors.

Keywords: Street children, causes, health status, education, Nepal

Introduction

Millions of children live in the street throughout the world, today. More than 150 million children are in the street due to home violence, the death of parents, family breakdown, war, natural disasters, and poor socio-economic status (Shrivastava et al, 2016). There are no reliable statistics about street children living in Nepal till the date. However, the total estimated number of street children in Nepal is 5,000 (Thakuri, 2017). In a similar way, another research conducted in 2014 stated approximately 1200-1500 street children live only in Kathmandu valley and there are numerous causes behind a child belonging to the street (Shrestha & Shrestha, 2014). In the context of Nepal, as everywhere the dominant reasons that lead children to get into the street are found poverty, family loss, family conflicts, natural disasters, civil war, and the pursuit of freedom. The street children are mostly deprived, have no access to health care and light of education, and most of them have been victims of violence even before being to the street. They are seen by many as worthless and forced to live on the

streets with occupying scavenging, begging, hawking in the slums and polluted cities (Webb, 2015).

A street child refers to any girl or boy for whom the street has become his or her habitual residence or a source of livelihood and who work and live in the streets in the daytime and whether return back home to their family at night (Bhat & Qudir, 2014). Shrestha & Shrestha (2014) state that street children are children for whom the streets act as a fundamental part of their life. The United Nations Convention on the Rights of the Child (CRC) defines a child as a human being below the age of 18 years' which is ratified by 192 member countries (Phelivanli, 2008). However, Nepal Law Commission (NLC) defines a little differently that a child as a minor not having completed the age of 16 years (Child Act, 2006). For this reason, a person below the age of 16 years is treated as a child and also declares that below that age the Nepalese law treats being on the street is a street child.

The problem of street children has emerged as a major social problem. The change in the political system of Nepal is also unable to bring a difference in terms of addressing this serious problem as it was expected (Pradhan, 2016). Most of the street children are living, sleeping and working under the open sky and engaging to survive as they can without family support, for example, they are presenting themselves as rag pickers, dishwashers, shoeshine boys, and newspaper sellers. Furthermore, they are overwhelmed with various problems such as hunger, shelter, clothes and many more like this, and gangsters' ragging too. They are in high risk, insecure and are vulnerable too in various forms of exploitation, abuses especially exposure to alcohol, drugs and tobacco. Worst yet, street they are gradually being exposed to the world of crimes as well.

As far as researchers' knowledge is concerned, health and education are vital requirements for children to explore their innate potentiality. The denial of access to either one may assist street children to be helpless victims and even to face social discrimination too (Panter-brick, 2002). Educating these poor and needy children, giving them social standing, and looking after their well-being and good health will assist the children to become the architects of their own lives (Dutta, 2018). In this regard, this article discusses the causes of street children and their health status with expecting that this research paper would be helpful for policymakers, administrators, stakeholders and the researchers to search for the remedies of the problems so far faced by the street children of Nepal.

Methods

The study followed "QUAN+qual" Johnson et al., (2007) research, known as the quantitative dominant mixed-method and applied descriptive as well as an exploratory research design. Primarily, it focused on access to health and education in street children between 6 to 16 years old in two of the most densely populated metropolitan cities of Nepal: Birjung Sub-metropolitan city and Kathmandu Metropolitan city, Kathmandu. These both research areas are purposively selected on the basis of pre-observation since they have been always crowded and commercial too. Further, the first city is the only one Sub-metropolitan city in Province 2 and is an industrial hub, where the majority of children come from various villages around the

country even from the neighboring country India in search of opportunity. The second one is the capital city of Nepal where people gather here for different purposes throughout the country. Therefore, the areas were suitable for research to identify the various causes which force a child to be on a street and examine health status.

The whole number of street children who reside in Kathmandu and Birjung city comprise the universe of this research. The sample size comprised altogether 168 participants, where 150 consists of semi-structured interviews for quantitative data and 18 for KIs for qualitative data of the research. Details of each participant's characteristics are presented in Table 1. A convenience sampling technique was used; the selection of participants depended on the availability of children at the street at Birjung and Kathmandu city at the time when the interviews were being conducted.

The two different types of quantitative analyses were made in this study: univariate analysis and bivariate analysis. Initially, univariate or descriptive analysis was used to describe the percentage and number of participants according to socio-demographic characteristics. The chi-square test (bivariate analysis) was carried out to evaluate the association between independent variables (street children) and the outcome variables (health status). To detect the significant difference between the different mean levels, an independent sample chi-square-test was used, a p-value of 0.05 or less was considered statistically significant (Goundar, 2019). Both univariate and bivariate analyses in this study were made with Statistical Package for Social Science (SPSS) software pro 20.0 version. Further, qualitative analysis was carried out thematically using content analysis (Martinsson, 2017).

Demographic Characteristics of the Participants

Table 1 illustrates the respondents' age, sex, and educational level. The data, at first, show that more than one fourth (32%) respondents were between the age of 12-14 years and the least respondents (18.7%) were of the age between 6-8 years. Simultaneously, 29.3% of respondents were at the age of 9-11 years and the remaining 20% were between 15-16 years of age. Thirty-two percent respondents completed only grade 2 where the least (14.7%) respondents were above up to 6 grades. Likewise, 28 % respondents responded that they had never attended schools and the remaining 25.3% completed 3-5 grade of formal school.

