

A cross sectional study on magnitude and pattern of substance abuse among youth in rural India

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Abstract

Introduction: The United Nations, for statistical purposes, defines 'Youth' as those persons between the age of 15 and 24 years. Approximately more than one billion youth live in the world today which contributes around 18% of the world's population. Majority (almost 85%) of the world's youth live in developing countries, with approximately 60% in Asia alone. In the last few years, due to socio-economic and political factors, there have been increasing health problems among youth: unemployment, suicide, substance abuse, sex related offences and general adjustment problems. Youth and adolescent drug abuse is one of the major areas of concern in adolescent and young people's behavior. WHO defines substance abuse as "harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs." Substance abuse is major public health problem amongst youth. Data are scarce on pattern of substance abuse and its association with socio demographic factors. Hence current study was an attempt to find the magnitude and pattern of substance abuse among youth in rural area.

Aims and Objective: To find the magnitude of substance abuse among the youth in rural area and its socio-demographic correlates.

Materials and Method: The present study was a community based observational descriptive study, cross sectional in design, conducted in the field practice area of Rural Health Training Centre of Mahatma Gandhi Institute of Medical Sciences, Sewagram which is located in rural central India, between November 2013 to December 2015. Field practice area of RHTC serves 27 villages catering the population of 70,000. Four villages were randomly selected from the field practice area having total population 4045. All the youth (15-24 years) were included in the study (Complete Enumeration). Out of the total 789 youth, 59 youth refused to participate. Remaining 730 youth were included in final analysis. Predesign and pretested proforma was used for data collection. Ethical consideration was taken from institutional ethical Committee.

Statistical analysis: Data entry and analysis was done by using EPI-Info version 6.04 software. Chi square test was applied to obtained statistical significance wherever necessary in the study.

Results: Magnitude of substance abuse among youth was found to be 44.1%. It was 79.5% in males as compared to 20.5% in females and this was found to be statistically significant ($P < 0.05$). Smokeless tobacco was prevalent form of substance abuse (75.8%) followed by alcohol (10.9%). 25.1% of youth had started substance abuse below 10 years of age. Peer pressure was the commonest reason (42.2%) and Mass media was the commonest source of information. Substance abuse was significantly associated with educational status, socio-economic status, and youth from the joint families and not associated with marital status and caste.

Conclusions: Magnitude of substance abuse was found to be 44.1%. Smokeless tobacco was the prevalent form (75.8%) followed by alcohol (10.9%). Substance abuse was significantly associated with educational status, socio-economic status, and youth from the joint families and not associated with marital status and caste.

Keywords: Substance abuse, Youth, Hazards of substance abuse, Behavioural pattern.

Introduction

The World Health Organization (WHO) defines Substance abuse as "Harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs".⁽¹⁾ Repeated use of these substances can lead to dependence syndrome-a cluster of behavioural, cognitive, and physiological phenomena which involves a strong desire to take the drug, and difficulties in controlling its use.⁽¹⁾ Drug dependence poses social as well as economic loss to the country.⁽²⁾ The United Nations, for statistical purposes, defines 'Youth' as those persons between the age of 15 and 24 years.⁽³⁾ Approximately more than one billion youth live in the world today. This means that 18% of the world's population or approximately one person in five is between the age of 15 and 24 years i.e. "youth".⁽⁴⁾

Majority (almost 85%) of the world's youth live in developing countries, with approximately 60% in Asia alone.⁽⁴⁾ Youth and adolescent drug abuse is one of the major areas of concern in adolescent and young people's behaviour.⁽⁵⁾ Youth in a rural area is vulnerable population where in small changes or modification of their lifestyle done today will determine the health of these youth in the future and indirectly will reflect on development and betterment of community. In the last few years, due to socio-economic and political factors, there have been increasing health problems among youth: unemployment, suicide, substance abuse, sex related offences and general adjustment problems. The magnitude of the problem is scarcely reflected or highlighted in the official survey data or statistics.⁽⁶⁾

