Community action to reduce harmful use of alcohol: a pilot study in the remote villages of eastern Bhutan

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ABSTRACT

Introduction: As per the Annual Health Bulletin, 2017, alcohol related liver disease is the leading cause of death in Bhutan. There were 190 deaths due to harmful use of alcohol in 2016 and alcohol liver disease (ALD) incidence was 46 per 10,000 people. Community action to reduce harmful use of alcohol in the communities is one of the strategies being implemented in Bhutan. However, the impact of such community action is not assessed in the country. Therefore, this pilot study was conducted in two gewogs (sub-district) of Trashiyangtse dzongkhag to assess the short-term effects of this community action to reduce alcohol use. **Methods:** This pilot study involved one intervention and one control community. The interventions were developed and implemented in consultation with the community by empowering them for monitoring to ensure effectiveness of the intervention. The data were collected pre and post-intervention in both the gewogs through repeated cross-sectional surveys. Results: The practice of offering tshogchang decreased from about 99% to about 50% after the intervention. Practice of children drinking alcohol decreased by 6.83%. The average monthly spending on alcohol reduced from about Nu. 418 to about Nu. 97, and the amount of grains used for brewing decreased from about 34 Kg to 18 Kg, after the intervention. **Conclusions:** This study found that the community action is effective in bringing positive impacts in reducing harmful use of alcohol in community. Therefore, expansion of such community action in other communities in Bhutan with similiar context is strongly recommended..

Keywords: Alcohol; Community action; Operational research.

INTRODUCTION

Harmful use of alcohol is a cause for wide range of health burden globally, both in terms of morbidity and mortality, as well as adverse social consequences[1]. Every year 3.3 million deaths, about 5.9% of all deaths are due to harmful use of alcohol[2]. In Bhutan, alcohol consumption is a major public health problem and harmful use of alcohol is causing undesirable consequences in the life of individuals, families and society. The per capita alcohol consumption in Bhutan is higher than global consumption[3]. As per administrative data collected from the health centres, alcohol related liver disease is the leading cause of death in the country. There were 190 deaths due to harmful use of alcohol in 2016 and alcohol liver disease incidence was 46 per 10,000 population[4]. Apart from health, alcohol use poses threat to social harmony, loss in economy, aggravates suicide and increases crime[5]. For instance, as per a report published by a civil society organization, Respect Educate Nurture and Empower Women (RENEW), about 70% of domestic violence was attributed to alcohol use[6].

The National Health Survey conducted in 2012 found that 30.6% of Bhutanese population aged 18-75 years currently uses alcohol[7]. The prevalence of current drinker was 1% and 13% among those aged 10-14 years and 15-24 years, respectively. The usual source of alcohol for 56% of the current drinkers in Bhutan were home brewed. Similarly, the national survey for non-communicable disease risk factors and mental health using the World Health Organisation (WHO) STEPS approach in Bhutan 2014, found that 42.4% of adults aged 18-69 years drank alcohol in the preceding 30 days[8]. The same survey found that 57.9% of the respondents reported having consumed unrecorded alcohol. On the other hand, a study in Thimphu found very poor compliance, by the alcohol outlets, to the existing policies and regulations on alcohol[6].

In this light, the Royal Government of Bhutan has initiated numerous strategies to reduce harmful use of alcohol in the country through its "National Policy and Strategic Framework to Reduce Harmful use of Alcohol: (2015-2020)"[9]. One of the strategies is community action to reduce harmful use of alcohol in the communities. World Health Organization regards community action as one of the effective measures to deter alcohol use in communities[10]. However, there is no research evidences on the effectiveness of community action in Bhutan. Therefore, this

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pilot study was conducted in two communities of Trashiyangtse dzongkhag to assess the effects of community action to reduce harmful use of alcohol in Bhutan.

Community action: a thematic approach to implementation
The community intervention was not aimed at prohibition of alcohol but to reduce alcohol use in the community. The intervention mechanism for the community action recommended by the World Health Organization was adapted in this study, as summarized in Figure 1.

