SUBSTANCE USE AMONG THE YOUTH INJECTING DRUG USERS IN URBAN NEPAL

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ABSTRACT: This cross-sectional study was to assess the pattern of substance use and unsafe injecting drug use among the Youth IDUs in urban Nepal. Total of 377 IDUs aged 16 to 34 participated in this study. Face to face interview using semi-structured questionnaire was used. Duration of this study was 1 month and took place in 5 urban areas in Nepal. Inclusion criteria were youth injecting drug users aged 16 to 34, and those who were willing to participate in this study. Exclusion criteria were who were seriously ill. The study revealed that about 40.4% (n=55) of the total respondents (n=327) were male and 13.26% (n=50) were female. More than half of the female respondents inject from the used syringe every time or almost every time whereas majority of the male respondents never used or used sometimes. There was significant association (*p-value*<0.001) between gender and sharing the syringe used by others. Recommendation for this study is that according to findings, majority of the respondents had sharing practice either sometime or every time, therefore raising awareness on consequences of sharing syringe and making drop in centers accessible to every client should be considered. Review studies to identify areas that can be strengthened or scaled up will help reduce sharing practices among the female IDUs.

Keywords: Injecting drug user, Substance use pattern, Nepal

INTRODUCTION

The World Drug Report in 2010 [1] indicated 16 to 38 million world's population uses drug and about 11 to 21 million are injecting drug users. These groups of people are susceptible to a diverse range of infectious and communicable disease leading to morbidity and mortality.

Globally, around 10% cases of HIV/AIDS are mostly credited to injecting drug use (IDU). Besides HIV/AIDS they are also vulnerable to wound botulism and hepatitis c which can lead them to death [2].

Heroin is the most common form of injecting drug; however amphetamines, buprenorphine, benzodiazepines, barbiturates, cocaine and methamphetamine are also in practice. Globally 14 million people or more use cocaine and about one-quarter of the 1.6 million US adults were estimated to use cocaine. Its utilization is mostly widespread in North America i.e 2.2 million people and western and central Europe i.e 3.9 million people [3].

Drug administered through IV route is a hazardously effectual and one of the most common ways for the spread of blood borne viruses like HIV. In fact, HIV can be directly transferred from the bloodstream of one IDU to another as a result of risky injection practices like needle sharing. Furthermore, as drug use via injection started being extensively used worldwide since 3 decades, sharing needle among IDUs has become an important cause accounting for the outbreak of HIV/AIDS. Earlier 1970, initiation of injecting drugs like cocaine and heroin via IV route were common in North America and Europe. Injection drugs use had extended to 80 countries and regions by 1992, 121 country and regions by 1995 and researchers' bases on evidence of injection drug use may enlarge globally according to recent studies carried out Asia, sub-Saharan Africa and central and Eastern Europe.

According to the International Harm Reduction Association (IHRA) 2008 [4], globally 10% of new

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Cite this article as: Khapung S, Areesantichai C. Substance use among the youth injecting drug users in urban Nepal. J Health Res. 2014; 28(Suppl.): S99-105.

HIV infections are due to risky injection practices. Among expected 185,000 IDUs, Iran's IDU is supposed to be the highest of any of the country in the Middle East and North Africa. As predicted the number of IDU in Egypt, Algeria and Iraq are roughly 88,618, 40,961 and 34,673 respectively. In Mauritius, there are approximately 17,000 to 18,000 IDUs. In the Middle East and North Africa the IDUs are tremendously 17,000 to 18,000 IDUs. In the Middle East and North Africa the IDUs are tremendously male. Though various other forms of drugs are administered, heroin is most frequently injected drug in the region [5].

Number of IDUs in Nepal ranges from 30,155 to 33,742, the highest percentage of IDUs i.e. 61.6 is reported within the age group 20-29 years (HSCB). Whereas 38% of the IDUs had their first had exposure in their earlier twenties. Among 6 epidemic regions, with an estimated number of 24,448 to 27,410 IDUs being the highest number of IDU in the Highway district region. Kaski district predicted to have the maximum IDUs that ranged between 3,187 and 3,477, thus followed by Morang district with 1973 to 2218 IDUs and Chitwan with an estimated IDUs being in the range between 2001 and 2208 respectively [6].