According to global youth tobacco survey in Maharashtra, 12.9% adolescent (13-15 years) are currently consuming some tobacco product.⁽⁹⁾ The National Household Survey of Drug Use in the country is the first systematic effort to document the nationwide prevalence of drug use.⁽²²⁾ Alcohol (21.4%) was the primary substance used (apart from tobacco) followed by cannabis (3.0%) and opioids (0.7%).⁽²²⁾ There was a marked variation in alcohol use prevalence in different states of India (current use ranged from a low of 7% in the western state of Gujarat to 75% in the North-eastern state of Arunachal Pradesh.⁽²³⁾ A study by Kangule et al among tribal youth in Maharashtra found the Prevalence of substance abuse to be 64.91%⁽⁷⁾ while a study from urban slums in India found the prevalence of substance abuse 43.3%.⁽²⁴⁾

Data is scarce about magnitude and pattern of substance abuse among rural youth hence present study is an attempt to study the magnitude and pattern of substance abuse in rural area with their socio demographic correlates.

Materials and Method

The present study was a community based observational descriptive study, cross sectional in design, conducted in the field practice area of Rural Health Training Centre of Mahatma Gandhi Institute of Medical Sciences, Sewagram which is located in rural central India, between November 2013 to December 2015. Field practice area of RHTC serves 27 villages catering the population of 70,000. Four villages were randomly selected from the field practice area having total population 4045.

Sample Size and Sampling Method: Youth contributes around 18 to 20% of the total population. The total population of the four villages was 4045. Out of which youth population contributed 789. All the youth (15-24 years) were included in the study (Complete Enumeration). Out of the total 789 youth, 59 youth refused to participate. So, remaining 730 youth were included in final analysis.

Study Tool: The study tool was a predesign and pretested proforma which was filled by the investigator. Verbal and written consent was obtained before filling the proforma.

Study Variables: The data collection tool included the basic demographic information about participants like age, sex caste socio-economic status, education, occupation etc.

It also had the questions related to magnitude and pattern of substance abuse.

Age was taken in completed years and education was considered using completed years of schooling. Caste categorisation was done using National sample survey Organization 60th round (Ministry of statistics and Programme implementation Government of India 2004) and socio- economic status was assessed by asking type of ration card issued by Government.

Substance abuse included smoking (cigarette filter/ non filter/ bidi/ chillum/ hookah and smokeless tobacco included kharra/ tobacco/ ghutkha/ mawa/ masher/ snuff. Alcohol included use of all type of alcohol and other form of substance abuse included Bhang/ Ganja/Charas/ Opium/ Herion/ Cocaine etc.

Ethical consideration: Ethical approval taken from Institutional ethical committee. In participants with morbidity confidentiality was maintained and treatment was facilitated by referring them to nearest health facility.

Statistical analysis: Data entry and statistical analysis was done by using Epi- Info version 6.04 software. Chi square test was applied to obtained statistical significance wherever necessary in the study.

Results

The description of various socio-demographic characteristics is shown in **Table 1**. Magnitude of substance abuse among youth was found to be 44.1%. It was 79.5% in males as compare to 20.5% in females and this was found to be statistically significant ($P < 0.05$). Smokeless tobacco (75.8%) was the commonest form of substance abuse followed by alcohol (10.9%). Tobacco smoking was prevalent in 7.8% of the youth. About 25.1% of the youth started it below 10 years of the age. Peer pressure (42.2%) was the main reason behind starting substance abuse. 21.8% of the youth had started it as result of inquisitiveness and experimentation (**Table 2**).

Only 10.5% of the participants use substance abuse once a day and 66.8% use it 2-5 times a day. There was increase in the quantity of substance abuse over the period of time. And only 8.1% had stopped their habit of drug abuse. Family members of almost all the substance abusers knew of their habits. 59.9% of the participants had tried to stop their habit of substance abuse. Self-motivation was the most common reason given by 53.9% of abusers for any such attempt. Counselling against substance abuse by medical or paramedical professionals was seen in 7.8% of participants. 14% had attempted to quit substance abuse because of pressure from friends or family. 41% of the participants had attempted to quit substance abuse after some illness. 2.8% of the participants had received antabuse treatment at some point of time.

40.6% of the participants had family history of substance abuse. There was a significant association between history of substance abuse among youth and family history of substance abuse as shown in Table 4. In present study among the users, 52.8% male and 47.2% female were aware about the hazards of substance abuse as compare to 54.9% males and 45.1% female among non-users. And the association between sex and awareness regarding substance abuse was not found to be statistically significant ($P > 0.05$) as shown in table one.

