

Socio-Economic Scenario of Rag Pickers and Their Role in Municipal Solid Waste Management of City of Varanasi, India

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ABSTRACT

Rag pickers pick the reusable and recyclable waste from the roadsides, dustbins and landfills and sell these to local scrap dealers to earn money to full fill their daily needs. Rag pickers are doing this in a very unhygienic and hazardous condition. They always prone to being infected by infectious diseases, cuts, injuries, toxic fumes and accidents etc. Their socio-economic scenario is also very bad. They don't have enough education, training and support to do anything else. This research work was carried out to assess the socio-economic status of the rag pickers and their role in the management of municipal solid waste of the city of Varanasi, India. Research work was carried out by the help of a questionnaire survey, which contains the questions regarding age, sex, education, diseases, earning, addiction habits type and weight of waste collected, distance covered etc. these questions were asked to rag pickers, who were got selected from different places of the city. This is very necessary to understand and appreciate the role of rag pickers in the cleanliness and sanitation of our cities instead it rag pickers are very neglected and avoided part of our society.

Keywords: Rag Pickers, Municipal Solid Waste, Recycling, Socio-Economic Scenario, Landfill

Introduction:

According to the Basel convention [1] wastes are the substance or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law. The United Nations Statistics Division (UNSD) [2] describes waste as materials that are not prime products for which the generator has no further use in terms of his/her own purposes of production, transformation or consumption, and of which he/she wants to dispose. According to the European commission under the waste framework directive 2008/98/EC, Art.3 (1) [3] waste is an object the holder discards intends to discard or is required to discard. Municipal solid waste sources are Residential, Industrial, Commercial, Institutional and Constructional and demolition waste etc. Sarkar et al. (2003) [4] inferred that urban waste is normally a complex mixture of household, construction, commercial, toxic industrial elements and hospital wastes. Another definition says that solid waste is that material which has no longer has any value for the person

who generated them and not intended to be discharged through a pipe [5]. Since these wastes are not properly disposed of so it leads to various health effects such as dissemination of various infectious diseases among human and animals living in the vicinity. In most cities and towns the wastes are dumped indiscriminately on roads and streets which form a huge stock which results in traffic problems and a bad environment [6]. Wastes are left on the streets unsorted and it causes many health hazards [7].

Two major methods are rag picking and scrapping. Here we will deal with rag picking. Rag picking: According to Krishna V. et al. (2016) [8] the term rag picker refers to the people who collect rags or recyclable materials that can be sold for money. Another definition says that "Ragpicker" is a generic term denoting anyone who stoops to pick waste of any kind for a living. According to Bhosale and Korishetti (2013) [9] rag picking is one of the inferior economic activities in the urban informal sector, largely undertaken by children belonging to weaker sections of the society for their survival and for supplementing their family income and is the profession mostly dominated by children aging 6 to 15 years who do not have any other skill and thus by way of refuse collection contribute to household income or own survival. These are mainly children of slum dwellers and poor people. Some of them are abandoned or runaway children. The continuous exposure to the common garbage and the hospital waste has led to various diseases. Many of them smoke and some are also addicted to drugs and indulge in prostitution and homosexuality, robbery and gambling. All this has affected their lives in several ways and shortened their lifespans considerably.

According to Krishna V. et al. (2016) [8] rag pickers play an important role in solid waste management but rag picking is one of the most neglected sectors. It includes the sorting, collecting, and selling of these various waste materials that can be found at dumpsites, riverbanks, street corners, or in residential areas, and consist primarily of plastics articles, glass bottles, cardboard items, tin materials, aluminium products, iron materials, brass and copper things. According to Medina, 1997 [10] despite there is a health risk at dump sites some people make their living by foraging the waste for survival. These people are known as rag pickers or waste scavengers. According to Koji Taira, 2015 [11] "rag picker" is a generic term denoting anyone who stoops to pick waste of any kind for a living. According to Sarkar et al. (2003) [4] waste pickers, scavengers, or rag pickers as they are commonly called, constitute that segment of the people involved in the waste trade who make a livelihood by collecting and reselling recyclable materials, articles, products etc. out of municipal solid waste.

Shahida et al. (2013) [12] reported that the rag pickers play a major role in waste management by channelizing the recyclable materials and also reduce the expenditure of corporation. As the rag pickers collect the recyclable materials mainly so the sorting becomes easier for the municipal workers. Waste pickers sort recyclable materials from the refused heap or vats and they spend 20 – 30% of their time sorting

saleable materials from refuse both at the collection points and disposal sites. They sell the assorted materials to middlemen buyers who often perform some simple sorting and cleaning. They collect waste plastic, iron scrap and glass bottles, sifting the mountains of litter dumped there and sell to commission agents (Kuruva et al. 2014). [13]

The socioeconomic status of the rag pickers is not good. They work very hard but are paid very less. Children of very young age also do this work for their family so that earning can be made (Mustafa et al, 2008). [14] Many of them smoke beedi and cigarettes and some are also addicted to drugs and indulge in prostitution and homosexuality, robbery and gambling. All this has affected their lives in several ways and shortened their lifespans considerably. (Saxena, 2012). [15]

Material and methods:

The study area is the famous religious, educational, cultural and tourist place of India which is well known for its Ghats and temples i.e. Varanasi city. It is also known as Banaras or Kashi and is located at an elevation of 80.71 meters (264.8 ft.) in the center of the Ganges valley of North India, in the eastern part of the state Uttar Pradesh, along the left crescent-shaped bank of the Ganges, averaging between 15 meters (50 ft.) and 21 meters (70 ft.) above the river. Varanasi is metropolitan city having a population of 1,201,815 with a density of 15000/km² and sex ratio of 0.92692011 M/F. Its literacy rate is 80.12 %. The languages are Hindi and English.

Varanasi is famous for many things. It is a place of getting moksha and is famous for its educational as well as religious importance. It is believed that it is the home of Lord Shiva and the famous ancient temple of Lord Shiva is present here as the name of Shri Kashi Vishwanath temple located in Godowlia, Varanasi. Several ghats are present here and people came here from outside to get a bath in the holy river Ganges and to fulfill their desire to leave their body in this holy place. Some important ghats are Manikarnika ghat, Dashasvamedh ghat, Assi ghat etc. Varanasi is also famous for the carpet industry. When we consider education, a very large and respectable university is situated here i.e. Banaras Hindu University which is famous for its quality education and is also known as the capital of knowledge.