Adolescents (10-19 years), undergoes various stages in their physical, social and psychological growth in the process conversion from childhood to adulthood. Cannabis and alcohol existed since long time as a part of cultural norms. Various drugs forms that are used currently that have been modified from cannabis to synthetic opiates and chemical substances have now become a major public health concern. Its approach has modified from smoking, chewing to injecting. IDU is a major public health issue and need special attention. Its application through IV route is supposed to be the most risky pathway because in the one hand there is hazard of drug overdose and on the other hand the hazard of infection and other disease allied with the way it is introduced. A study carried out in Kathmandu among the IDUs reported that about half (51%) introduced drugs with previously used by another and out of them 106(70%) were involved in sharing needle with multiple persons which was mostly allied due to their intimacy with that person. There is an increase in mixing of the drugs and the number of times the drug is introduced [7]. The objective of the study is to assess the pattern of substance use and unsafe injecting drug use among the Youth IDUs in urban Nepal.

METHODS

This cross-sectional study used face to face interview using semi-structured questionnaire. Sample size calculation was done using Krejcie Morgan formula [8]

$$S = \frac{X^2NP(1-P)}{d^2(N-1)+X^2P(1-P)}$$

S = Required sample size

X^2 = The table value of chi-square for 1 degree of freedom at the desired confidence level (3.841)

N = The population size

P = The population proportion

d = The degree of accuracy as a proportion.

Purposive sampling method was used for the sampling from rehabilitation center and harm reduction in the respected places. Inclusion criteria were (1) Youth injecting drug users aged 16 to 34, (2) those who were willing to participate in this study. Exclusion criteria were (1) who were seriously ill diagnosed by doctors. This study was carried out from 5 municipalities in Nepal which included Kathmandu, Biratnagar, Pokhara, Dharan and Damak. Purposive sampling was used to select 5 sites in Nepal followed by quota sampling with proportion to select samples from rehabilitation and harm reduction center with respect to place. Krejcie Morgan formula was used to calculate the sample size. 377 IDUs Participated in this study which include (n=64) participants from Damak, (n=77) participants from Pokhara, (n=75) participants from Kathmandu, (n=81) participants from Dharan and (n=80) participants from Biratnagar. Further (n=136) participants from rehabilitation center and (n=241) participants from harm reduction center. Informed consent prior to the interview was taken. Ethical approval was obtained from the ethical committee of NHRC, Nepal with reg. no. 25/2014. Chi- square was used to test the association between dependent and independent variables.

RESULTS

Socio-demographic Characteristics

The finding represents the social demographic of respondents on the basic of centers and gender. As there were no female respondents in rehabilitation center, hence they were not presented for the Table 1. About 40.4% (n=55) of the total respondents (n=327) were male and 13.26% (n=50) were female. Out of total male respondents (n=136) in rehabilitation center, majority of respondents were from age group 20 to 24. Majority of the male respondents from harm reduction center were from the age group 20-24 similarly from majority of female respondents from harm reduction center

Table 1 Socio demographic characteristics of youth injecting drug users of urban area Nepal n=377

Variables	Rehabilitation	Harm reduction	
	Male n(%)	Male n(%)	Female n(%)
Age (years)			
15-19	13(9.6)	26(13.61)	4(8)
20-24	55(40.4)	52(27.23)	18(36)
25-29	43(31.6)	73(38.23)	15(30)
30-34	25(18.4)	40(20.93)	13(26)
Total	136(100)	191(100)	50(100)
Place			
Damak	11(8.1)	48(25.1)	5(10)
Pokhara	26(19.1)	44(23.03)	7(14)
Kathmandu	42(30.9)	23(12.04)	10(20)
Dharan	40(29.4)	25(13.13)	16(32)
Biratnagar	17(12.5)	51(26.7)	12(24)
Total	136(100)	191(100)	50(100)
Religion			
Hindu	101(74.3)	129(67.5)	35(70)
Buddhist	17(12.5)	41(21.5)	12(24)
Christian	14(10.3)	13(6.8)	3(6)
Muslim	4(2.9)	8(4.2)	0
Total	136(100)	191(100)	50(100)
Education			
Illiterate	10(7.4)	11(5.8)	2(4)
Literate	126(92.6)	180(94.2)	48(96)
Primary	14(10.3)	34(17.8)	9(18)
Secondary	66(48.5)	101(52.9)	29(58)
Above	46(33.8)	45(23.6)	10(20)
Occupation			
Business	12(8.8)	34(17.8)	4(8)
Service	23(16.9)	24(12.6)	3(6)
Unemployed	69(50.7)	76(39.8)	30(60)
Agriculture	14(10.3)	24(12.6)	2(4)
Labour	18(13.2)	33(17.3)	11(22)
Total	136(100)	191(100)	50(100)
Marital Status			
Single	94(69.1)	111(58.1)	25(50)
Married	38(27.9)	70(36.6)	21(42)
Divorced	4(2.9)	10(5.2)	4(8)
Total	136(100)	191(100)	50(100)