Table 1: *Demographic characteristics of the respondents*

| Respondents by their Sex, Age, and Educational Level | | Number | Percent |
|--|----------------|--------|---------|
| Sex | Male | 106 | 70.7 |
| | Female | 44 | 29.3 |
| | Total | 150 | 100.0 |
| Age | 6-8 years | 28 | 18.7 |
| | 9-11 years | 44 | 29.3 |
| | 12-14 years | 48 | 32.0 |
| | 15-16 years | 30 | 20.0 |
| | Total | 150 | 100.0 |
| Education level | Never attended | 42 | 28.0 |
| | 1-2 class | 48 | 32.0 |
| | 3-5 class | 38 | 25.3 |
| | Up to 6 class | 22 | 14.7 |
| | Total | 150 | 100.0 |

Results

The research presents the results from the mixed-method study with respect to various causes for the children being in the street. Further, it has examined the association between different variables of street children and their health status.

Causes of being Street Children

The quantitative result displays the causes of the adoption of a street-based lifestyle by children. The obtained root causes are mentioned in Graph no 1. As it has been projected in the bar graph, the majority of the participants (42%) responded that families are the dominant cause to become street children. In similar ways, 29.3% participants emphasized economic causes. Eighteen percent of the participants pointed out social causes and 10.67% participants other causes to become street children.

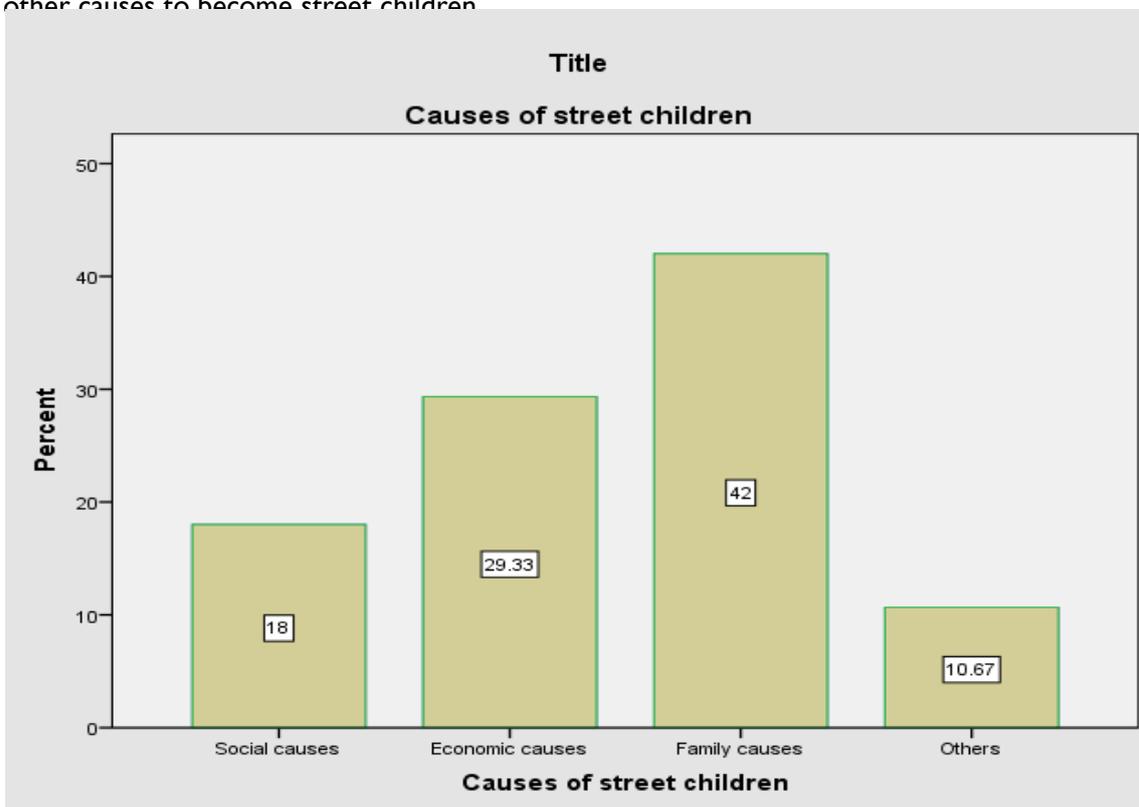


Figure 1: Causes of street children

Since this research followed 'QUAN+qual' Johnson et al., (2007) quantitative dominant mixed methods, the researcher here takes the supports of quantitative findings along with qualitative information. Accordingly, from the most dominant to less dominant causes are analyzed and supported by qualitative findings like information and verbatim of the participants in this section.

Family causes. Since family-related problems were found the prime causes, it covers 42% of the total population of the study. Most children who grow up in an intolerable environment in their family are found to be mistreated by their parents. These disappointed children want to be free from such homes that ultimately push themselves to adopt street lives. Further, children from broken families such as staying with stepmother, father, and without families, and/or orphans pick up bad habits like drinking, smoking, having intoxication, playing cards, and other negative deeds that are banned by the law of the nation. Additionally, they prefer to live on the street rather than in a society that pertains to social shame. In this regards the participants shared their narrative in the following ways:

My mother left the house and married another man. My father was old; my brother and sister were very young. My father forced me to work for making money to feed my young brother and sister. My father beat me badly when he came back home with drinking. Besides this, my father and other relatives were jointly punished many times in the case of playing cards and smoking. So, I ran away from home. (Participant 1)

My mother was mentally ill. I have a small brother but we do not know who our father is, neither mother knows to his husband. I used to live with my grandfather (mother's father). He used to work for a plastics company. We have food only in the evening after grandfather returned from work. While grandfather could not go for work we have no food. Finally, after his death, I came to the road. (Participant 4)

For these participants, the scarcity of good parenting influenced them to be in a street. The disrupted family from where they did not get proper love and care was the cause of adopting street life. In analogous words, the above narration revealed that an intolerant environment of the home, misbehavior of the parents as well as negligence by the society are the family-related causes that influenced and/or compelled them to adopt street life.