PROGRAMME PREPARATION
1. Developed study protocol and adapted community intervention for reduction of harmful alcohol use.
2. Secured fund for the study project
3. Obtained Administrative approval from Ministry of Health
4. Obtained ethical approval from Research Ethics Board of Health (Date:21/12/2016)
5. Obtained Administrative approval from District and Gewog Administration (Date:11-12/01/2017)
6. Discussion with Gewog Administration and local healthcare providers with regards to the study project.

PRE-INTERVENTION BASELINE SURVEY
1. Focused group discussion in the Community (Date:13-14/01/2017)
2. Baseline survey (Date:16-26/01/2017)

TRAINING OF COMMUNITY CORE GROUP ON INTERVENTION METHODS

IMPLEMENTATION AND MONITORING BY COMMUNITY
1. Community Involvement
    1.1. Gups, mangmis, tshogpas, lams, few informed and influential people of community led the Community Action.
    1.2. They enacted community bylaws to reduce alcohol use in family and community events. Bylaws were monitored by the local leaders (tshogpas). Some of the specific provisions of the bylaws included;
        1.2.1. Reducing and restricting availability of alcohol in the community (discouraging home brewing)
        1.2.2. Reducing use of alcohol in social events
        1.2.3. Reducing sale of home brewed alcohol
        1.2.4. Referring alcoholics for detoxification
        1.2.5. Removing illegal bars in the community
2. Health Involvement
    2.1. District Health Officer, Mental Health Program from MoH Headquarters, Health Assistants of the communities, and Village Health Workers were involved in creating awareness.
    2.2. Raising awareness of public health problems (Health, social, economic) caused by harmful use of alcohol and ensuring support (Health services available and Preventive measures) for treatment of alcohol dependence.

POST-INTERVENTION EVALUATION SURVEY
1. Short-terms outcomes (after four months of intervention)
    1.1. Improvement in knowledge, attitude, and practice
    1.2. Community bylaws to deter alcohol use
    1.3. Reduction in alcohol use and in the community
    1.4. Availing Health Services
2. Long Term outcomes (after 2-5 years of intervention)
    2.1. Reduced harmful use of alcohol in the community
    2.2. Reduced alcohol related morbidity, injuries, and mortality
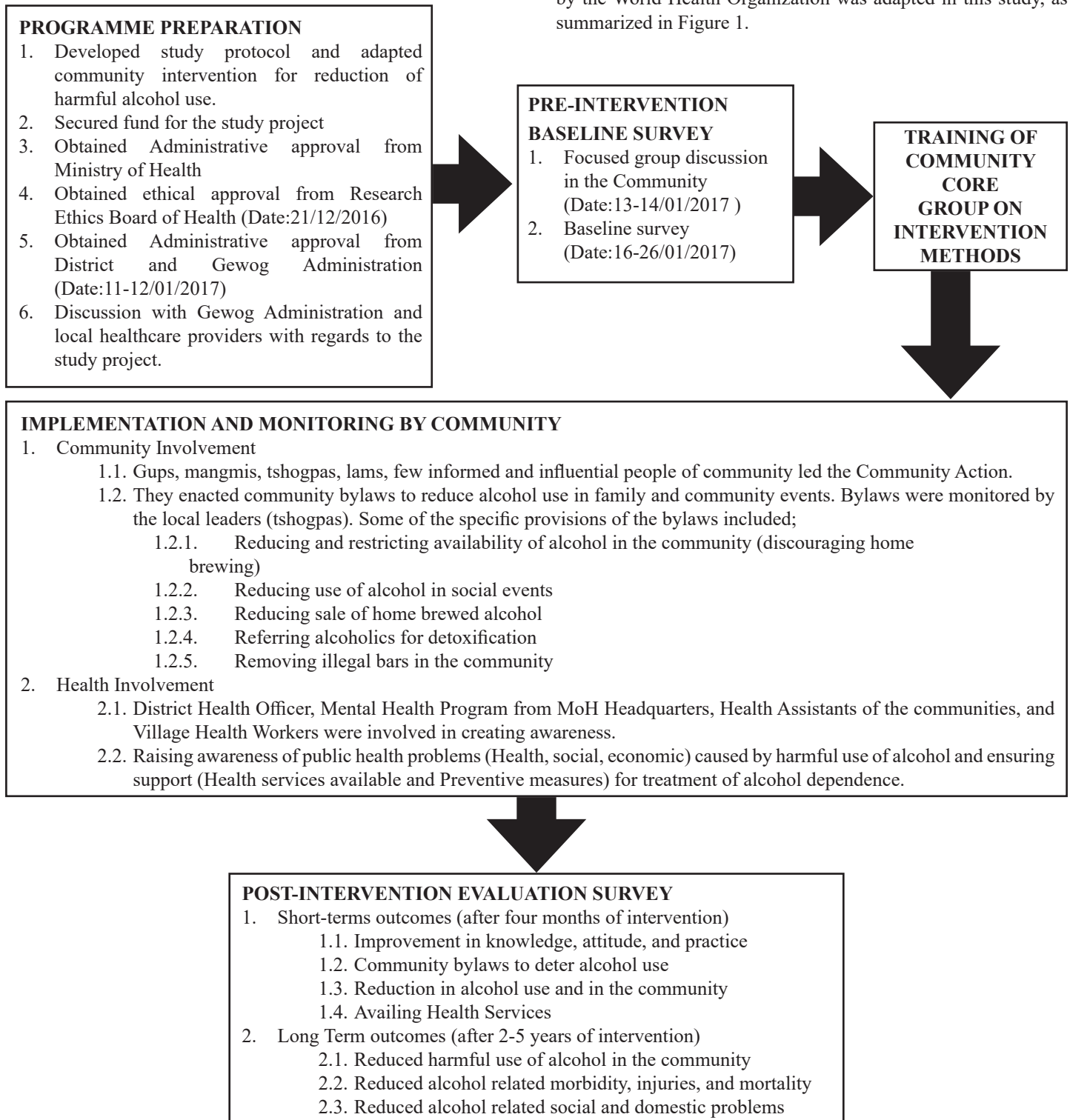   2.3. Reduced alcohol related social and domestic problems