were from the age group 20 -24.

Majority of the male respondents from rehabilitation center were from Kathmandu. Majority of the male respondents were from Biratnagar in harm reduction center and majority of the female respondents were from Dharan in harm reduction center. Majority of the male respondents in rehabilitation center followed Hindu religion (74.3%).

About 67.5% of the male respondents from harm reduction followed Hindu religion similarly about 70% of the female from harm reduction followed Hindu religion.

Only 7.4% of the male respondents in rehabilitation center, 5.8% of the male in harm reduction and 4% of the female in harm reduction were illiterate. The male respondents who were literate and were literate and were staying in rehabilitation center, majority of them (48.5%) had secondary level of education. Likewise 52.9% of male and 58% female from harm reduction had secondary level of education.

Half of the male respondents from rehabilitation center were unemployed. Likewise one third of the male respondents and more than half of the female respondents from harm reduction center were unemployed.

Majority of the male respondents from rehabilitation center belonged to nuclear family whereas majority of the male respondents and female respondents from harm reduction center belonged to nuclear and joint family respectively.

More than half of the respondents (69.1%) from rehabilitation were single. Likewise, more than half of the male respondents and half of the female respondents from harm reduction center were single.

Table 2, majority of the respondents from both rehabilitation center and harm reduction aged 20 to 24 inject in group. Majority of the respondents had 2 to 5 people in their group. Sharing syringe used by

Table 2 Pattern and behavior in age group and gender from rehabilitation and harm reduction center

category	Rehabilitation				Harm reduction							
	Male n(%)				Male n(%)				Female n(5)			
	15-19	20-24	25-29	30-34	15-19	20-24	25-29	30-34	15-19	20-24	25-29	30-34
Setting												
Inject alone	1(7.7)	4(7.3)	6(14)	6(24)	6(23.1)	3(5.8)	14(19.2)	6(15)	0	3(16.7)	1(6.7)	3(23.1)
Inject in group	8(61.5)	32(58.1)	25(58.1)	13(52)	17(65.4)	45(86.5)	44(60.3)	27(67.5)	3(75)	13(72.2)	12(80)	9(69.2)
Number of people												
2-5	11(84.6)	42(76.4)	27(62.8)	16(64)	16(61.5)	36(69.2)	49(67.1)	31(77.5)	0	11(61.1)	9(60)	10(76.9)
6-9	0	8(14.5)	10(23.3)	2(8)	3(11.5)	10(19.2)	9(12.3)	3(7.5)	4(100)	4(22.2)	5(33.3)	0
10-13	1(7.7)	1(1.8)	0	1(4)	1(3.8)	3(5.8)	1(1.4)	0	0	0	0	0
Sharing from used syringe												
Every time	0	9(16.4)	3(7)	3(12)	2(7.7)	8(15.4)	10(13.7)	6(15)	1(25)	3(16.7)	6(40)	7(53.8)
Almost every time	2(15.4)	6(10.9)	6(14)	1(4)	6(23.1)	11(21.1)	10(13.7)	2(5)	3(75)	7(38.9)	2(13.3)	1(7.7)
Some time	3(23.1)	24(43.6)	18(41.9)	7(28)	7(26.9)	21(40.4)	27(37)	12(30)	0	5(27.8)	5(33.3)	2(15.4)
Never used	7(53.8)	12(21.8)	10(23.3)	8(32)	5(19.2)	9(17.3)	12(16.4)	14(35)	0	0	1(6.7)	0
Give syringe after use												
Every time	1(7.7)	13(23.6)	12(27.9)	3(12)	5(19.2)	13(25)	16(50)	4(10)	1(25)	11(61.1)	9(60)	8(61.5)
Almost every time	1(7.7)	13(23.6)	12(27.9)	3(12)	5(19.2)	13(25)	16(21.9)	4(10)	1(25)	11(61.1)	9(60)	8(61.5)
Some time	5(38.5)	23(41.8)	14(32.6)	7(28)	8(30.8)	26(50)	27(37)	14(35)	3(75)	3(16.7)	4(26.7)	1(7.7)
Never	538.5)	11(20)	10(23.3)	7(28)	5(19.2)	7(13.5)	9(12.3)	9(22.5)	0	1(5.6)	1(6.7)	1(7.7)