Economic causes. From the analysis of data, this research noted economic causes as the second dominant cause; this covered up 42.33%, which pushed people on the street. Every individual to family member needs enough economic resources such as food, shelter, healthcare, education, child care, and child welfare to survive or to make their lives comfortable. Those families who are living under the poverty line, cannot provide proper care to their children and will become subject to negligence. As a result, children move out of the house and start to make their own group on the street. Sometimes the street environment becomes a pull factor to the children from their homes. In this regard, one of the participants shared his reasons to leave his parents' house like this;

We are five. Father, mother, I, and two younger siblings. We have a small 'Chhapro', wall and roof is made by 'JastaPata'. We have no sufficient money for food. My parents always go to work along with took me to their working site saying 'now you are big, you should go work with us'. The work was very hard that I can't sleep overnight. I never knew how much money they give to my work. So, I do not stay at home and came to the street which is far the easiest way to collect money than that working. (Participant 2)

The above narrative revealed that when children hit by a famine and money crisis, it forces them to pursue work outside of their homes. It is because the income of parents will not be

sufficient in such a hard time. In some cases, children realize their parents are having a hard time running the household; especially when the family size is big. Many families live in extreme poverty, in a slum and children are forced to look for work; they normally end up in a street when they go through this process. In some instances, due to ongoing family hardship parents deliberately left their children on the street hoping some wise men or some organizations will pick up their children and look after them.

Social causes. The social phenomenon has been counted as the third leading cause that leads children to the street of which the proportionate was 18%. It has been found increased by the numerous obligatory social and structural systems. Nepali society is a patriarchal society where the male member has unlimited power and a hegemonic role in the family. To set out the family structure to vital decision making depends upon them. Gender discrimination, infanticide (girl child after identification of sex in the womb) are some common negative impulses in society. Most of the households live in a joint family. In this kind of family structure, gender discrimination leads to break the families and lack of healthy interaction between parents and children and this tends to structure children to move towards urban areas or start life as street children.

Nepali society practices different types of stigma which ultimately negatively impact the person. One of the study participants emphasized that the social stigma blamed by society pushed her to become a street child in the following words:

Six years before, it was midnight, my father died of an unknown disease. Instantly, after 15 days of father's death, the mother fell down from the tree and passed out. Then after, villagers blamed me as a 'parents eater' (AmaBauTokaua), a person whose parents died at the early age of the child is called parents eater. I cannot bear this stigma and left my village. (Participants 5)

In line with this statement, social stigma is the one major cause that compels children to go to and spent street life.

Other causes. In this research, the other causes include wars and natural disasters which often lead to massive spikes in the street children population. It covers 10.67% in this study. Wars contribute to the deterioration of the national economy, the destruction of homes, the killing and displacement of thousands and the dispersion of families. This, in turn, leads to an increased number of orphans and homeless children. The same applies to natural disasters, such as earthquakes, volcanic eruptions, floods and hurricanes. For instance, the 2015's earthquake in Nepal has resulted in the existence of thousands of street children due to the death of their family members, the full demolition of their homes or dispersion of their families. The following interview excerpt is one of the representatives of such:

We were four in our family as father, mother, younger sister, and I. My parents passed out in the massive earthquake 2015 while they were working in building construction at Kathmandu. After our parents' death, we used to live with our relative's house in the village. There I always should go to 'Gothalo', look after the cows and goats. Meanwhile, I escaped from relatives' houses while on 'Gothalo' with one of my friends and came to Kathmandu. (Participants 7)

This participant’s verbatim represents economic deprivation that occurred by a natural disaster is one of the leading causes to be a street child. Along with, in ‘etic’ perspective, children are not loved and cared for by their relatives as it should be after their parental loss. As a result, they search and make destiny to the populated areas for their shelter and livelihood.

Health Status of Participants

Table 2 shows the association between sex, age and education level of the respondents and their health status at a 99% confidence level. As per the survey data, the gender basis health status of street children is significant. In analogous words, male children had good health status in comparison to female children. The female street children were highly suffered than males from different diseases. Simultaneously, it was found the significance of health status between having alcohol and not of street children. On the other side, the age and education level of the street children had no significant effect on their health status.