Figure 1. Schematic diagram for research activities: The study on community action for reduction of harmful alcohol use in Trashiyangtse, Bhutan, 2016

Administrative clearance was sought from Ministry of Health and Dzongkhag Administration to implement the community intervention to reduce harmful use of alcohol in Toetsho gewog. Objectives and benefits of community action was discussed with Toetsho gewog administration and they agreed to render full support for the initiative. It was followed by discussion with gup, mangmi and tshogpas on existing alcohol issues and local interventions to reduce alcohol use.

One day facilitators training was organized with all tshogpas, three influential people from each chiwog and health assistants. They were sensitized on the objectives and intervention mechanism to reduce harmful use of alcohol. During the facilitators training, facilitators also drew an action plan which included awareness programme, framing of bylaws and monitoring mechanism to reduce alcohol use in the communities.

As per the action plan, awareness programmes on harmful effects of alcohol were conducted in all chiwogs under Toetsho gewog by health assistants and tshogpas. The social, health, economic and legal issues related to alcohol use were covered during the awareness program. After the awareness session, issues related to alcohol use in the communities were discussed and accordingly local bylaws were drawn up to reduce alcohol use in the community events and general consensus was sought for implementation. Example of some of the specific bylaws to reduce harmful use of alcohol were home brewing was discouraged in the communities, alcohol use during religious rituals was replaced by soft drinks, disallowing sell of alcohol in grocery shops and communities started contributing a fixed amount instead of alcohol during bereavement in the communities. A group was identified in the chiwog to monitor the bylaws and the group have been continuously monitoring the compliance of the bylaws agreed in the communities. All community events like tshechus, religious rituals and bereavements were monitored to reduce alcohol use. Gewog administration restricted unlicensed sale of industrial alcohol in the communities. There has been good cooperation from the community as well as the group who are responsible for monitoring. The Mental Health Programme of the Ministry of Health has been periodically following-up with the monitoring group to ensure compliance ever since the start of the study project.

MEHODS

Study design
This intervention community trial was conducted using mixed method to assess the effectiveness of community intervention to reduce harmful use of alcohol. Focus group discussion, in-depth interview and structured household interview questionnaires were used to measure the effectiveness.