The study was based on a survey of the rag pickers of Varanasi city with a prepared questionnaire including thirty four questions done from February to March (2017). A questionnaire is a research method consisting of a set of questions for collecting information from respondents. The questionnaire was invented by the Statistical Society of London in 1838. (<https://googleweblight.com>) [16]. The questionnaire has advantages over some other types of surveys in that they are cheap, do not require as much effort from the questioner as verbal or telephone surveys and simple to compile data. Questionnaires are also restricted by

the fact that respondents must be able to read and respond to questions. In this survey, the work is on assessment of the role of rag pickers in municipal solid waste management and their socioeconomic status so the questions were prepared according to this requirement. The questions were of two types; on the one hand few questions were related to their role in recycling like type of waste, amount of the waste, waste collection points, buying and selling price of the waste etc. while other questions were about their socioeconomic status like their age, gender, earnings, residence, health and entertainment etc. The questionnaire prepared includes thirty four questions.

Sampling:

The sampling was done at various public places of the city including the bus station, railway station, streets, dumping sites, hospitals etc. In this survey about 210 rag pickers were questioned and out of them about 100 rag pickers agreed to face the questionnaire. Many rag pickers gave the answers of only a few questions hence their total questioning was incomplete so their data were discarded. The rag pickers are found more in the early morning and the number of the chances of getting them decreased as the day passed on. The probability of getting them also increased when there is an arrival of any train on the platform since the chances of getting rags increases at that time. At the dumping site also a large number of rag pickers are found since the availability of getting the rags is more there because ultimately the waste is disposed of there.

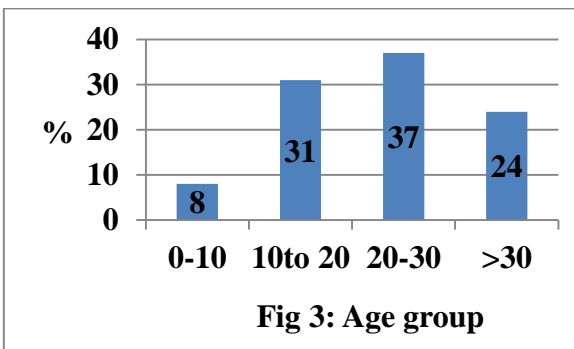
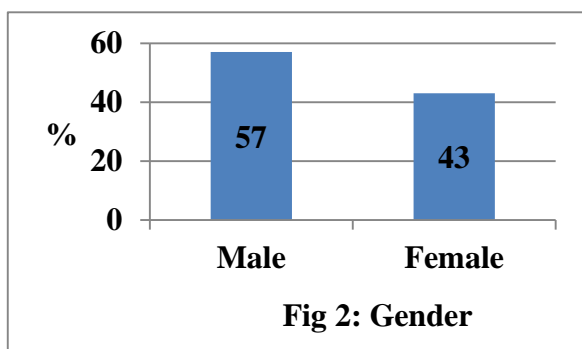
Collection of data:

The questions were asked to the rag pickers by translating them into Hindi and then translating their answers in English and by putting a tick on the respective options according to the answer given because most of them were not able to understand the English language. By this method the data was collected.

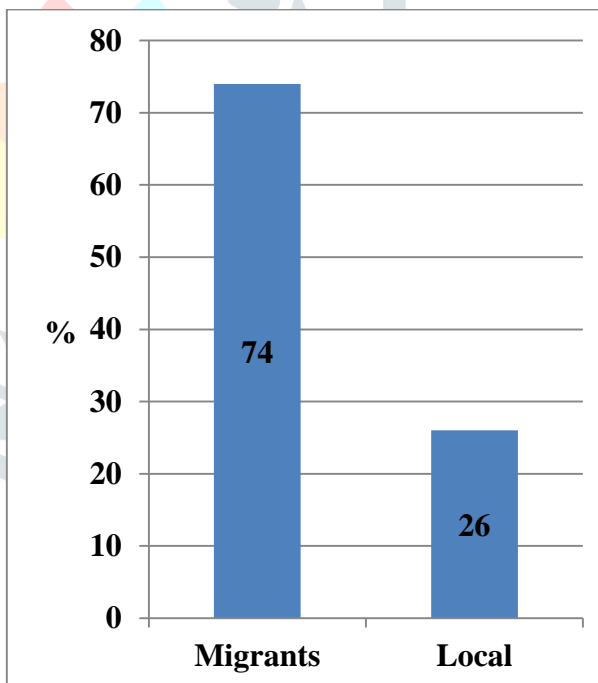
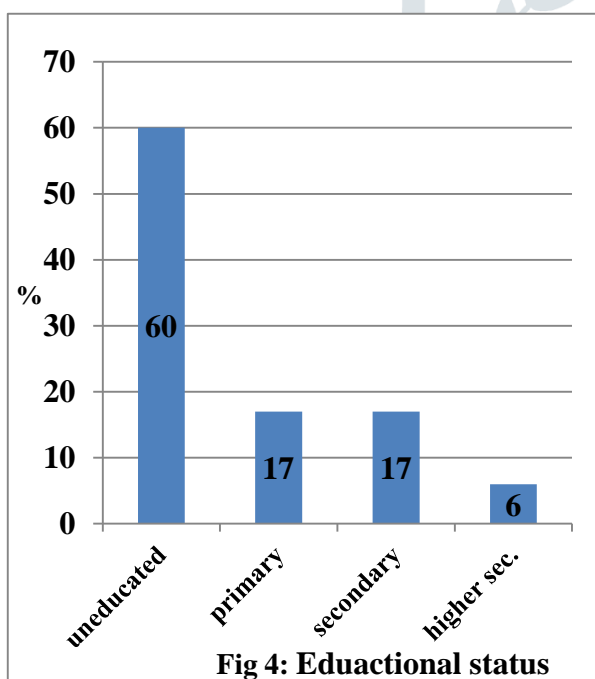
Result and discussion:

1. Gender and age: In survey, it was found that 57% of the rag pickers are male and 43% are female. The number of males is high because in our society the male has the responsibility to do external work and the females for the internal i.e. household works. Secondly, the females have so many household works so they are not able to do work outside. Thirdly, there are also security issues of the females. The age group of the rag pickers was categorized into four sections i.e. 0-10, 10-20, 20-30 and > 30. The 0- 10 age group included 8% rag pickers. The reason is that these are child rag pickers and their ability and efficiency are low as compared to others and also many of them take their education. 10-20 age groups included 31% rag pickers. This was because it contains the male rag pickers who were able to do this job efficiently and the females are less because of the security issue and their efficiency. 20-30 age groups include 37% rag pickers since the responsibilities to run life increases because this age group includes many married couples so for

the survival of their family efficiently they work hard. > 30 age group included 24% because this group involved the aged persons also who are unable to work hard at a high level.