In present study substance abuse was significantly associated with educational status, socio-economic status, and youth from the joint families and not

associated with marital status and caste. In present study it was found that 10.9% of all substance abusers were consumers of alcohol (Table 5)

Table 1: Background characteristics

Socio demographic factors Age	Sex		Total
	Male	Female	
15-19 years	225(57.1)	182(54.2)	407(55.8)
20-24 years	169(42.9)	154(45.8)	323(44.2)
Caste (Category)			
General (Open)	168(42.7)	131(39.0)	299(41.0)
Other Backward Class (OBC)	129(32.7)	95(28.3)	224(30.7)
Schedule Caste (SC)	67(17.0)	75(22.3)	142(19.4)
Schedule Tribe (ST)	30(7.6)	35(10.4)	65(8.9)
Education			
Illiterate	12(3.0)	19(5.7)	31(4.2)
Up to 10 th class	222(56.4)	202(60.1)	424(58.1)
Above 10 th class	160(40.6)	115(34.2)	275(37.7)
Socio-economic status			
Antyodaya	17(4.3)	12(3.6)	29(4.0)
Below Poverty Line(BPL)	153(38.8)	127(37.8)	280(38.4)
Above Poverty Line(APL)	184(46.7)	163(48.5)	347(47.5)
Don't Have	40(10.2)	34(10.1)	74(10.1)
Type of Family			
Joint	266(67.5)	157(46.7)	469(64.3)
Nuclear	128(32.5)	179(53.3)	261(35.7)
Marital status			
Unmarried	301(76.4)	190(56.5)	491(67.3)
Married	93(23.6)	146(43.5)	239(32.7)
Total	394(54.0)	336(46.0)	730(100.0)

(Fig. in the parenthesis denotes percentage)

Table 2: Type of substance abuse, age of initiation and various reasons for starting substance abuse among youth

Variables Type of substance abuse	Sex		Total (n=322)
	Male (n=256)	Female (n=66)	
Smokeless tobacco	191(74.6)	53(80.3)	244(75.8)
Tobacco smoking	25(9.8)	0	25(7.8)
Alcohol	35(13.7)	0	35(10.9)
Others	5(1.9)	13(19.7)	18(5.5)
Age of initiation of substance abuse			
<10 years	74(28.9)	7(10.7)	81(25.1)
10-14 years	81(31.7)	20(31.3)	101(31.4)
15-19 years	71(27.7)	21(31.7)	92(28.6)
20-24 years	30(11.7)	18(27.3)	48(14.9)
Reason for starting substance abuse			
Stress/Tension/ Frustration/Depression/Loss of Family member/ Disharmony	4(1.5)	1(1.5)	5(1.6)
Family	80(31.3)	10(15.2)	90(27.9)
Inquisitiveness and Experimentation	59(23.0)	11(16.7)	70(21.8)
Peer Pressure	100(39.1)	36(54.5)	136(42.2)
Relief from disease/pain	13(5.1)	8(12.1)	21(6.5)

(Fig. in the parenthesis denotes percentages)

Table 3: Awareness of health hazards regarding substance abuse among youth

Awareness of health hazards of substance abuse	Users (n=322)	Non users (n=408)	Total (n=730)	Chi square value	P value
Cancer	90(27.9)	101(24.7)	191(26.2)	5.31	>0.05
Tuberculosis	25(7.8)	44(10.8)	69(9.4)		
Poor oral health (Including oral ulcer)	109(33.9)	139(34.1)	248(34.0)		
Addiction	25(7.8)	29(7.1)	54(7.4)		
Hypertension/Heart disease	10(3.1)	16(3.9)	26(3.6)		
Liver problems	24(7.4)	34(8.3)	58(7.9)		
Financial burden	20(6.2)	30(7.4)	50(6.8)		
Others	19(5.9)	15(3.7)	34(4.7)		
Source of information					
Mass media(Radio/TV)	131(40.7)	144(35.3)	275(37.7)	6.123	>0.05
Parents	41(12.7)	56(13.7)	97(13.3)		
Teachers	76(23.6)	115(28.2)	191(26.1)		
Friends	36(11.2)	58(14.2)	94(12.9)		
Community based organization	38(11.8)	35(8.6)	73(10.00)		