Table 3 Association between environment and frequency of drug use

	Once a week n(%)	2-3 times a week n(%)	4-6 times a week n(%)	Once a day n(%)	2-3 times a week n(%)	4 or more times a day n(%)	*p-value*
Free time							
Father	0	0	0	4(1.1)	5(1.3)	1(.3)	
Mother	1(.3)	0	0	2(.5)	7(1.9)	3(.8)	
Siblings	0	0	1(.3)	2(.5)	24(6.4)	7(1.9)	0.04*
Friends	4	10	18(4.8)	17(4.5)	165(43.8)	45(11.9)	
Alone	1(.3)	2	1(.3)	1(.3)	23(6.1)	15(4)	
Spouse	0	2	1(.3)	1(.3)	11(2.9)	3(.8)	
Partner involved in substance use							
No	2(1.4)	2(1.4)	7(4.7)	9(6.1)	81(54.7)	25(16.9)	0.057*
Yes	0	1(.7)	5(3.4)	3(2)	11(7.4)	2(1.4)	
Offered drugs by others							
No	0	2(.5)	3(.8)	7(1.9)	13(3.4)	120(31.8)	0.010*
Yes	0	4(1.1)	11(2.9)	14(3.7)	14(3.7)	115(30.5)	
Sold drugs to others							
No	1(.3)	7(1.9)	18(4.8)	8(2.1)	103(27.3)	38(10.1)	0.001*
Yes	5(1.3)	7(1.9)	3(.8)	19(5)	132(35)	36(9.5)	
Discriminating community							
No	6(1.6)	11(2.9)	7(1.9)	16(4.2)	131(34.7)	32(8.5)	0.006*
Yes	0	3(.8)	14(3.7)	11(2.9)	104(27.6)	42(11.1)	

*Level of significant at 0.05

others every time was most common among the respondents in rehabilitation center among the age group 20 to 24.

There is significant relationship (*p-value*<0.005) between free time and age at frequency of injection. The relationship between parents involvement in substance use and frequency of injection was found to be significant (*p-value* <0.05). The relationship between offered drugs by others and frequency of injection was found to be significant (*p-value*<0.05). Majority of the respondents who were offered drugs by other injected 4 or more times a day. The relationship between sold drugs by others and frequency of injection was found to be significant (*p-value*<0.05). Majority of the respondents who sold drugs injected 2 to 3 times a day, Table 3.

Table 4, the respondent's gender was categorized into male and female. There was significant difference (*p-value*<0.001) between gender and sharing syringe used by others. The respondent's age (16-34) has been categorized into 2 categories and was compared with the types of drugs used. The result showed no significant difference between the two variables (*p-value*>0.05). Religion of the respondents was categorizes into Hindu, Buddhist and others. Majority of the