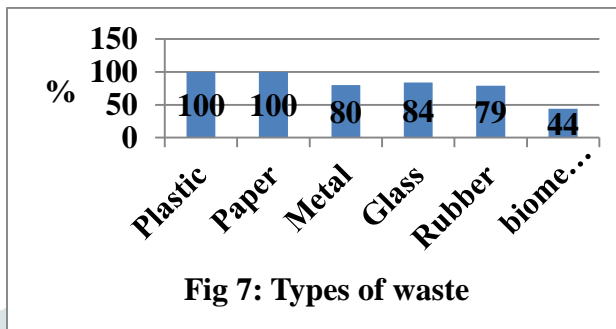
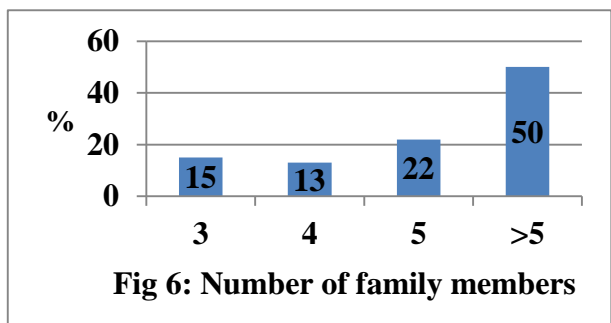


2. **Education:** In this class most of the rag pickers were uneducated and only a few were educated up to primary, secondary and higher secondary level. It was seen that the percentage of uneducated rag pickers, primary level educated, secondary level educated and higher secondary level were 60,17,17and 6 respectively. The level of uneducated rag pickers is quite high because the rag pickers are not able to get the opportunity to get an education due to their economic condition and work of rag picking. Secondly, they also think to earn money early. Some rags pickers are educated to a level because they did not get the opportunity to do any other work.



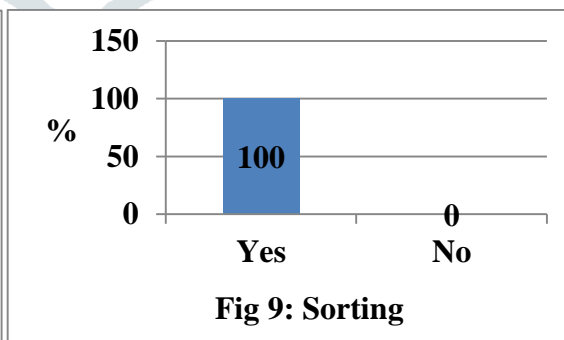
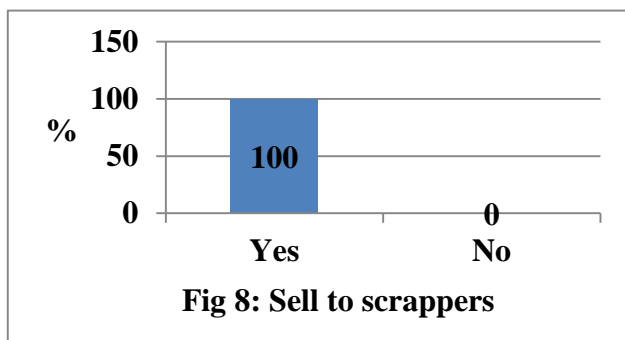
3. **Migrants or local:** The migrant rag pickers were 74% mainly from West Bengal and few were from Jharkhand and rests 26% were local i.e. from Varanasi. The reason behind the migration is that many came here in search of jobs and finally they started to pick rags. Secondly, the work opportunity was higher in Varanasi as compared to their actual state. Thirdly, by following the other persons many others came behind them.

4. **Individuals in a family:** The number of members was mostly high in most of the rag pickers family. The reason behind a large number of family members in a family is illiteracy which includes the thinking that the children are the gift of God. Second thinking was that if there will be more members of a family then there will be more income. Some family persons were literate and they were aware of the disadvantage of a large family so their number is less.



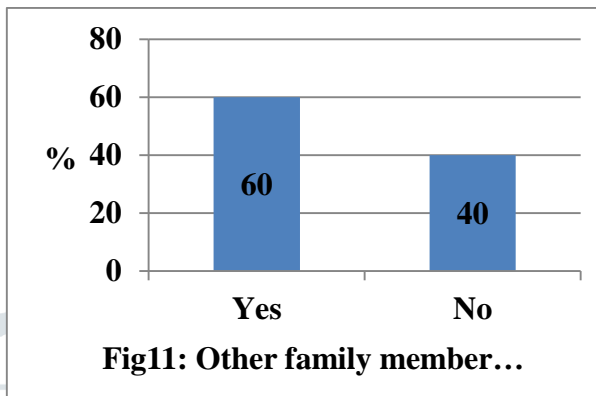
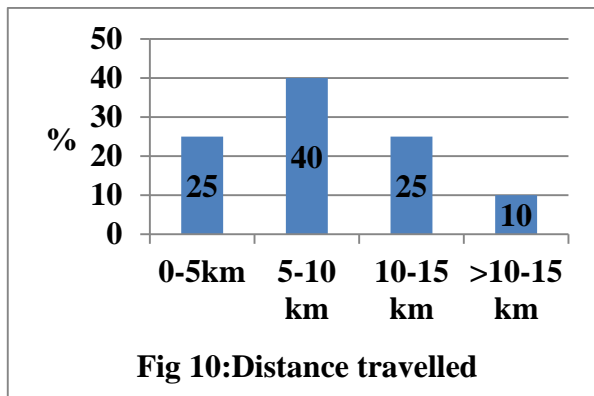
5. **Type of waste collected:** Many types of wastes were collected by the rag pickers such as plastic, paper, metal, biomedical waste, metals, glass, rubber etc. The distribution is as follows: Plastic and paper were collected by all the rag pickers. Metal was collected by 80% of the rag pickers. Glass, rubber and biomedical waste were collected by 84, 79 and 44% of the rag pickers respectively. Since the paper and plastics are in daily use in our society so their production is higher and so the collection is highest and so they are easily available. Metals are comparatively less available. Glass is collected but in a small number since it is not so much practiced and is dangerous. Rubber is also collected and it is available from the houses etc. but only after a large span of time. Biomedical waste is dumped and treated by the hospital management and it contains many toxic and infectious substances so its collection is done lesser than other wastes.