Study setting
The number of alcohol related cases is comparatively higher in rural communities and Trashiyangtse is one of the dzongkhags with the highest alcohol consumption as per National Health Survey, 2012[7]. Among eight Gewogs in Trashiyangtse district, Toedtsho and Jamkhar gewog (block) had higher number of households consuming alcohol as per annual household survey of Trashiyangtse[11]. Hence these two areas were purposively selected for this trial. Lucky draw among these two areas were conducted to select one as trail and other as interventional gewog. These two gewogs are geographically apart and have similar social, and cultural practices. The study population from two gewogs consisted of 662 households, with population of 2398. Toetsho gewog has five chiwogs (sub-block) with 357 households and population of 1391. Similarly, Jamkhar gewog has five chiwogs with 305 households and population of 1007 people.

Sample size and sampling technique and data analysis
The sample size was calculated using online sample size calculator OpenEpi. It was assumed that the proportion of participants with comprehensive knowledge on regulations to deter alcohol will double from 11% to 22% in the interventional group with 80% power, 95% two-sided significance level, equal samples from control and intervention gewogs, and four percent non-responders. A total of 409 households, 205 from experimental gewog and 204 from control gewog were interviewed pre- and post-intervention. Selection of the households was done through simple random method from the list of households from each gewog. The households list collected and maintained, for annual household survey, at the Basic Health Units (BHU) of respective gewog were used as the sampling frame. For qualitative purpose, five focus group discussion (FGD) each was held at both the gewogs prior to intervention. The local leaders, village health workers (VHWs) and health assistant participated in focus group discussion. Set of same discussion guide was used during FGD for pre and post intervention. The discussion was audio taped after obtaining prior informed consent and field note were also taken. The information saturation was reached after 4-5 FGDs. Two FGD was held in both gewogs post intervention.

Data variables, sources of data and procedures of data collection
All data about socio-demographic characteristics of participants (age in years, sex, marital status, occupation, and qualifications) and outcome variables (knowledge, attitude, and practice) were collected pre- and post-intervention using a structured questionnaire. The practice related variables assessed comprised of offering tshogchang (the traditional practice of offering alcohol to guests), alcohol use being problematic in community, children drinking alcohol, household member who drinks alcohol, current drinker, home brewing of alcohol, alcohol use during religious rituals, alcohol use resulting in violence. The knowledge related variables tested were proportion of respondents knowing that an excessive alcohol use has ill effects, chronic alcohol problem can be treated at health facilities, alcohol liver disease is a non-communicable disease, as well as the proportion of respondents

having comprehensive knowledge on regulations to deter alcohol use. Similarly, the attitude related variables were the proportion of respondents agreeing that alcohol use during pregnancy will affect baby, alcohol liver disease is transmitted from people to people, alcohol use can be substituted during rituals by juice, alcohol will increase production of breast milk, alcohol use will increase energy to work, alcohol will cure depression, alcohol will increase confidence, and alcohol can reduce pain.

The existing regulations to curtail alcohol use in Bhutan include: 1) Tuesday is dry day (can't sell alcohol), 2) alcohol trading hours is from 1PM to 10PM, 3) sell of alcohol to individuals <18 years is prohibited, 4) sell of alcohol to an intoxicated person is prohibited, 5) sell of home brewed alcohol is illegal, 6) drink driving is illegal, and 7) sell of alcohol near schools and monasteries are not allowed[9].

Data were collected once prior to intervention (baseline data) and four months after the interventions (end line data) from both the gewogs through repeated cross-sectional surveys.

The data were double entered and validated in EpiData Entry software (version 3.1 for entry, EpiData Association, Odense, Denmark) and analysed using STATA/IC 15 (Serial Number: 301506220041, StataCorp. 2017. Stata Statistical Software: Release 15. College Station, TX: StataCorp LLC). Proportions were calculated for categorical variables while mean and standard deviation were calculated for continuous data. Differences in proportions were tested using the chi-square test. The t-test was used to assess difference in means. The level of significance was set at 5%.