Table 4 Association between socio- demographic factors and sharing of injection

	Every time n(%)	Almost every time n(%)	Sometime n(%)	Never used n(%)	*p-value*
Gender					
Male	41(12.7)	44(13.6)	119(36.7)	77(23.8)	0.000**
Female	17(5.2)	13(4)	12(3.7)	1(.3)	
Religion					
Hindu	36(11.1)	42(13)	94(29)	56(17.3)	
Buddhist	10(3.1)	15(4.6)	23(7.1)	11(3.4)	0.020*
Others	12(3.7)	0	14(4.3)	11(3.4)	
Caste					
Brahmin	7(2.2)	11(3.4)	10(3.1)	6(1.9)	
Chettri	10(3.1)	12(3.7)	17(5.2)	4(1.2)	
Dalit	9(2.8)	1(.3)	7(2.2)	4(1.1)	
Jan Jati	29(9)	28(8.6)	83(25.6)	49(15.1)	0.001*
Madeshe	3(.9)	5(1.5)	14(4.3)	15(4.6)	
Education					
Illiterate	5(1.5)	1(.3)	9(2.8)	5(1.5)	0.451
Literate	53(16.4)	56(17.3)	122(37.7)	73(22.5)	
Level of education					
Primary	8(2.6)	10(3.3)	17(5.6)	11(3.6)	
Secondary	34(11.2)	35(11.5)	74(24.3)	35(11.5)	0.313
Above	11(3.6)	11(3.6)	31(10.2)	27(8.9)	
Occupation					
Unemployed	32(9.9)	26(8)	59(18.2)	38(11.7)	0.615
Employed	26(8)	31(9.6)	72(22.2)	40(12.3)	
Monthly income					
Minimum	20(14.1)	21(14.8)	51(35.9)	31(21.8)	0.424
Maximum	2(1.4)	1(.7)	9(6.3)	7(4.9)	
Marital status					
Single	41(12.7)	39(12)	82(25.3)	40(12.3)	
Married	12(3.7)	17(5.2)	43(13.3)	36(11.1)	0.306
Divorced	5(1.5)	1(.3)	0	0	
Joint	19(5.9)	22(6.8)	60(18.5)	36(11.1)	

*Level of significant at 0.05, <0.001 respectively

respondents followed Hindu religion. There was significant relationship (*p-value*<0.05) between two variables. Caste of the respondents was categorized into Brahmin, Chettri, Dalit, Jan jati and Madeshe. There was significant difference (*p-value*<0.05) between two variables. Education was categorized into illiterate and literate. There was no significant difference (*p-value*>0.05) between two variables. Level of education was categorized into primary, secondary and above. The result showed that there was no significant difference (*p-value*>0.05) between two variables. Occupation was categorized into unemployed and employed. The result showed that there was no significant difference between occupation (*p-value*>0.05) and injecting with used syringe. Monthly income was categorized into minimum (around 80$) and maximum (≥250$). There was no significant difference (*p-value*>0.05) between monthly income and injecting with used syringe. Marital status of the respondents were categorized into single and married and divorced. There was significant difference (*p-value*<0.05) between marital status and injecting with used syringe. Type of family was categorized into nuclear and joint. There was no significant difference between (*p-value*>0.05) type of family and injecting with used syringe.

DISCUSSION

In this study, the age group was categorized into four groups where majority of the male respondents were from the age group 24-29 whereas majority of the female respondents were from the age group 20-24.This finding is consistent with the study done on mapping and size estimation of most at risk-population in Nepal, 2011 [6] where majority of the IDUs were from the age group 20-29.

Majority of the female respondents were from Dharan (n=32%)) followed by Biratnagar (n=24%). This finding was consistent with the study done by UNODC [9] where majority of the IDUs were from Sunsari followed by Morang.

Religion in Nepal is categorized into Hindu, Buddhist, Christian and Muslim. Majority of the respondents followed Hindu religion. This was not consistent with other studies as this study was conducted in only 5 areas of Nepal so religion varies from place to place and was the same for caste which was categorized into 5 groups those were Brahmin, Chettri, Dalit, Jan jati and Madeshe. Though according to UNODC report 2011 majority of them were from ethnic minorities [9].

Education is one of the important factors. Majority of the male respondents (92.6%) in rehabilitation center were literate and amongst them nearly half of the respondents had attended secondary level of education and very few had attended primary level of education. Similarly majority of the male respondents (94.2%) from harm reduction center were literate and amongst them more than half of the respondents (52.9%) had attended secondary level of education and minority (17.8%) of them had attended primary level of education. Likewise majority of the female respondents (96%) from harm reduction center were literate and majority (58%) of them had attended secondary level of education and minority of them (18%) had attained primary level of education. As most of the IDUs were literate but dropout rate was high among them in secondary level. Which was not consistent with the study on mapping and size estimation where majority of the respondents had attended higher level education [10].