6. **Selling to scrappers:** All rag pickers sold their collected waste to the scrappers to earn money and also they did not have any other option.



7. **Sorting of wastes:** All the rag pickers sort their collected waste in different categories like paper, plastic, glass, metal, rubber, etc. so that the suitable amount of money can be earned by selling those waste.

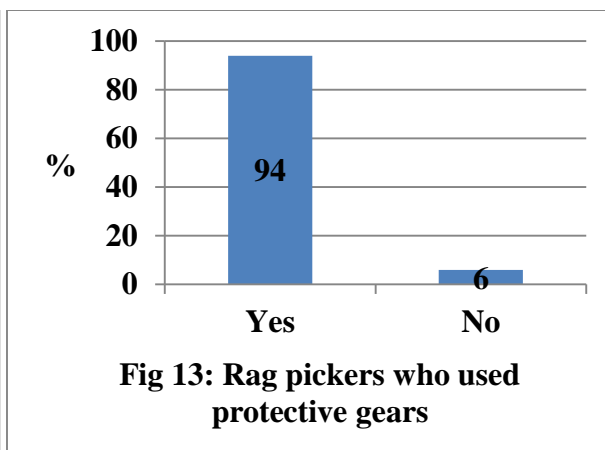
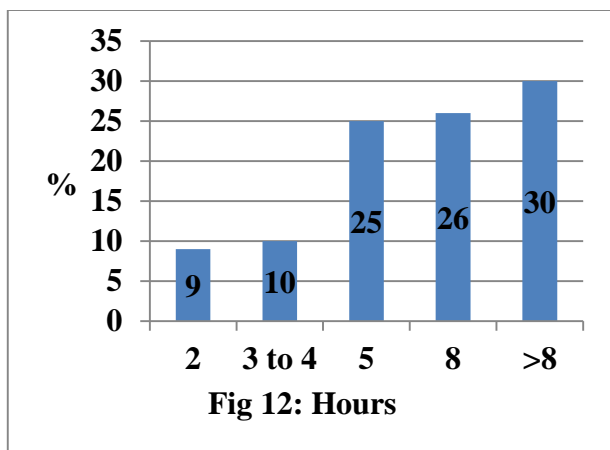
8. **Distance traveled:** 25% of the rag pickers traveled 2 to 5 km. in order to collect the waste. This includes the child rag pickers and the females who are engaged in other household activities also.40% of the rag pickers traveled 5 to 10 km. This includes those rag pickers who are of teenage. 25 % traveled 10 to 15 km in order to maintain their survival. 10% of rag pickers traveled more than 10 to 15 km. This includes those who are totally engaged in this job and have many responsibilities.



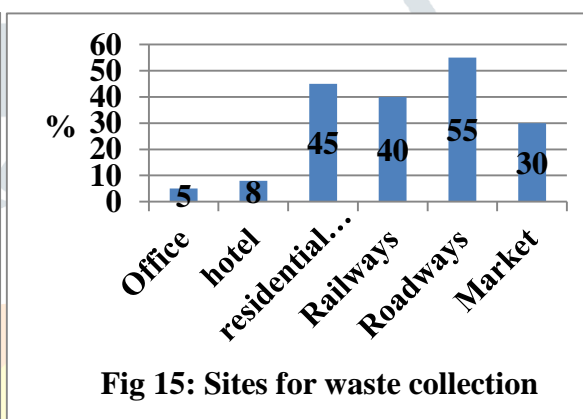
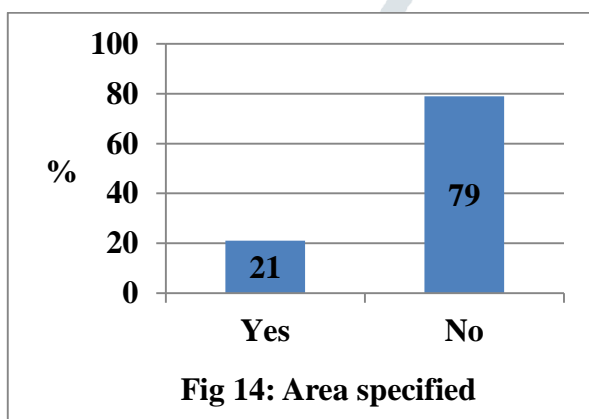
9. **Any other member of the family who do this work:** 60% of the rag pickers family members were also engaged in this work in order to earn money and help the family.40% of the rag pickers family members were not engaged in this work since they were sent to school for their education as well as the head of the family did not allow anyone else to do this job.

10. **Duration of the collection of waste in a day:** 25% of the rag pickers gave 5 hrs. of their daily time in this job since they have to do other household activities as well as study. These include child rag pickers and some females.26% gave 8 hrs. to this work as per their efficiency.30% of the rag pickers gave more than 8 hrs. to this job as they are totally engaged in this job and in order to earn more money they worked hard.10% of the rag pickers gave 3-4 hrs to this job according to their efficiency. In this many child pickers were included.9% gave only 2 hrs only to help the family members.

11. **Use of protective gears:** Only 6% of the rag pickers used the gloves for collecting the waste because of the awareness and the availability of the gloves and rest 94% did not use any protective gear to collect waste because they did not care about the injury and availability was also an issue.



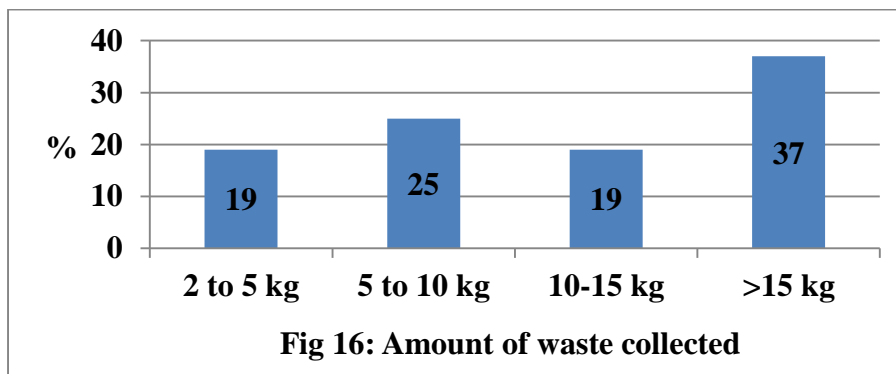
12. **The area specified for waste collection:** Only 21% of the rag pickers had the specified area like markets, offices, railways, roadways etc. for collecting the waste due to the high availability of the waste and rest 79% collected waste from anywhere because the collection of waste was only the motive.