The transcriptions of the audio records of the focus group discussion and field notes were the primary qualitative data source. The transcriptions were read line-by-line to gain a descriptive understanding of the responses. Thematic analysis was performed and findings were grouped under different themes to augment the quantitative findings.

RESULTS

Of the targeted 410 households, 409 participated in the study resulting into 99.88% response rate. The demographic characteristics of the participants from the experimental and the control communities were similar. The mean age of the participants from the experimental community was 44.2 years while it was 45.8 years in the control (Table 1). There were about 35% male and about 99% were farmers in both the communities. After the community action the proportion of participants with comprehensive knowledge on regulations to deter alcohol use doubled in intervention community, from 9.27% pre-intervention to 18.05% (p-value 0.010) (Table 2). The increase was also significant when the proportion in the intervention group was compared to control group, 18.05% vs. 8.78% respectively (p-value 0.006). There was also significant increase in people knowing that the chronic alcohol problem can be treated at health facilities. The proportion increased, in the interventional

community, from 54.15% pre-intervention to 76.10% post-intervention (p-value 0.000).

The attitude of the people regarding the alcohol and related problem also improved in the interventional gewog after the community action. The percentage of people who agreed that the alcohol liver disease is a transmitted from people to people decreased from 16.10 to 6.34 after the intervention (p-value 0.002). The proportion of people in the experimental group who agreed that the alcohol will increase breast milk for breastfeeding mothers significantly decreased from 28.78% to 10.24% after the intervention (p-value 0.000). Similarly, there were some significant positive changes on people's attitude about alcohol increasing energy to work, curing depression, increasing confidence, and reducing pain (Table 2).

With regards to practices, the practice of offering tshogchang in the intervention community significantly decreased from 98.54% to 50.24% after the intervention (p-value 0.000). The decrease in tshogchang offering practice was significant even when compared with the control group which had 64.39% in the post-intervention survey (p-value 0.002). There were 6.83 percentage points reduction (p-value 0.002) in children drinking alcohol in the intervention community. As a result of the community action, the reductions in alcohol use being problematic in the community, household members drinking, household brewing alcohol, alcohol use during religious rituals, and alcohol use resulting in violence at home were significant (Table 2).

The average monthly spending on alcohol reduced from Nu. 417.54 (95% CI: 321.21-513.87) to Nu. 97.32 (95% CI: 16.28-178.37) after the intervention (Table 3). Similarly, the amount of grains used for brewing decreased from 33.45 Kg (95% CI: 30.88-36.02) to 18.00 Kg (95% CI: 16.61-19.40).

Findings from qualitative study
The practice of carrying alcohol by neighbours during funeral was replaced by new system of contributing Nu 30 per household in the intervention community.

> "Culture of taking alcohol in the funeral is completely stopped after the plan and taking alcohol in funerals is replaced with a new system of contributing Nu 30" (FDG intervention gewog)

Similarly, there was a consensus in the intervention community to substitute alcohol with other possible alternatives during religious ceremonies to deter alcohol use. The participants of the FDG reported that the intervention is very useful to the community and they said that there was reduction in consumption of alcohol in the intervention community.

> "The awareness programme is very useful in reducing the alcohol consumption. There was about 70 to 80% reduction in consumption of alcohol. Therefore, we have full support in the future." (FDG intervention gewog)

Table 1. Demographic characteristics of participants of the study on community action for reduction of harmful alcohol use in Trashiyangtse, Bhutan, 2016

Characteristics		Pre-intervention (n=409)	Post-intervention (n=410)
Age in years (mean age)			
Experimental		44.2	46.0
Control		45.8	50.2
Gender (Percent)			
Experimental	Male	35.8	51.2
	Female	64.2	48.8
Control	Male	34.8	35.1
	Female	65.2	64.9
Marital Status (Percent)			
Experimental	Married	84.4	84.4
	Others(Single/Divorcee/widow)	15.6	14.6
Control	Married	85.3	93.2
	Others(Single/Divorcee/widow)	14.7	6.8
Occupation (Percent)			
Experimental	Farmers	99.4	97.4
	Other*	0.6	2.6
Control	Farmers	98.8	96.8
	Other*	1.2	3.2
Qualifications (Percent)			
Experimental	No Formal Education or Illiterate	84.9	82.9
	Formal Education or Literate	15.1	17.1
Control	No Formal Education or Illiterate	87.3	79.0
	Formal Education or Literate	12.8	21.0