Table 4: Association of socio-demographic factors with substance abuse

Socio- demographic factors	Substance abuse			Chi square value	P Value
	Yes (n=322)	No (n=408)	Total (n=730)		
Age					
15-19 years	179(55.6)	228(55.9)	407(55.8)	0.006	>0.05
20-24 years	143(44.4)	180(44.1)	323(44.2)		
Sex					
Male	256(79.5)	138(33.8)	394(54.0)	150	<0.05
Female	66(20.5)	270(66.2)	336(46.0)		
Caste					
Open	131(40.7)	168(41.2)	299(41.0)	0.37	>0.05
OBC	98(30.4)	126(30.9)	224(30.7)		
SC	62(19.3)	80(19.6)	142(19.4)		
ST	31(9.6)	34(8.3)	65(8.9)		
Education					
Illiterate	21(6.5)	10(2.4)	31(4.2)	24.52	<0.05
Up to 10 th standard	156(48.4)	268(65.7)	424(58.1)		
Above 10 th standard	145(45.1)	130(31.9)	275(41.9)		
Occupation					
Household work	30(24.6)	92(75.41)	122(14.1)	76.98	<0.05
Farmer	61(69.3)	27(30.7)	88(12.0)		
Laborer	56(70.9)	23(29.1)	79(10.8)		
Student	149(37.6)	247(60.8)	396(54.3)		
Service	9(52.9)	8(47.1)	17(2.3)		
Business	14(63.6)	8(36.4)	22(3.1)		
Others	3(50.0)	3(50.0)	6(0.8)		
Socio-economic status					
Antyodaya	17(5.3)	12(2.9)	29(4.0)	30.25	<0.05
BPL	145(45.0)	135(33.1)	280(38.4)		
APL	117(36.3)	230(56.4)	347(47.5)		
Don't Have	43(13.4)	31(7.6)	74(10.1)		
Type of Family					

Joint	240(74.5)	229(56.1)	469(64.3)	26.5	<0.05
Nuclear	82(25.5)	279(43.9)	261(35.7)		
Marital Status					
Unmarried	209(64.9)	282(69.1)	491(67.3)	1.44	>0.05
Married	113(35.1)	126(30.9)	239(32.7)		
Family History of substance abuse					
Yes	211(65.5)	85(20.5)	296(40.6)	148.92	<0.05
No	111(34.5)	323(79.2)	434(59.4)		

(Fig. in the parenthesis denotes percentages)

Discussion

The magnitude of substance abuse among youth was found to be 44.1%. It was 79.5% among males as compared to 20.5% among female youth and this difference was found to be statistically significant. The finding in present study was consistent with other studies. Similar study were conducted by Kangule et al (2011) on prevalence of substance use and its determinants among male tribal youth found that prevalence of substance use was 64.9%.⁽⁷⁾ The National Household Survey of Drug Use in the country⁽⁸⁾ is the first systematic effort to document the nation-wide prevalence of drug use. There was a marked variation in alcohol use prevalence in different states of India (current use ranged from a low of 7% in the western state of Gujarat (officially under Prohibition) to 75% in the North eastern state of Arunachal Pradesh. Tobacco use prevalence was high at 55.8% among males, with maximum use in the age group 41-50 years. According to global youth tobacco survey in Maharashtra, 12.9% adolescent (13-15 years) are currently consuming some tobacco product.⁽⁹⁾ Dongre et al (2008) in his study on Tobacco consumption among adolescent in rural Wardha found that about 68.3% boys and 12.4% girls had consumed any tobacco products in last 30 days.⁽¹⁰⁾ These findings were consistent with our study. Dekhale et al⁽¹¹⁾ (2011) in a study on prevalence of tobacco consumption among the adolescents of the tribal area in Maharashtra found that prevalence of tobacco consumption among the adolescents of tribal area was 45.4%. 65.3% male and 26.46% female adolescents were habituated to it which was again consistent with the results of our study. Kishore et al (2007) in a study on tobacco addiction amongst adolescents in rural area of district Wardha in their study found that 46.8% were using tobacco, 5.4% were smokers and 41.3% smokeless tobacco users.⁽¹²⁾ The result of this study was consistent with our study. Makwana et al (2007) in their study on prevalence of smoking and tobacco chewing among adolescents in rural area of Jamnagar district, Gujarat state found that 33.1% of the adolescents (10-19 years) were addicted with one or other type of tobacco chewing.⁽¹³⁾ Pandey et al in a study on Patterns of tobacco use amongst school teachers found that as high as 51% teachers consumed tobacco in one form or the other. Smoking was the most popular form of tobacco use (72%). Marked gender differences were