13. **Places where rag pickers frequently for waste collection:** About 5% of the rag pickers collected the waste from the office area because there is less chance of getting the high amount of waste. About 8 % of the rag pickers collected waste from the hotel and restaurant because here also the probability of getting waste is low because the food is consumed and hotel persons dump the waste at the dump site. 45% of the rag pickers collected waste from residential colonies because here the chance of getting the waste is comparatively high due to the household practices. Here also the percentage is low because the municipal organization's employees come with the door-to-door facility to collect the waste. 40% collect from the railway stations because due to a large number of passengers the amount of the wastes like paper, plastics etc. are easily available. 55% collect from the roads from the dump site. Here the chances are maximum because ultimately the waste comes there from different sources. 30% collect from marketplaces because there are many things available for the daily use and so the waste is generated and available.

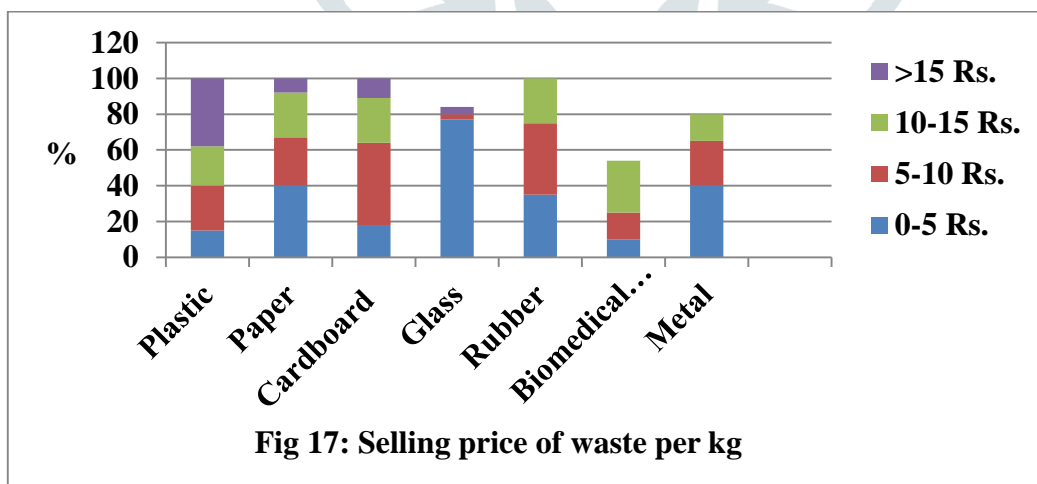
14. **Amount of waste collected per day:** About 19% of the rag pickers collect 2-5 kg per day. It is because it includes the child rag pickers and some females also who have other responsibilities. So as per the efficiency, time and the responsibilities the amount is less. 25% collected 5-10 kg per day. This depends on the time used and the other things like a few rag pickers go to school or any other work. 19% collected 10-

15 kg per day. These rag pickers gave their proper time to this job and collected the rags from different sites. 37% of the rag pickers collected >15 kg per day because they are totally engaged in this job and their motive is to collect more and more rags to earn money.

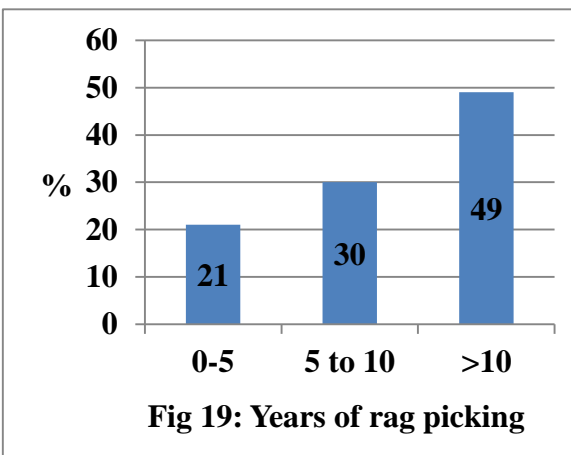
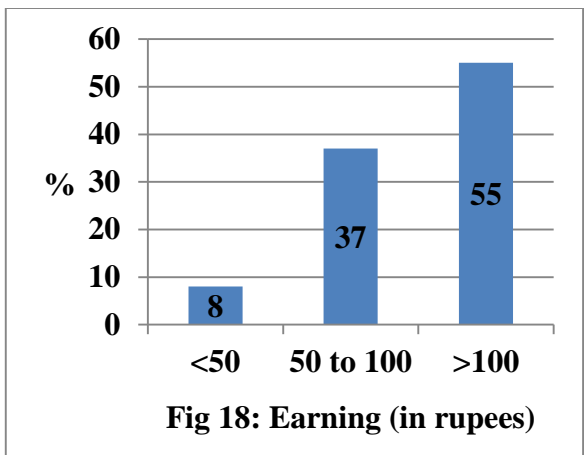


15. Approximate amount of specific waste collected by the rag pickers in one day: No any rag picker was clear about the actual amount of the waste collected per day. According to them, it is also the case that amount of waste collected never remains same every day. Actually, it always changes with large variations. But most rag pickers accepted that the maximum amount of the rag includes paper, cardboard and plastic in comparison to other components of the waste.

16. The selling price of waste per kg: The percentage of rag pickers who sell the waste at different prices is listed below. In this every waste has different selling value. This all depends on various conditions. We put a look on the given table and the results can be discussed. All the wastes are sold at different prices and their rates vary from person to person because of the quality and the dependency on the scrappers who buy these wastes. The reasons for less rate is also some conditions like unsorted waste and cleverness of the scrappers. Secondly, every waste has its own importance so the rates differ.