Table 1: *Health status by their sex, age and education level*

| Sex, age, and educational level of the respondents | | Health status | | | | Total | |
|--|----------------|------------------------|------|---------------|------|-------|-------|
| | | Suffering from disease | | Not suffering | | N | % |
| | | N | % | N | % | | |
| Sex ** | Male | 36 | 34.0 | 70 | 66.0 | 106 | 100.0 |
| | Female | 25 | 56.8 | 19 | 43.2 | 44 | 100.0 |
| Age | 6-8 years | 16 | 57.1 | 12 | 42.9 | 28 | 100.0 |
| | 9-11 years | 21 | 47.7 | 23 | 52.3 | 44 | 100.0 |
| | 12-14 years | 14 | 29.2 | 34 | 70.8 | 48 | 100.0 |
| | 15-16 years | 10 | 33.3 | 20 | 66.7 | 30 | 100.0 |
| | Never attended | 20 | 47.6 | 22 | 52.4 | 42 | 100.0 |
| Education level | 1-2 class | 19 | 39.6 | 29 | 60.4 | 48 | 100.0 |
| | 3-5 class | 15 | 39.5 | 23 | 60.5 | 38 | 100.0 |
| | Up to 6 class | 7 | 31.8 | 15 | 68.2 | 22 | 100.0 |
| Having Alcohol ** | Yes | 45 | 43.6 | 58 | 56.3 | 103 | 100.0 |
| | No | 16 | 34.4 | 31 | 65.6 | 47 | 100.0 |
| Total | | 61 | 40.7 | 89 | 59.3 | 150 | 100.0 |

Note: Chi square test ***=P<0.001, **=P<0.01 and *=p<0.05

Discussion

Street children are a unique group of children who work, live, and/or sleep on the street or public places. They are basically deprived of parental love, care, and understanding. They are living under extremely difficult conditions. Normally the cause of being street children is multi-dimensional where several factors play the role of pushing and pulling children into the streets. It is the responsibility of the family to provide for the basic needs of the children for survival, academic, and social development as well. In this discussion part, the researcher has especially discussed two core themes: causes of being street children and their health status.

Causes of Street Children

Family causes. With respect to street life initiatives, the researcher concluded from the obtained evidence that the escape of abusive parental punishment followed by poverty, hate of their step-mothers and fathers, father-mother conflict, and parental alcoholic behavior are the major causes behind forcing children to leave home. In support of the present findings, Endris & Sitota (2019) mention the most responsible factor for street children is a lack of supportive and functional family, which also includes the death of a family member, family divorce or separation or loss of a job. In addition, many researchers as Moura et al., (2012) argue that family abuse leads children to run away from home and start to leave on the street. Alongwith, Rai et al., (2002) emphasized that the most common reason for running away from home is to escape physical abuse or negative family environments. Many children run away to the streets to avoid violence and ill-treatment in the family (Martinsson, 2017). So, living on the street is not the passion but it is out of compulsion (Bhukuth & Jerome, 2015). In the opinion of Lalor (2017), the main factor that drives children to leave their home is child abuse and neglect, following family disintegration, the parents' separation or divorce, and the death of a parent or re-marriage. After the re-marriage of parents, children are frequently abused and forced to leave the house by the stepfather or mother.

Economic causes. This study also found that poor economic situations act as a second dominant contributing factor to the problem of street children. In support of this finding, UNICEF (2019) revealed poverty, unemployment, elevated prices, declining national income, poor distribution of wealth within society, and the increasing gap between the rich and the poor are all factors with a direct impact on the rise of the phenomenon of street children. While Rai et al., (2002) argues that besides the economic stagnation, migration, environmental degradation, and urbanization are major contributing factors to be street children. There is a causal relationship between economic factors and street children. When a child feels that the family is unable to afford education fees, the child leaves her/his education and joins the labor force. Additionally, a financial crisis in family or a decline in the family income can create factors conducive to driving more children onto the street.

Social causes. Similarly, the results of the study showed that social factors are crucial to drive the children from their homes into the streets. In support of the present findings, Moore & Specialist (2005) showed that many children run away to the streets to avoid violence and ill-treatment from society. Meanwhile, Bhukuth (2015) noted that economic and family causes are not enough to explain the phenomenon of children of the street and pointed out children migrate onto the street as a result of social neglect, abuse, and violence. In a different way, some socio-cultural practices also increase the risk of street children, for instance, in sub-Saharan societies, the adults, especially the fathers, exercise all the power (political, domestic, and financial). The eldest son has to wait until his father's death to enjoy any advantages. In these societies, the relationship between children (juveniles) and adults is a factor that drives children to run away from home (Bhukuth & Jerome, 2015).

Other causes. The study found that the 10-years civil war and the 2015's earthquake destructed homes, killed and displaced thousands of families that ultimately increased the

number of orphans and homeless children. Endris & Sitota (2019) argued that freedom and natural disaster work as other causes. They also explained that children often want to free from each time and entire home network UNICEF (1994) stated that the attraction of street life is increased by viewing other child's activities: playing, dancing, and enjoying at the place of the street. For that reason, some try this chance and come into the street where there are many other street children there.

Health Status of the Participants

During the study, the data revealed that the majority (70.7%) were male and only 29.3% were female participants. In a worldwide scenario, there is a higher incidence of street boys than street girls (Rooyen & Hartell, 2012). For instance, in Columbia, the street child population is 75% male and 25% female (Khanal, 2014). The same report revealed that in Espinola, 90% of the young street workers engaged in vending or service occupations in Asuncion were boys. This may happen due to the situation that working girls may be hidden by the nature of their work, which tends to be less visible than the work of street boys.