Others=Housewife, civil servants, private, business & others

Table 2. Knowledge, attitude and practice of participants of the study on community action for reduction of harmful alcohol use in Trashiyangtse, Bhutan, 2016 (*n*=205 except for pre-intervention at control gewog=204)

Outcome indicators	Pre/Post intervention	Control *Gewog*		Intervention *Gewog*		Control vs. Intervention
		Participant n (%)	*p*-value (χ2)	Participant n (%)	*p*-value (χ2)	*p*-value (χ2)
Knowledge						
Excessive alcohol use has ill effects (Yes)	Pre	85.78	0.120	95.12	0.400	0.001
	Post	90.73		93.17		0.364
Comprehensive knowledge on regulations (seven) to deter alcohol use†	Pre	12.25	0.252	9.27	0.010	0.330
	Post	8.78		18.05		0.006
Alcohol liver disease (ALD) is noncommunicable disease (NCD) (Yes)	Pre	80.39	0.000	50.73	0.092	0.000
	Post	58.05		59.02		0.841

Chronic alcohol problem can be treated at health facilities (Yes)	Pre	65.69	0.000	54.15	0.000	0.017
	Post	88.29		76.10		0.001
Attitude						
Alcohol use during pregnancy will affect baby (Agree)	Pre	91.67	0.329	93.17	0.216	0.566
	Post	94.15		89.76		0.102
Alcohol liver disease is a transmitted from people to people (Agree)	Pre	6.86	0.000	16.10	0.002	0.003
	Post	20.49		6.34		0.000
Alcohol use can be substituted during rituals by juice (Agree)	Pre	83.33	0.000	85.85	0.001	0.480
	Post	95.12		95.61		0.814
Alcohol will increase breast milk for breastfeeding mothers (Agree)	Pre	30.88	0.310	28.78	0.000	0.642
	Post	26.34		10.24		0.000
Alcohol use will increase energy to work (Agree)	Pre	27.94	0.851	33.66	0.000	0.211
	Post	28.78		11.71		0.000
Alcohol will cure depression (Agree)	Pre	16.18	0.109	32.68	0.000	0.000
	Post	22.44		16.59		0.135
Alcohol will increase your confidence (Agree)	Pre	63.24	0.788	68.78	0.045	0.236
	Post	61.95		77.56		0.001
Alcohol can reduce pain (Agree)	Pre	19.12	0.005	40.00	0.000	0.000
	Post	31.22		16.10		0.000
Practice						
Practice of offering *tshogchang* in their community	Pre	97.06	0.000	98.54	0.000	0.308
	Post	64.39		50.24		0.004
Alcohol use problematic is in their community (Yes)	Pre	91.67	0.000	93.17	0.000	0.566
	Post	79.02		74.15		0.244
Do children drink alcohol (Yes)	Pre	7.84	0.052	8.78	0.002	0.731
	Post	3.41		1.95		0.359
Household member who drinks alcohol, even occasional drinkers (Yes)	Pre	64.22	0.000	62.44	0.000	0.709
	Post	39.51		27.32		0.009
Current drinker, drank alcohol in past 30 days (Yes)	Pre	66.41	0.159	58.59	0.009	0.194
	Post	56.79		78.57		0.008
Household brew alcohol (Yes)	Pre	94.61	0.007	91.22	0.002	0.182
	Post	86.83		80.49		0.082
Alcohol use during religious rituals (Yes)	Pre	95.10	0.622	96.10	0.000	0.622
	Post	96.10		49.27		0.000
Alcohol use resulted in violence at home in last 3 months (Yes)	Pre	6.86	0.278	8.29	0.000	0.585
	Post	4.39		0.49		0.010

†*Tuesday as dry day, Alcohol trading hours between 1PM-10PM, Age limit of selling alcohol is 18 years and above, Should not sell alcohol to intoxicated person, Cannot sell home brewed alcohol, Drink driving is prohibited, Selling alcohol near schools and monasteries is prohibited*