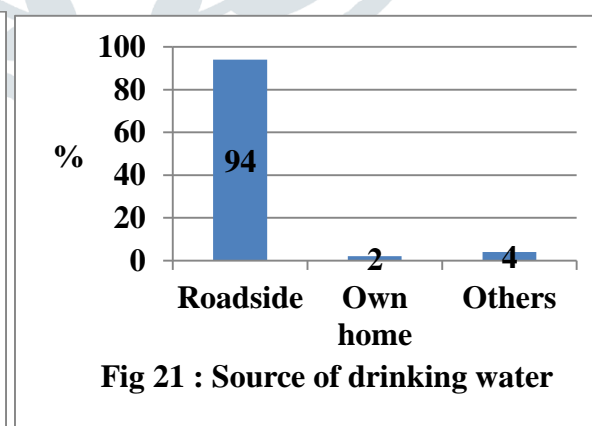
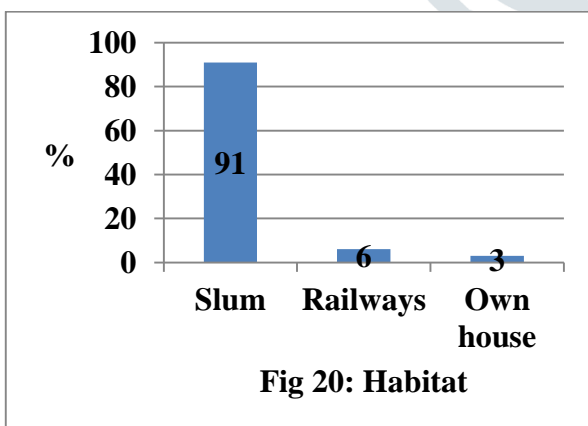


17. Earning in one day: About 8% of the rag pickers earned <50 rupees per day. 37% earned between 50-100 rupees and rest 55% earned >100 rupees per day. The earning totally depended upon the amount of the waste collected. The reason behind the earning of <50 rupees in a day is that the scrappers lend less money with their cleverness and also when unsorted waste is brought it is paid less.



18. **Years of rag picking:** The percentage of rag pickers who were doing this job from 0-5, 5-10, 10-15 yrs. respectively was 21, 30 and 49% respectively. This span of time depended upon the age of the rag pickers and the time from where they started to work in this field. The rag pickers who were doing this work for 10-15 years were totally devoted in this job and hence their percentage is high. Rags were involved in other works also and later they realized that doing this job will increase their earning so they came in this field afterward.

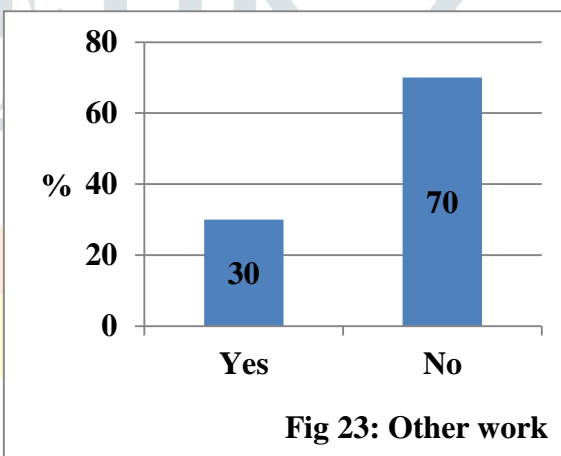
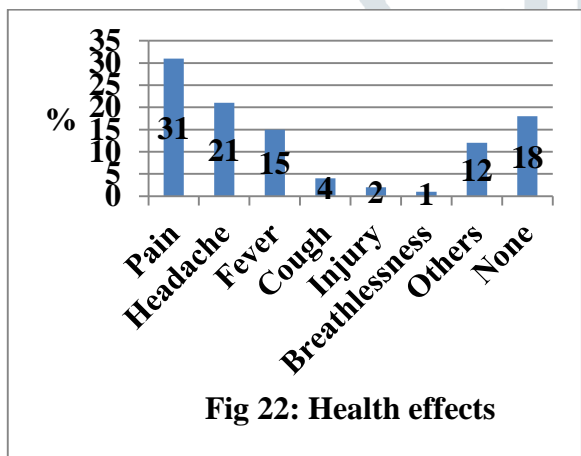
19. **Habitat:** Around 91% of the rag pickers lived in a slum because they did not have much money so that they owe their house and also the society does not allow them to provide a home in residential area. Secondly, they did not have any other option to live. 6% lived on railway platforms because they have not any other place to live and secondly at the platform, they were able to get the water from the railway taps and also the rag picking was easy there due to the rush. Only 3% rag pickers had their own house. This was because they were in this job for many years and the earning was comparatively high due to the involvement of the other members of the family.



20. **Access to drinking water:** 94% of the rag pickers got their water facility from the roadside taps because there was no such facility where they live and also they were unable to pay for the water. 2% have their own home and water supply since they were able to have that facility and their condition was better and also many rag pickers came together for the water supply like hand pump installation, digging well and boring

for water etc. so the problem was resolved for them. Only 4% of the rag pickers had any other facility since their condition was not so good and they took the water from any other place where it is available.

21. General symptoms of ill health: 31% of rag pickers had a complaint of body pain. This was because they carry heavy loads of the rags and for the collection of rags, they travel a very large distance. 21% of the rag pickers complained about a headache since they suffer from stress and also due to the heavy workload they suffer from this problem. 15% suffered from fever due to the heavy workload, harassment and weather conditions. 4% of the rag pickers suffered from a cough and cold due to the weather conditions as well as hot and cold effects. 2% complained about the injury since they collect many hazardous things such as glass, metals etc. as well as the load is high. 12% complained about other problems since they do not have any health facilities so the problem is common. 1% complained about breathlessness due to the bad environment and their personal problem of breathing. 18% of the rag pickers had no complaint since their workload was relatively less and they were aware of health effects.