With regards to health conditions, a good majority, i.e. 89 participants were not suffered from the disease where 61 of them were suffered. Similarly, it was found that females were highly suffered than males from diseases. In line with present findings, Bhusal (1996) revealed that children often use psychoactive drugs that include benzene and glue sniffing, smoking cigarettes, chewing 'chat', plastic along with using Marijuana and Hashish pretending to overcome different problems which ultimately leads them illness. Woan et al., (2013) also presented in their peer review that the parasitic infections including endoparasitic infections were more prevalent among street children than non-street children among of-the-street children than on-the-street children. Street children have limited access to health care due to cost, minority status, stigmatization by providers distrust in quality of care, and difficulty in finding time to seek care because of lost earnings (Rooyen & Hartell, 2012). Similarly, they also indicate that street children admitted to hospitals are mostly treated for wounds, most of them are assaulted on purpose while they roam the streets. As per, Abdi et al., (2017), attention has been shifted from treating the biological to encouraging street children to gain positive and necessary health skills which are based on self-care and self-management behaviors that includes knowledge, beliefs, attitude, motivation, decisions, and behaviors.

On the basis of the findings and discussion of this research, it necessities to formulate realistic policies in collaboration with concerned social organizations, agencies, stakeholders, and researchers to address the issue of street children. Further, they need to work together to minimize the different causes that bring children to the street. Additionally, a policy should bring about positive changes in the lives of children in Nepal.

The study has various limitations such as time constraints, resources, and participants. Since research followed mixed methods, it only applied semi-structured interviews and KIs as the research tools. The study is limited to only 168 participants due to time constraints from both of the cities, i.e. Birgunj and Kathmandu. Thus, the findings of this research can be inadequate to generalize to all street children in Nepal.

Conclusion

There are numerous causes to be street children. Amid them, the family is the core cause. In addition, economic, social, and others are second, third and fourth causes respectively in the study area. Besides, gender and alcohol consumed street children act as significant determinants of health status. The female street children were highly suffered from the disease where males were not so much. So as of gender, alcohol consumed street children were found highly suffered from the disease than the non consumed ones. In the flip side, education level and age of the respondents had no significant role for their health status.

On the basis of the findings of this research, some recommendations are made to the policymakers, concerned social organizations and different agencies, stakeholders, and researchers. To make child rights a realistic policy, the government of Nepal, social organizations, development agencies and people of Nepal need to work together as well as harder in order to bring about positive changes in their lives of children in Nepal. Further, the subject matter of street children is a very wide area and so many problems and issues are still to be analyzed and verified that are directly correlated with street children.

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Effect of a Pilot Programme by Capability Approach to Prevent Lifestyle-related Diseases in Kaski, Nepal

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Abstract

In the rural area of Nepal, lifestyle-related non-communicable diseases (NCDs) are emerging in recent days. We piloted a program model (2017-2019) to protect people from lifestyle-related diseases in a remote village of Kaski district where the health facilities are limited. This program was supported by Japan International Corporation Agency. We aimed to initiate a simple model of health monitoring to reduce the risks of lifestyle-related diseases. Health monitoring (blood pressure and body weight measurement) together with peer education regarding lifestyle-related disease was conducted by trained volunteers on regular bases. One-group pre-test-post-test research design was used to measure the impact of the program on the 104 participants with the age ranging 52 ± 8.99 years in female and 57 ± 7.38 years in male, sampled from the 100 households in the target village, Gairegaon. The double burden of underweight and overweight was observed in the programming community. After the program was conducted for one year, the percentage of people who is in the normal body mass index (BMI) range was significantly increased from 68.2% to 75.9% in total. Similarly, the ratio of normal blood pressure rose up significantly from 40.4% to 59.6%. This program results suggested that the community-led capability approach works effectively with locally affordable cost to change the behavior of people to reduce the risk of lifestyle-related diseases.

Keywords: blood pressure, BMI, body weight, capability approach, health monitoring, lifestyle-related diseases, peer education

Introduction

In recent years, epidemiological and nutrition transitions resulted in shifts from undernutrition and infectious diseases to overweight/obesity and diet-related NCDs. It is said NCD kills 41 million (79% of global deaths) each year. [WHO, 2018 Non-Communicable Diseases], NCD is

also called the lifestyle-related disease, including cardiovascular disease, cancer and diabetes, etc. Within Nepal, past studies reported prevalence of NCDs; hypertension 22.4 % - 38.6 %, diabetes 4.1 % - 9.5 % and cardiovascular diseases 5.7 % [Mishra, 2015]. We had recognized that even in a rural area in western Nepal, residents are suffering from those NCDs after reviewing the statistical data of local health posts and other research reports [Gauchan, 2018]. According to a statistical report by the government of Nepal, 37% of under 5 children in the mountain region are still underweight [FAO, 2016]. On the other hand, recent studies in Kathmandu revealed that the incidence of obesity and overweight is reported to high in the Nepali adult population [Amatya, 2014]. It is also recognized that the double burden of malnutrition (DBM) has become the new standard in the global level. The DBM is defined as the coexistence of undernutrition along with overweight/obesity or diet-related non-communicable diseases (NCDs), within individuals, households and populations as well as across the life course [WHO, 2016].