Table 3. Practice of participants of the study on community action for reduction of harmful alcohol use in Trashiyangtse, Bhutan, 2016

Outcome indicators	Pre/Post intervention	Control Gewog				Intervention Gewog				Control vs. Intervention
		Participants (n)	Mean x̄ (95%CI)	Std. Dev	p-value (t-test)	Participants (n)	Mean x̄ (95%CI)	Std. Dev	p-value (t-test)	p-value (t-test)
Practice										
Number of household members who drink alcohol‡	Pre	132	1.38 (1.28-1.50)	0.61		128	1.39 (1.28-1.49)	0.60		0.963
	Post	81	1.46 (1.32-1.59)	0.61	0.438	56	1.21 (1.10-1.33)	0.41	0.055	0.011
Average monthly spending on alcohol (in Nu)‡	Pre	132	167.84 (124.69-211.00)	250.64		128	417.54 (321.21-513.87)	550.77		0.000
	Post	81	246.42 (134.16-358.68)	507.68	0.134	56	97.32 (16.28-178.37)	302.63	0.000	0.050
Amount of grains (maize, rice, wheat, potato and millet) used for brewing (in Kg)§	Pre	193	36.62 (28.35-44.90)	58.28		187	33.45 (30.88-36.02)	17.84		0.476
	Post	178	29.25 (26.85-31.66)	16.27	0.104	165	18.00 (16.61-19.40)	9.08	0.000	0.000

‡ *Nu=Ngultrum (Bhutanese currency); Kg=Kilogram; Std. Dev=Standard Deviation*

Asked only to those households having member(s) who drink alcohol, even occasional drinkers. Therefore, n=132 for pre-intervention and n=81 for post-intervention in the control gewog; n=128 for pre-intervention and n=56 for post-intervention in the intervention gewog.

§ *Asked only to those households that brew alcohol. Therefore, n=193 for pre-intervention and n=178 for post-intervention in the control gewog; n=187 for pre-intervention and n=165 for post-intervention in the intervention gewog*

"We are planning for reducing consumption of alcohol slowly and we are expecting towards completely stopping harmful use of alcohol within next four to five years" (FDG intervention gewog)

DISCUSSION

This study found that the community action is effective in achieving outcomes related to reducing harmful use of alcohol in the communities. Intervention has been effective in reducing alcohol use during social events, discouraged brewing and expenditure on alcohol has reduced. If all these short-term outcomes are sustained, through continuous monitoring, then these short-term outcomes will lead to achievement of long-term outcomes such as reduction in alcohol-related morbidity, mortality, hospital admissions, motor vehicle accidents, etc.

The proportion of current drinkers, defined as those who drink in the past 30 days preceding the survey, significantly increased from 58.59% to 78.57% in the intervention community. This unexpected increase in the proportion of current drinkers in the intervention community is due to two community activities organized in the intervention community during the study period. It is a common practice in Bhutan for people to get together and drink alcohol during such occasions. Further, it is believed that many recovering alcohol dependent people get relapsed during the annual household religious activity (Loche) or similar gatherings of people. Therefore, interventions targeted at discouraging people from drinking alcohol during such occasion could yield a good result.

There is no literature available on assessment of short-term outcomes of community action for reducing harmful use of alcohol. All previous studies, done in other countries, were on the long term outcomes such as alcohol-related mortality, hospital admissions, motor vehicle accidents, alcohol sales, arrests or crime, injury, social or health service usage[12]. Therefore, the findings of this study are not directly comparable with those studies. Nonetheless, this study supplements the findings of another study conducted in Bhutan, which proved that the multi-sector programme is effective in improving the compliance, by the alcohol outlets to the existing alcohol related regulations[6]. This indicates that the community action and multi-sector programme will be useful in Bhutan for reducing the harmful use of alcohol. Although the community action was effective in decreasing the practice of home brewing there is a high possibility of quick infiltration of industrial alcohol in the community if appropriate safeguards are not put in place. This concern was echoed during the FGD "if we are not vigilant then people may switch to industrial alcohol once the availability of the local alcohol is restricted in the locality". Therefore, measures to curtail such undesirable switch needs to be inbuilt in the community action intervention.