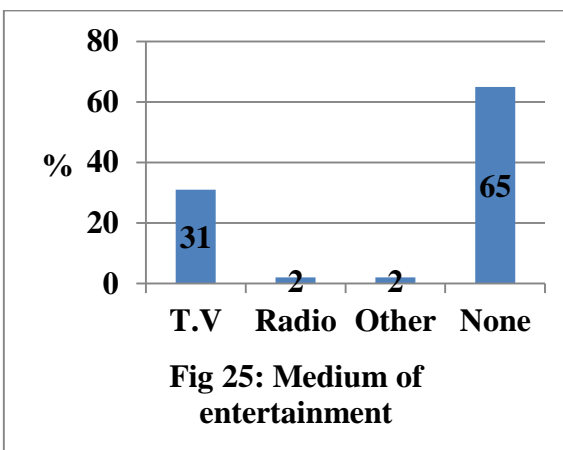
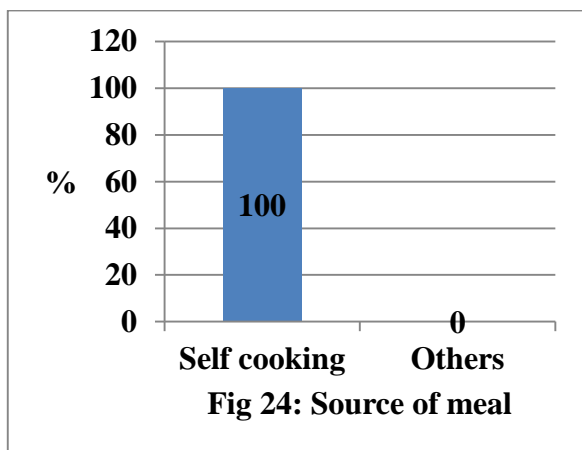


22. Any other work was done by rag pickers: 30% of the rag pickers do other works also like catering services in marriage functions; carrying lights in functions etc. The reason behind this is to earn more money and maintain their livelihood. Rest 70% do rag picking only because they don't have time to do other things and they also got tired so much from rag picking that they are not able to do any other work. Instead of this a lot of people are not needed to do any other work like catering etc. in marriage functions and these persons are only hired if there is a scarcity of the workers in other fields.

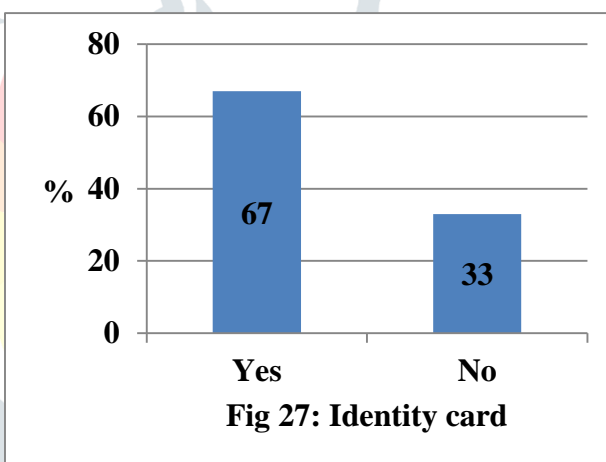
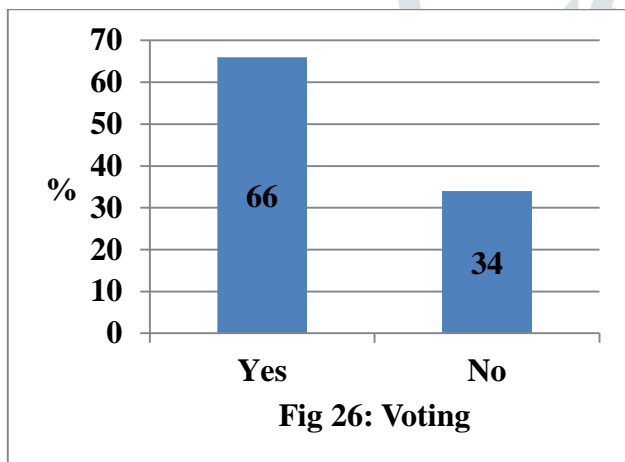
23. Source of the meal: All the rag pickers had the self-cooking facility in their habitats. This is because the self-cooked food is good for them and they have that much earnings so that they can fulfill their requirement of the ration.

24. The medium of entertainment: Maximum rag pickers had no source of entertainment since they cannot afford that but a few of them have it. 31% have a television which was of the second hand. A few have radio i.e. 2%, 2% have other sources of entertainment and rest has no source of entertainment. The source of

entertainment is also needed to remove the stress and to connect with society. The rag pickers who had not any source of entertainment were involved in outdoor activities like playing, gossiping etc.

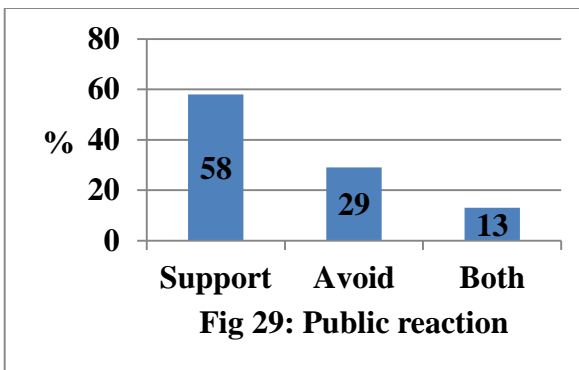
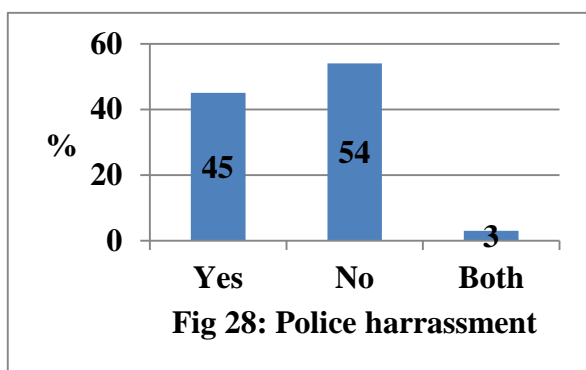


25. Voting: 66% of the rag pickers had voter id and they vote, rest 34% have no voter id and they did not vote. The reason behind this that maximum had their name on voter list since they fulfill the criteria of the election commission and among the remaining many of the rag pickers were underage, unaware and careless.