noted with 73.9% male teachers hooked to tobacco habit in comparison to 13.9% of female teachers.⁽¹⁴⁾ Similar sex difference was noted in our study. The prevalence of substance use was found to be 79.5% among males as compare to 20.5% among female youth. A similar study was conducted by Ali Yawar Alam et al⁽¹⁵⁾ in 2008 investigating socio-economic-demographic determinants of tobacco use in Rawalpindi, Pakistan found out that 16.5% of the study population (33% men and 4.7% women) used tobacco on a daily basis which was found to lower than findings of our study. The higher proportion of substance abuse than in study by Ali et al may be attributed to change in study setting.

Type of substance abuse: In our study majority of the youth 244 (75.8%) were using the smokeless tobacco which includes Gutkha, Kharra, pan, mava, masher and snuff. Kangule et al (2011) also found that substance abuse commonly used was tobacco (54.9%).⁽⁷⁾ in present study Tobacco smoking was present in 7.8% of the participants which was slightly higher than (5.4%) in study of Kishore et al.⁽¹²⁾ and history of alcohol consumption was present in 35 (10.9%) of the participants in present study which was lower than in studies of Kangule at el (20.72%).⁽⁷⁾ Importantly no female youth was found to have history of smoking and alcohol consumption which was similar with the findings in Kishore et al⁽¹²⁾ (Table 2).

Age of initiation of substance abuse: In present study, 31.4% of youth had history of initiation of substance abuse in the early adolescence (10-14 years) and 28.6% started substance abuse in the late adolescence age group (15-19 years). 25.1% of the participants had started substance abuse before 10 years of age. This was consistent with study conducted by Kotwalet al⁽¹⁶⁾ which found that almost 42% of tobacco users started before the age of 12 years. Kishore et al in her study found that 57.6% started substance abuse before 5 years, 36.4% had started this habit between 5 to 10 years and remaining 5.8% started it before 10 years of age.⁽¹²⁾ Kangule et al⁽⁷⁾ in their study found that 17.5% initiated the use before 10 years of age, 19.5% had initiated it between 10-14 years of age, 27.5% had initiated the use from 14-19 years of age and remaining 35.5% had initiated the use from 20-24 years of age. This was consistent with the results of our study.

Family History of substance abuse: In the study there were 40.6% of the participants who had family history

of substance abuse. There was a significant association between history of substance abuse among youth and family history of substance abuse. Kangule et al (2011), also found the strong association between the substance use by parents and study subjects ($p < 0.001$).⁽⁷⁾ Similar association was found in Dhekale et al study.⁽¹¹⁾

Reason for starting substance abuse: In present study 42.2% had started substance abuse a result of peer pressure. More than half of the female youth had admitted that they had started substance abuse because of peer pressure. These findings were consistent with other studies. Dhekale et al⁽¹¹⁾ and Dongre et al⁽¹⁰⁾ reported 30.3% and 51.2% of the participants had started tobacco use as result of peer pressure respectively.

In present study it was observed that 27.9% youth had acquired this habit from their families. 21.8% of youth started substance abuse as a result of inquisitiveness and experimentation among which males were more 23.0% as compared to females (16.7%). Similar findings were also observed in a study by Makwana et al who reported that 11% of the participants had acquired this habit from their families.⁽¹³⁾ In present study 6.5% of the participants had started substance abuse to get relief from disease or pain. These findings were consistent with the findings of Dekhale et al reported (11.8%) and Dongre et al reported (5%) of the participants had started the habit to get relief from some disease or abdominal pain.^(10,11)

Awareness of health hazards of substance abuse: In present study among the users, 52.8% male and 47.2% female were aware about the hazards of substance abuse as compare to 54.9% males and 45.1% female among non-users. And the association between sex and awareness regarding substance abuse was not found to be statistically significant ($P > 0.05$). This was consistent with findings of Dongre et al.⁽¹⁰⁾ Sharma *et al* also reported that smokers continued to smoke despite being averse to smoking and disapproval of their habit by their family members. Less number of smokers was found to advise others to quit smoking, as compared to non-smokers.⁽¹⁷⁾