National Policy and Strategic Framework to Reduce Harmful use of Alcohol (2015-2020) mandates all local leaders to roll out community action to reduce harmful use of alcohol. However, creating contextualized bylaws and regular monitoring in the community have greater possibility to reduce alcohol consumption in the community.

Some of the limitations of the study include; firstly, only one intervention and one control gewog were selected in the study due to budgetary and time constraint. Secondly, the long term impacts such as reduction in heavy episodic drinking and its related consequences were not assessed in this study. Therefore, more studies to assess the long-term outcomes of the community action involving more number of communities needs to be conducted to generate stronger evidences. However, this is the first study conducted in Bhutan to assess the effectiveness of community action for reducing harmful use of alcohol. Therefore, the findings would be very useful for local policy and decision making in terms of strengthening public health interventions for reducing harmful use of alcohol in Bhutan and beyond.

Some of the implications of this study include, firstly, the community action for reducing harmful use of alcohol could be expanded to all communities as it is proven to be effective by this study in achieving at least the short-term outcomes. Secondly, the alcohol related knowledge, attitude and practices in the communities (in the control gewog and pre-intervention in the interventional gewog) were found to be very poor. This indicates the alcohol related knowledge, attitude and practices among the people is generally poor in Bhutan. Therefore, the activities aimed at improving the alcohol related knowledge, attitude and practices among the people need to be strengthened so that there will be reduction in harmful use of alcohol and its consequences.

CONCLUSIONS

This study found community action to be effective in bringing out positive impacts on short-term outcomes related to reducing harmful use of alcohol in community. Control and intervention gewogs were used for assessing effectiveness whereby interventions are tested scientifically. Therefore, expansion of such community action in other communities in Bhutan with similar context is strongly recommended. However, same interventions may not be applicable and may require to contextualize the interventions.

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REFERENCES

1. Medina-Mora ME, Monteiro M, Room R, Rehm J, Jernigan D, Sánchez-moreno D, et al. Alcohol use and alcohol use disorders. 2013.127–43. [Full Text]
2. WHO.Alcohol: Key facts .WHO [Internet]. 2015 [cited 2016 Sep 13]. [Full Text]
3. Dorji L. Alcohol use and abuse in Bhutan. 2012 ed. Thimphu: National Statistics Bureau: 2012; 41-45. [Full Text]
4. Annual Health Bulletin. Thimphu: Ministry of Health; 2016. 12 p. [Full Text]
5. Shield KD, Monteiro M, Roerecke M, Smith B, Rehm J. Alcohol consumption and burden of disease in the Americas in 2012: implications for alcohol policy. 2015; 38 (6): 442–9. [Full Text]
6. Dorji G. Alcohol Control in urban Bhutan. Thimphu: Ministry of Health; 2015. 7 p.
7. Ministry of Health. National Health Survey 2012 Report. Thimphu: Ministry of Health; 2012. 123 p.
8. National survey for non-communicable disease risk factors and mental health using WHO-STEPS approach in Bhutan. World Health Organization; 2014. 15-19.
9. National Policy and Strategic Framework to reduce harmful use of alcohol (2015-2020). Thimphu: Ministry of Health; 2015. 13-17.
10. WHO: Regional Office for South-East Asia. Community action to reduce harm from alcohol use. 2009. [Full Text]
11. Annual Household District Survey, Trashiyangtse Disrict. 2015.
12. Shakeshaft A, Doran CM, Petrie D, Gilmour S, Shakeshaft A, Doran C, et al. The effectiveness of community action in reducing risky alcohol consumption and harm: a cluster randomized controlled trail. PPLos Med. 2014 Mar; 11(3). [Full Text | DOI]

AUTHORS CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

DKS: Concept, design and analysis, manuscript writing and review.

MSG: Concept, design, analysis and manuscript review.

DW: Design and manuscript review.

MD: Design, analysis and manuscript review.

TT: Concept, design, data collection and analysis, manuscript review.

Author agree to be accountable for all respects of the work in ensuring that questions related to the accuracy and integrity of any part of the work are appropriately investigated and resolved.