Metabolic risk factors contribute to four key metabolic changes that increase the risk of NCDs are raised blood pressure, overweight/obesity, hyperglycemia (high blood glucose levels) and hyperlipidemia (high levels of fat in the blood) [WHO, 2018 Non-Communicable Diseases]. Considering the context of rural Nepal where a blood test cannot be done easily, health monitoring by body weight and blood pressure seemed to be more realistic for the prevention and early detection of lifestyle-related diseases. In rural Nepal, people have to go to the nearest health facilities such as clinics and hospitals to have their body weight and/or blood pressure measured. As our baseline survey result showed, people are not so aware of the risk of lifestyle-related disease. Many of them didn't know their usual body weight and/or blood pressure. Thus, we decided to make a basic model of health monitoring in regard to lifestyle-related disease prevention for rural villages, mobilizing local human resources with a locally affordable budget through community participation. We applied the capability approach and hypothesized that even the people who are illiterate or semi-literate also can change their behavior to reduce the risk of lifestyle-related diseases after their knowledge and skills were gained through the program.

Machhapuchhre RM is located in a hilly region, 16 km away from Pokhara city. Roads are rough, narrow and steep in some places and difficult to access, especially in monsoon. The population of Machhapuchhre RM Ward-6 is 2781 (Male: 1251, Female: 1530), residents in 767 households. The community consists of mixed ethnic groups. Most of the villagers live a self-sufficient life, depending on farming in terraced fields built on steep slopes. They produce crops such as rice, beans, corn, millet, barnyard grasses and wheat. Joint families are decreasing and nuclear families with the absence of fathers due to migration abroad are rapidly increasing. Depopulation and aging is serious issues similar to other remote villages. Local health facility is only one health post with two health personnel (senior auxiliary health worker I, auxiliary nurse midwife I) and limited medicine/equipment.

Methods

Target Community

This program was conducted as pilot activities in the area called Gairegaon that has 100

households in total in Machhapuchhre RM Ward-6 (Former Dhital VDC), in Kaski district, Nepal. The whole village of Gairegaon was chosen as the target community because of the location, its balanced ethnicity structure, the lower socioeconomic status than other areas and the number of households that was suitable to the scale of the program.

Ethical Considerations

This is the project financially supported by the JICA grassroots technical cooperation fund. According to the ethical clarification guideline of Nepal, approvals were obtained from the Machhapuchhre RM office, Kaski District Coordination Committee and the Social Welfare Council, Nepal after the project proposal was authorized from the internal ethical committee of Morinomiya University of Medical Sciences, Osaka Japan. In the surveys, oral and written consent are obtained in advance from the participants.

Program Strategies

The duration of the project was 1 year and 11 months (September 2017 - July 2019). Our main strategy was the health monitoring by regular measurement of body weight and blood pressure by the trained health volunteer team. Local youths were recommended by others or by themselves to become volunteers. The local health post-in-charge (senior auxiliary health worker) also joined them as a team leader and made necessary advice /suggestions. We used the model: Rossmax swiss WB101 as the bodyweight measurement device. Their blood pressure was measured using the blood pressure measuring device model: TaiDoc TD-3124. Not only people from the target community but other community people who were willing to come were also accepted to join the health monitoring. Peer education by the trained local volunteer was also conducted in parallel, to motivate people to know their own health data and its interpretation, so as to practice healthy behavior to keep those values fine. The educators used the visual material for teaching about lifestyle-related diseases, especially how to practice a healthy diet. The monthly schedule of the health monitoring session was made and shared by all the team members in the regular meeting with the leadership of the program management committee that consists of the representatives of the local community. Twenty-six sessions were conducted in total throughout the program period. Near the end of the program, about 30 to 50 people participated in each time.

Figure 1. Algorithm of the capability approach to reduce the risk of lifestyle-related disease (individual level)

Evaluation of the Effect of the Program

One-group pretest-posttest research design was used to evaluate the effect of our program. We determined the sample size using G Power 3.1.9.2. To examine the significance between before and after the program intervention using χ^2 test, it was found that at least 96 subjects are required when the effect size=0.5, alpha level= 0.01, power=0.95 and the drop-out rate is estimated as 25%. Based on this, we picked up one adult person each from all 100 households in the target community, Gairegaon. The total sample size became 104 because we picked two persons from 4 households which had two separate kitchens to cook meals. As the pretest, we conducted the baseline survey in December 2017 on the 104 participants to know the

situation before conducting the program activities. Measurement of height, weight and blood pressure, a semi-structured questionnaire which was asked orally and recorded by the interviewer, focus group discussions and direct observations were used as the tools of data collection. One year after the baseline survey, the last survey was done as the posttest to measure the outcome of the program. Collected data were statistically analyzed using the software of Excel and SPSS ver. 24.25. A chi-square test was used to examine the significance of the difference in BMI and Blood Pressure value between the pretest and posttest. A p-value of 0.05 or below was considered as a statistically significant level.

Results

Out of 104 participants, 87 were female and 17 were male with the age ranging 52 ± 8.99 years in female and 57 ± 7.38 years in male. The ethnicity consisted of Brahmins/Chettris 39%, Dalits 40%, Janajatis 17% and Muslims 4%, respectively. We assessed the level of achievement by comparing the values between the two surveys. Following is the result of outcome regarding knowledge, practice and change in BMIs as well as hypertension prevalence.

Change of Knowledge after the Intervention

The average score of a test assessing knowledge level about lifestyle-related diseases among the participants gained from 63.8 to 94.6 after the intervention. The assessment test included questions about the cause of lifestyle-related diseases, nutrients consisting of different food items, the effect of junk foods on health. etc. The most obviously changed knowledge was about the cause of lifestyle-related diseases. Before the intervention, more than half (54.8%) of people believed the cause of lifestyle-related diseases was a virus, but 97.1% of the participants knew obesity to be a cause of lifestyle-related diseases after the intervention, raised from the previous rate 31.7%.