Majority of the respondents from both the centers were unemployed and of those majority (16.9%) of the male respondents in rehabilitation center were engaged in service and minority in business. Also majority (17.8%) of the male respondents in harm reduction center were engaged in business and minority (12.6%) of them engaged in either service or agriculture. Whereas majority (22%) of the female respondents from harm reduction center who were employed were engaged in labour work whereas minority (4%) of them were engaged in agriculture. The unemployed were more likely to have pattern of high use. As they were more likely to have free time compared to those who were employed. And also according to other study done unemployment rated of the drug user were high compared with the general population (47.4% among drug clients compared with 8.2 % in the general population). Also finding job was difficult and was rare for drug users to keep a job for long or progress in a career [11].

Type of family was categorized into 3 groups nuclear, joint and alone. More than half of the male respondents (54.4%) from harm reduction center belonged to nuclear family and 45.6% of them belonged to joint family. Majority of the male respondents from harm reduction center (63.9%) belonged to nuclear family whereas one third of them belonged to joint family. Whereas more than half of the female respondents belonged to joint family and 42% of them belonged to nuclear family. There has been a major evolution of the structure of a family because of globalization. The evolution has effects both positive and negative on child's social behavior. Globalization has made even the women going out to work as opposed to the traditional woman whose responsibility was mainly home keeping and motherhood. This has made the nuclear family to has some changes which has effects on the child's social behavior. In nuclear family parents won't be able to give their full time to their children so they are more likely to adopt anti social behavior.

Marital status was categorized into 3 groups single, married and divorced. More than half (69.1%) of the male respondents from rehabilitation center were single, and very few (2.9%) were divorced. Similarly majority of the male respondents (58.1%) in harm reduction center were single and few of them (5.2%) were divorced. Likewise half of the female respondents in harm reduction center were single, 42% of the female respondents were married and minority of them (8%) was divorced.

Free time, partner involvement in drug use, offered drugs by others, sold drugs, discriminating society had significant relationship with frequency of drug use. Similarly gender, religion, caste and marital status were associated with sharing needle used by others. As male are more likely to inject for longer duration and have high frequency of drug use compared to female due to the fact that female has little access to drugs they are supposed to depend on male to get drugs and also they are bounded with some boundaries. And also due to minority group the sharing of syringe were common among females. This study was also consistent with other similar studies. As female is at a disadvantage in terms of the power structure and may be unable to exercise her decision not to share injecting equipment and when injecting in a group, the women may be the last to use the needle or syringe. Use of previously used injecting equipment was more prevalent among female injecting drug user compared to male [9].

CONCLUSION

In conclusion we can say that majority of the IDUs in this study were male. This is because of the fact that drug users are stigmatized in many countries including Nepal and when women use

drugs the stigma and subsequent social isolation is even more severe than when compared to male drug users. They are more likely to hide their status and do not easily come to an exposure. There was significant difference between gender and frequency of injection use. Frequency of injection use was higher among male than female because female are more likely to face difficulties in getting drugs and syringe or either she has to depend on male to buy drugs. There was significant relationship between gender and injecting with syringe already used by others. Females were more likely to inject with used syringe or needle as because female is at a disadvantage in terms of the power structure and may be able to exercise her decision not to share injecting equipment and when injecting in a group women may be the last to use the needle or syringe.

RECOMMENDATION

According to findings majority of the respondents had easy access to drugs due to open border between countries so strict laws and policies need to be addressed by the government.

- Raise awareness on consequences of sharing syringe and making Drop in centers accessible to every client.
- Mobilize the staff in the area like hot spots
- Strict border checking
- As dropout rate is high in secondary level of education were quite high-Awareness should be made by covering the information regarding substance use in curriculum and also recreational activities should be included in schools which helps in both the physical and mental growth of the students.
- OST service with either bruphinorphine or methadone should be in reach to all the clients
- Recommend to do further research on substance use pattern and injecting behavior among the youth injecting drug user via longitudinal study
- Review studies to identify areas that can be strengthened or scaled up will help reduce sharing practices among the female IDUs
- Practice of using syringe kept/left in public places and sharing syringe amongst injecting partners, increase the possibility of HIV infection in IDUs community. Thus harm reduction programs for IDUs should be continuously targeted for minimizing syringe sharing and reusing the previously used syringe among the IDUs. .

ACKNOWLEDGEMENT

This publication has been supported by the Ratchadaphiseksomphot Endownment Fund of Chulalongkorn University (RES560530243-AS).

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