Awareness regarding different health hazards of substance abuse: In present study poor oral health was the most common condition, named by 34.0% participants followed by cancer 26.2%. Substance use can also lead to tuberculosis answered by the 9.4% participants. 3.6% participants said it can lead to hypertension or heart disease. There was no significant difference between awareness of health hazards among the users and non-users (p value > 0.05). These findings were consistent with other studies. Dongre et al in their study also mentioned that tobacco use can lead to poor oral health (38.2%), Cancer (61.8%), Tuberculosis (7.8%) and heart diseases (0.8%).⁽¹⁰⁾

Tiwari et al in a study on tobacco use and cardiovascular disease in Kerala 2006 found that only 22.5% knew about the effects of tobacco in causing

cardiac problems which is much more than findings of present study. Most of the subjects knew its harmfulness in causing cancer. Electronic and print media were more common sources of such knowledge, as compared to health education provided by healthcare workers. Schools and books, which were thought to be an important source for such information, constituted a small percentage.⁽¹⁸⁾

Source of information regarding substance abuse: In present study mass media was the main source of information among the users (40.7%) as well as non-users (35.3%). Teachers in their schools were found to be source of information in 26.1% participants and Community based organization like Self Help Group, Kishori Panchayat (Adolescent Girls Group), Kisan Vikas Manch (Farmers Group) was found to be the source of information in 11.8% of users and 8.6% of the non-users. There was no statistical association between source of information among the users and non-users ($P > 0.05$). This was consistent with the findings of Dongre et al (2008) where Television/ Radio (37.1%), School Teachers (30.4%), Parents (15.6%), Friends (11.4%) and Community based organization (9.1%) were found to be the different sources of information.⁽¹⁰⁾ Gajalakshami et al in their study also found that only about half of the students reported that they had been taught about the harmful effects of tobacco use in school.⁽¹⁹⁾ Sinha et al reported that merely 3% students were taught in school about the harmful effects of tobacco.⁽²⁰⁾

Alcohol consumption: As per the NFHS-3⁽²¹⁾ data one-third of men drank alcohol, urban and rural men are about equally likely to consume alcohol. In present study it was found that 10.9% of all substance abusers were consumers of alcohol which was lower than in studies of Kangule et al (20.7%).⁽⁷⁾

Association of socio-demographic factors with magnitude substance abuse: In the present study it was found that substance abuse was significantly higher in males (79.5%) as compared to females (20.5%) and the difference was found to be statistically significant ($p < 0.05$). Substance abuse was found to be significantly higher among the youth who also had history of substance abuse in their family. In present study substance abuse was significantly associated with educational status, socio-economic status, and youth from the joint families and not associated with marital status and caste.

Similar findings were reported by Kangule et al among the tribal youth. He found that factors such as substance use by parents, unemployment and sibling pressure and lower educational status were significantly associated with substance use by study subjects.⁽⁷⁾ Another study conducted Dhekale et al also found that the consumption of tobacco among the family members significantly ($p < 0.001$) increased. The tobacco use among the adolescents.⁽¹¹⁾ These findings were consistent with results of present study.

Conclusions

Magnitude of substance abuse among youth was found to be 44.1%. It was 79.5% in males as compared to 20.5% in females and this was found to be statistically significant ($P < 0.05$). Smokeless tobacco (75.8%) was the commonest type of substance abuse followed by alcohol (10.9%). Tobacco smoking was prevalent in 7.8% of the youth. There was decreasing age of initiation of substance abuse. Peer pressure followed by experimentation was the main reason behind starting substance abuse. The gap between 'practice' and 'knowledge' was wide with 44.1% of users and 55.9% non-users had awareness that substance abuse will lead to deleterious effects on health but still 44.1% of the participants had history of substance abuse.

Mass Media was the main source of information. The substance abuse was found to be significantly associated with educational status, socio-economic status, and youth from the joint families and not associated with marital status and caste. Youth in a rural area are vulnerable population where in small changes or modification of their lifestyle done today will determine the health of these youth in the future and indirectly will reflect on development and betterment of community.

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