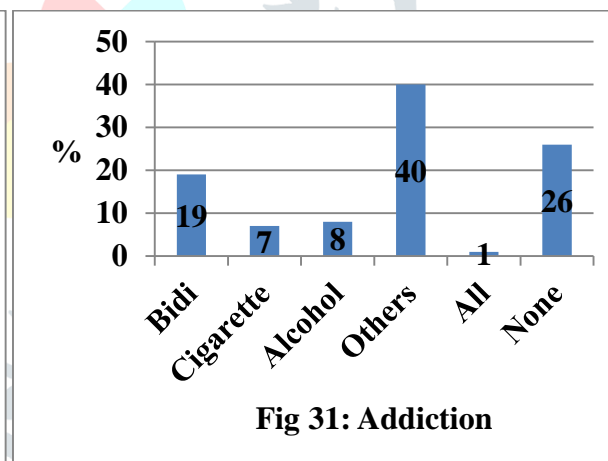
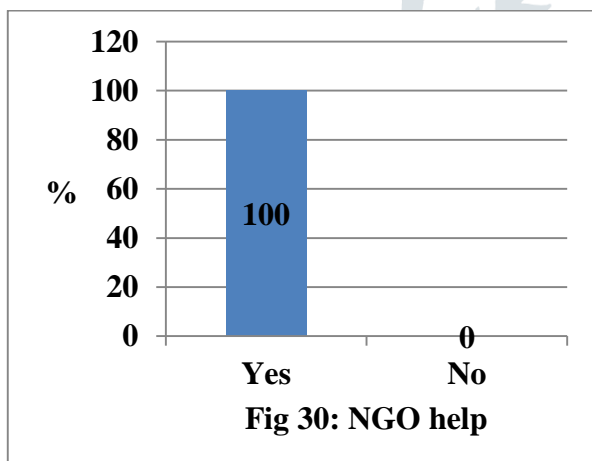
26. Availability of ration card, Aadhar card, voter id: 67% of the rag pickers had their identity card among all these three I cards mentioned. 33% had not any identity card.

27. Police harassment: About 45% of the rag pickers faced police harassment. This was due to the wrong time when they collected the waste and secondly due to the attitude of the policemen towards them. Secondly, the policemen took money illegally from them by threading them that their work is illegal. 54% of rag pickers did not face police harassment because they do their work at the right time and in the right manner. Secondly, it is good for the cleanliness of the society. However, it also matters from person to person that how they treat these people. Only 3% faced both the situation of support and harassment from the policemen. It depends upon the view and the situation present at that time.



28. **Public reaction towards the rag pickers:** 58% of the rag pickers were supported by the public because the public mentality is that the cleanliness is good for the society. Secondly, they understand the need of these people and also understand that this is their work. 29% of the rag pickers were avoided by the public because as the mentality of the people was that these people are of a low level and are dirty. Thirdly, they think that these people are involved in crime and theft. 13% of the rag pickers faced both the situation because of the mentality and conditions faced.

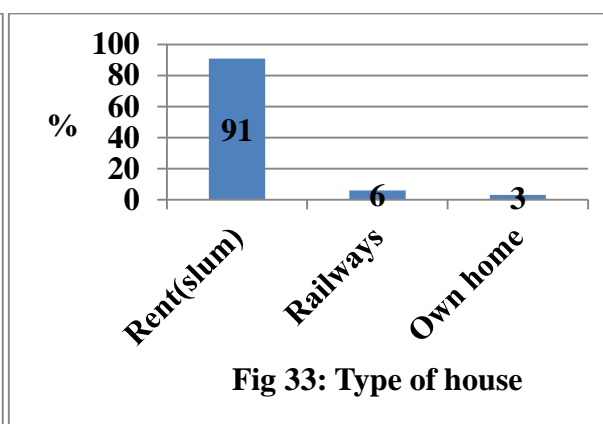
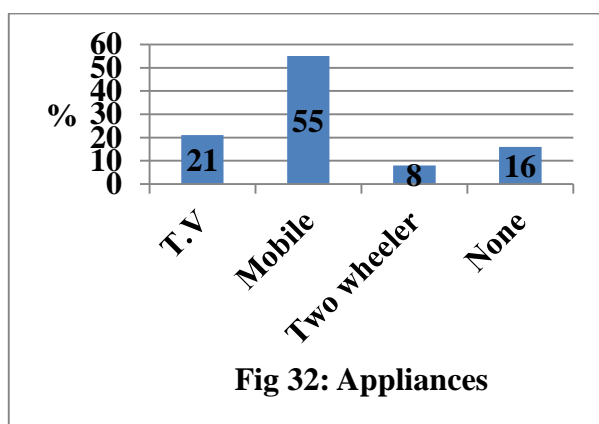
29. **Help by NGOs:** There is no NGO in Varanasi who helps the rag pickers according to this survey because the rag pickers are also not aware of NGO and also they do not trust them.



30. **Addiction:** The addiction to bidi, cigarette, alcohol and other addictive things were among 19, 7, 8 and 40% of the rag pickers. The reason behind this that they think that it is a remedy for removing stress and also they have nobody to guide them about the ill effects of these things. Thirdly these people get involved in the bad company also who endorse them to do these types of addictive things. 26% had no addiction because many of them were children and females and they were not habituated or affected by these bad habits.

31. **Home appliances:** About 21% of rag pickers have television as an appliance. The television was either of second hand or donated from anybody when it was not in use. Also, their earning was that much so that they can afford a television. 55% had mobile phones since it is very much necessary appliance in today's life. The mobile is cheap and that was also of second hand or in bad condition and only communication was

possible. 8% had two-wheelers like a bicycle for the transport purpose.16% of rag pickers had no home appliance because they cannot afford it.



32. Type of house: 91% of rag pickers lived on rent in slums .6% on railway platforms and 3% had their own house. The houses were of raw materials since the raw infrastructure is relatively cheap and also they cannot afford that much costly house. The rag pickers who live on platforms have no option due to their fewer earnings.

Conclusion:

This whole survey concluded that the rag pickers condition is obviously bad and there should some steps be taken by the government to improve it. The study reported that there are 57% rag pickers male and 43% females. It means that their condition is bad and a single person is not sufficient to run the house. When we talk about education we see that a large number of rag pickers are uneducated i.e. 60% and also the child rag pickers are there. This condition persists, due to the lack of education. The migrant rag pickers are high in number as they do not get a job in their own hometown and they migrate to other places for the job opportunities. These rag pickers are very useful for the clean society as well as the recycle the waste materials. We cannot live without water a day, the same condition is here also; if the rag pickers will not be there only even for a single day then the society will become a mountain of garbage. They travel a long distance in search of the rags and collect them and there is no leave means they work 365 days a year, but unfortunately the person who is most important for us live in very harsh conditions and also tortured by the bad mentality of the society.

They put their lives in danger and are affected by various health issues but also they perform their work. They earn a little amount of money and also do not have proper habitats. Many live in slums (91%) which have a high level of pollution due to wastes. Many of them do not have any home and live on the platforms. The society and policemen also harass them due to their conditions. Due to the harsh conditions and stress, they often get depressed and join the bad company and habits like an addiction. In a nutshell, the result comes that rag pickers are very important for the society but their condition is worst and the

government should take some steps as well as public so that they can live happily and respectfully in the society.

The views expressed in the article are the sole responsibility of the authors.

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