Change of Dietary Practice after the Intervention

At the baseline survey, the ratio of participants who put more than 2 teaspoons sugar in a cup of tea was 33.7%, which was reduced to 2% after the intervention.

Figure 2. Sugar consumption with tea

After the intervention, people who can make 4 types or more bean dishes except dal soup increased from 15.4 % to 31.4 %. Likewise, people who can make more than 4 kinds of dried vegetable dishes increased from 16.4% to 32.3%. People who consume Junk foods more than 3 times or more per week decreased from 20.2% to 7.6%.

Change of BMI after the Intervention

Each participant's BMI was calculated from height and weight. We defined normal range as BMI 18.5-24.9 kg/m², underweight as BMI less than 18.5 kg/m² and overweight as BMI 25 kg/m² or more.

The overweight was seen among 19.5% of women and 23.5% of men in the baseline. After the program, the last survey data showed overweight among 12.6% of women and 17.6% of men. The underweight seen in the baseline was 9.1% among women and 23.5% among men, whereas underweight seen in the last survey was 8.0% among women and 23.5% among men.

As a result, the percentage of normal BMI among both women and men was significantly increased from 68.2% to 75.9% ($\chi^2=12.091$, $df=1$, $p=0.001<0.05$) after the program.

Table 1. *Change of BMI after the programme*

Change of Blood Pressure after the Intervention

Hypertension was defined as systolic blood pressure ≥ 140 mmHg and/or diastolic blood pressure ≥ 90 mmHg. Prehypertension was defined as systolic blood pressure 120–139 mmHg and diastolic BP 80–89 mmHg.

In the baseline data, the prevalence of prehypertension and hypertension was 37.5% and 22.1%, respectively. In the last survey, the ratio of prehypertension and hypertension was seen as 30.8% and 9.6% respectively, indicating the prevalence of both prehypertension and hypertension decreased. As a result, the ratio of normal blood pressure significantly increased from 40.4% to 59.6% ($\chi^2=8.453$, $df=1$, $p=0.001<0.05$) after the program.

Table 2. *Change of blood pressure after the program*

Discussion

There are not so many studies conducted on BMI in Nepal, but a study conducted in Kathmandu [Amatya, 2014] reported that 37% was overweight, 5% was obese and 1% was underweight, resulting in 57% was in the normal range. Another study [Poudel, 2018] conducted in the urban and semi-rural area in Chitwan reported that 33% was overweight, 4% was obese and 7% was underweight and 46% was in the normal range. Their study showed a higher overweight/obese rate than that of our survey (overweight 20.2% in total) and very low underweight rate comparing to our result (underweight 11.5% in total). This would be due to the place where the study was conducted. Kathmandu and Chitwan are the areas where people do not need to do heavy physical activities in daily life because of convenient environment and transportation facilities and have more accessibility to high calorie and various foods/drink items.

According to the global data in 2013, the prevalence of overweight in Nepal increased from 9% in 1990 to 12% in 2013. [Helble & Francisco, 2017]. Our present study in the remote village in the mountain area showed overweight as high as 20.2% which was higher than the overweight prevalence of all Nepal in 2013 which was reported only 5 years before, indicating a rapid increase of overweight seen even in the rural remote. The high overweight and the high underweight cases show that there is a double burden of underweight and overweight existing in the program area. After the intervention, the burden of overweight was reduced in both sexes, though the improvement was more prominent in women who take more responsibilities of getting foods and cooking.

In a community-based study in Kathmandu, the prevalence of hypertension was 32.5% (95% CI: 28.7–36.3) [Dhungana, 2016] and in another study in Dhulikhel was 28.9% [Koju, 2010]; both were slightly higher than our data 22.1%.

Even though after one year's intervention, an improvement in the BMI and blood pressure was already ascertained. At the end of the program, most of the target community members know

their own body weight and blood pressure. They are also aware of whether their own values are normal or not, and how those can be got closer to the normal range or kept within the healthy value. The survey showed that the majority of them got to understand what kind of behavior change is necessary to reduce the risk of lifestyle-related diseases after the program. Thus, our hypothesis: illiterate/semi-literate people also can acquire the basic knowledge and skills to protect themselves from the risk of lifestyle-related diseases through capability approach had been verified.

This is a pilot program on community health promotion through local villagers' participation from planning, monitoring and evaluation processes. So, villagers do not merely accept ready-made activities but do a continuous revision based on their real needs and situations. The project management committee which consists of 15 representatives of villagers played a vital role. The committee managed to solve the problem of difficulty to access the health monitoring for elderly/disabled citizens by adding two venues as the outreach services, also starting door to door visits. We have verified monthly conduction of the health monitoring still continued in December 2019, four months after the phase-out of the program. The chairperson of the committee who is also the ward chairperson already mentioned that necessary money to run the project should be secured from the ward annual budget showing the political commitment of the local government.

Conclusion

It is found there is a double burden of underweight and overweight existed in the target community in Macchapucchare RM-6. Health monitoring together with peer education worked well to modify people's behavior to reduce the prevalence of overweight and hypertension that is the risk of lifestyle-related diseases. Our pilot program on a small population proved that the community-led intervention model with the capability approach is effective and suitable in a resource-limited setting. Further validation of this approach model seems to be necessary by applying in the larger population.

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Figure 1. Algorithm of the capability approach to reduce the risk of lifestyle-related disease (individual level)

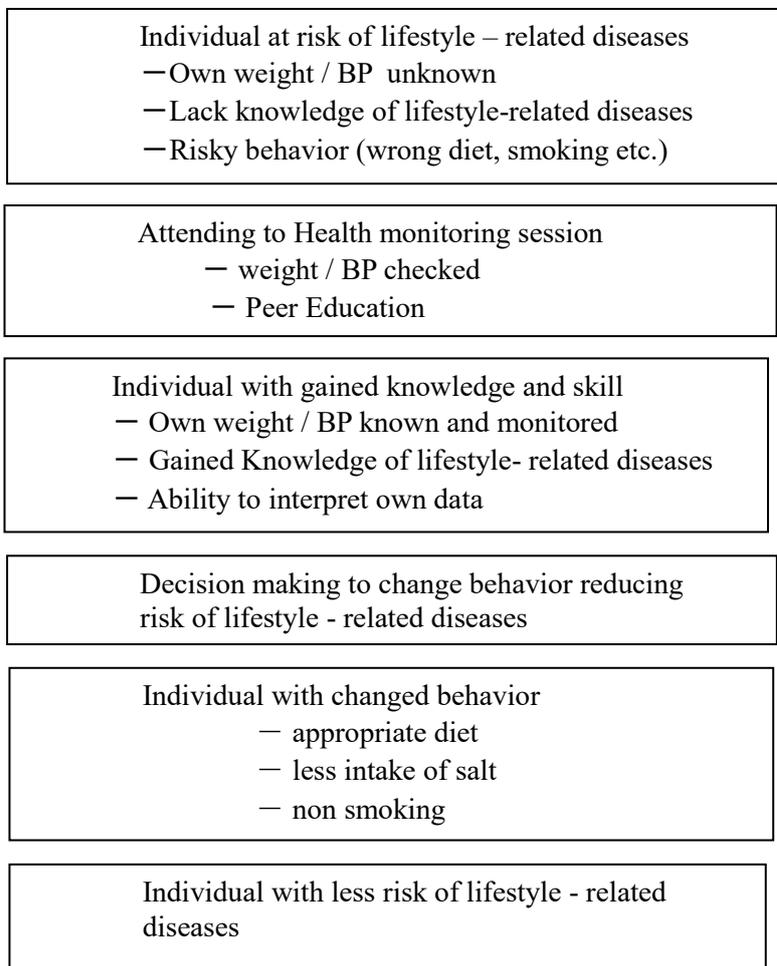


Figure 2. Sugar consumption with tea

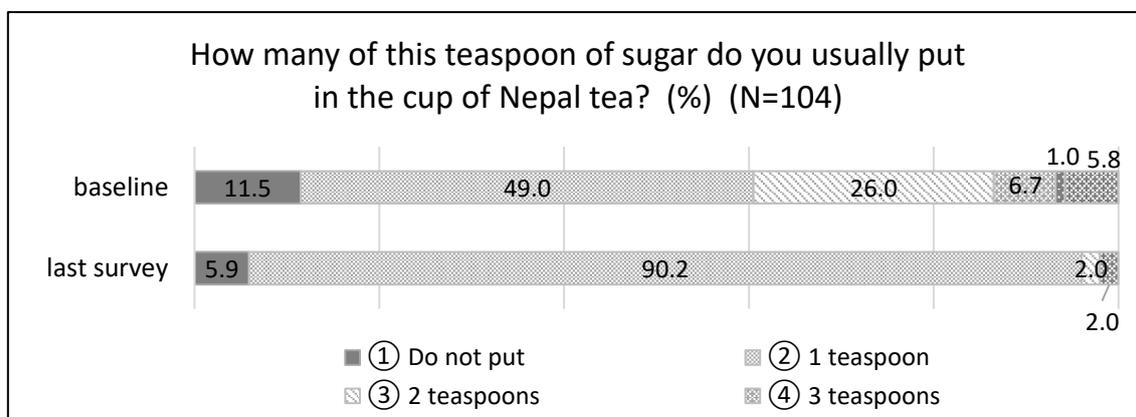


Table 1. Change of BMI after the program N=104

| | | Underweight | Normal | Overweight |
|------------------------|--------|-------------|------------|------------|
| Baseline | male | 4 (23.5%) | 9 (52.9%) | 4 (23.5%) |
| | Female | 8 (9.1%) | 62 (71.3%) | 17 (19.5%) |
| | total | 12 (11.5%) | 71 (68.2%) | 21 (20.2%) |
| After the Intervention | male | 4 (23.5%) | 10 (58.8%) | 3 (17.6%) |
| | female | 7 (8.0%) | 69 (79.3%) | 11 (12.6%) |
| | total | 11 (10.6%) | 79 (75.9%) | 14 (13.5%) |

Table 2. Change of blood pressure after the program N=104

| | Normal | Pre hypertension | Hypertension |
|------------------------|------------|------------------|--------------|
| Baseline | 42 (40.4%) | 39 (37.5%) | 23 (22.1%) |
| After the Intervention | 62 (59.6%) | 32 (30.8%) | 10 (9.6%) |